February 2015

Fourth National Report on Human Exposure to Environmental Chemicals

CDC

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Fourth National Report on Human Exposure to Environmental Chemicals, Updated Tables, February 2015

The *Updated Tables, February 2015* provides nationally representative biomonitoring data that have become available since the publication of the *Fourth National Report on Human Exposure to Environmental Chemicals, 2009*. The *Updated Tables, February 2015* presents recently released data from NHANES 2005-2006, 2007-2008, 2009-2010, and 2011-2012 and also NHANES 2005-2006 and 2007-2008 pooled samples using the corrected NHANES sampling weights.

The *Updated Tables, February 2015* presents data for a total of 265 chemicals, of which 65 are new and 139 have updated data since the *Updated Tables, August 2014*. Over time, some of the chemicals and the samples in which they have been measured have changed. For example, a number of chemicals have been measured in a Special Sample of the U.S. population, namely, adult cigarette smokers and nonsmokers. These data tables are presented together (Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample). A link to a Biomonitoring Summary, information about a specific chemical or chemical group, is provided at the bottom of many of the data tables. Several chemicals have a link to a Fact Sheet about the chemical or chemical group. Two appendices have been updated to include information pertinent to these chemicals, and the other chemicals included in the *Updated Tables* (Appendix C. References for Biomonitoring Methods; Appendix D. Limit of Detection Table).

A complete list of the chemicals included in this *Updated Tables* is posted on the *Report* website: Chemicals in the *Fourth Report: Updated Tables, February 2015*. The *Updated Tables, February 2015* provides updated tables for 184 chemicals from the publication of the *Fourth Report* and new tables for 76 chemicals.

The *Report* website is the best resource for the most recent updates of available data (http://www.cdc.gov/exposurereport). The website contains details of the Data Sources and Data Analysis, Interpretation of *Report* Data, and Chemical and Toxicological Information that pertain to the *Updated Tables.*

For additional details regarding the pooled samples, see the section Special Analysis of Pooled Samples for Select Chemicals.

What's New and Different?

The *Updated Tables* in this release include chemicals that have results available from the NHANES survey periods 2005-2006, 2007-2008, 2009-2010, and 2011-2012. New chemicals measured for the first time include copper, zinc, and selenium in serum; manganese, strontium, and tin in urine; cyclohexane-1,2-dicarboxylic acid mono(hydroxy-isononyl) ester (MHNCH) which is the urinary metabolite of 1,2- cyclohexane dicarboxylic acid, diisononyl ester (DINCH), a phthalate alternative; and 29 urinary metabolites of several volatile organic compounds.

Chemicals with updated data in this release are

- urinary NNAL;
- urinary metals and arsenic species;
- urinary perchlorate, nitrate, and thiocyanate;
- urinary phthalate metabolites;
- urinary polycyclic aromatic hydrocarbon metabolites;
- serum perfluorinated compounds;
- urinary environmental phenols and parabens;
- urinary metabolites of pyrethroids, herbicides, specific organophosphorus pesticides, and other pesticide metabolites;
- serum polybrominated diphenyl ethers (pooled);
- serum organochlorine pesticides and metabolites (pooled);
- serum mono-*ortho*-substituted polychlorinated biphenyls (pooled);
- serum non-dioxin-like polychlorinated biphenyls (pooled).

Beginning with the *Updated Tables*, *February 2015*, we present a data table for Urinary Inorganic-related Arsenic Species. The inorganic-related arsenic species is the sum of arsenite (arsenous III acid) + arsenate (arsenic V acid) + dimethylarsinic acid + monomethylarsonic acid. The sum is calculated using the concentrations of these four arsenic-related species from each individual NHANES participant. Inorganic-related arsenic may be a more toxicologically and health relevant measure than total urinary arsenic, which includes non-toxic organic arsenic species. A description of the calculation follows (Calculation of Urinary Inorganic-related Arsenic Species).

Changes to racial/ethnic categories

NHANES made changes in oversampling of population subgroups for the 2007-2010 survey periods. Beginning in 2007, adolescents were no longer oversampled, and all Hispanics were oversampled, rather than just Mexican American persons. Beginning in 2011 non-Hispanic Asians were oversampled. As a result of these changes and starting with NHANES 2011-2012, the number of racial/ethnic categories in the *National Report* has been increased from three to five: Mexican Americans, non-Hispanic black, non-Hispanic white, All Hispanic, and non-Hispanic Asian (Asian is the term used in the data tables). The non-Hispanic Asian category includes all persons having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea,

Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. More information about the NHANES 2011-2012 survey design and reporting guidelines is available at: http://www.cdc.gov/nchs/data/nhanes/analytic_guidelines_11_12.pdf.

We present data starting with NHANES 2011-2012 in a new data table to accommodate the new racial/ethnic categories. These data tables are distinguished from earlier (preceding) data tables by including the NHANES survey years in the title. For example, blood lead results from 1999-2010 are shown in one data table, followed by a data table showing results for 2011-2012.

Adult Cigarette Smokers and Nonsmokers: Analysis of Selected Chemicals in a Special Sample

Beginning with the NHANES 2011-2012 survey period, a special sample of adults (age 20 years and older) was used to measure select chemical groups that are associated with tobacco smoke exposure. This special sample includes adults who reported that they currently smoke cigarettes. Results for these chemicals are provided in the section, Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample. The chemicals included in this section are urinary metals and arsenic species; urinary perchlorate, nitrate, and thiocyanate; urinary metabolites of several polycyclic aromatic hydrocarbons (PAHs); and urinary metabolites of several volatile organic compounds. Future *Updated Tables* will present additional data for the special sample as results become available.

Chemicals No Longer Being Reported

Results for several chemicals will not be reported after NHANES 2009-2010 because their concentrations have been largely undetectable in previous survey periods. These chemicals are urinary 4-*tert*-octylphenol; the urinary metals, platinum and beryllium; the urinary phthalate metabolites, mono-cyclohexyl phthalate (MCHP) and mono-*n*-octyl phthalate (MOP); and the urinary organochlorine pesticide metabolites 2,4,5-trichlorophenol and 2,4,6-trichlorophenol. The phytoestrogen group of chemicals is not reported after NHANES 2009-2010 because the largely dietary sources remain unchanged, and urine concentrations of the phytoestrogens and metabolites have been relatively stable over tiime.

For the information in this section, “What’s New and Different,” contained in previous releases of *Updated Tables*, please see the Archives from *Updated Tables* at: http://www.cdc.gov/exposurereport/.

Calculation of Urinary Inorganic-related Arsenic Species

The *Updated Tables, February 2015* presents a new data table for urinary inorganic-related arsenic species. The values are calculated using results for each NHANES survey period for the following four arsenic species: arsenic (V) acid, arsenous (III) acid, dimethylarsinic acid (DMA), and monomethylarsonic acid (MMA). The sum of the four species is calculated for each individual NHANES participant. If the value of a species is less than the limit of detection (LOD), then the imputed value is used. The imputed value is calculated as the LOD divided by the square root of 2 (Hornung and Reed, 1990) and imputed values are provided in the NHANES public release file. If all four arsenic species are reported as less than the LOD, then the sum will be the sum of the four imputed values.

The geometric means, selected percentiles, and confidence intervals are calculated using sums with detectable values of 60 percent or higher. If the detection frequency for a category is less than 60 percent, this is indicated by an asterisk (*).

Reference: Hornung RW, Reed LD. 1990. Estimation of average concentration in the presence of nondetectable values. Appl Occup Environ Hyg 5(1):46-51.

Serum Cotinine (1999 – 2010)

Metabolite of nicotine (component of tobacco smoke)

Geometric mean and selected percentiles of serum concentrations (in ng/mL) for the ***non-smoking** U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.060** (<LOD-.080)	**.240** (.190-.302)	**1.02** (.770-1.28)	**1.96** (1.60-2.62)	5999
	01-02**	**.062** (.050-.077)	**< LOD**	**.160** (.120-.220)	**.930** (.740-1.17)	**2.20** (1.83-2.44)	6819
	03-04	**.071** (.057-.089)	**.050** (.040-.070)	**.210** (.140-.310)	**.990** (.740-1.30)	**2.17** (1.81-2.54)	6320
	05-06	**.054** (.047-.061)	**.040** (.030-.040)	**.120** (.100-.150)	**.630** (.460-.870)	**1.47** (1.15-1.92)	6347
	07-08	**.057** (.048-.068)	**.040** (.030-.040)	**.130** (.100-.180)	**.760** (.550-1.09)	**1.81** (1.45-2.43)	6197
	09-10	**.041** (.037-.046)	**.030** (.020-.030)	**.070** (.070-.090)	**.450** (.350-.580)	**1.29** (1.04-1.61)	6678
Age group							
3-11 years	99-00	**.164** (.115-.234)	**.110** (.066-.188)	**.500** (.260-1.16)	**1.88** (.997-3.44)	**3.44** (1.42-4.79)	1174
	01-02**	**.110** (.076-.160)	**.070** (<LOD-.130)	**.570** (.310-1.00)	**2.23** (1.63-2.78)	**3.23** (2.53-4.01)	1415
	03-04	**.137** (.088-.213)	**.120** (.060-.220)	**.620** (.310-1.20)	**2.04** (1.38-2.94)	**3.35** (2.12-4.68)	1252
	05-06	**.078** (.062-.097)	**.050** (.040-.070)	**.220** (.160-.350)	**1.22** (.880-1.82)	**2.42** (1.63-3.46)	1296
	07-08	**.095** (.067-.136)	**.060** (.040-.100)	**.380** (.170-.840)	**1.67** (1.10-2.54)	**2.81** (2.26-3.54)	1337
	09-10	**.060** (.047-.075)	**.040** (.030-.050)	**.160** (.110-.250)	**.920** (.560-1.58)	**2.15** (1.35-3.00)	1355
12-19 years	99-00	**.163** (.142-.187)	**.110** (.080-.163)	**.540** (.428-.660)	**1.66** (1.50-1.95)	**2.62** (2.09-3.39)	1773
	01-02**	**.086** (.059-.126)	**.050** (<LOD-.110)	**.350** (.190-.580)	**1.53** (1.09-2.12)	**3.12** (2.47-3.99)	1902
	03-04	**.110** (.087-.139)	**.080** (.060-.120)	**.510** (.350-.670)	**1.55** (1.21-1.93)	**2.68** (1.96-4.02)	1783
	05-06	**.074** (.060-.092)	**.050** (.040-.060)	**.230** (.150-.350)	**1.16** (.860-1.69)	**2.26** (1.69-2.72)	1714
	07-08	**.081** (.061-.106)	**.050** (.030-.070)	**.350** (.170-.550)	**1.25** (.930-1.99)	**2.54** (2.04-2.94)	934
	09-10	**.056** (.044-.072)	**.030** (.020-.040)	**.130** (.080-.230)	**.980** (.510-1.80)	**2.49** (1.31-3.65)	1042
20 years and older	99-00	*	**.050** (<LOD-.061)	**.167** (.140-.193)	**.630** (.533-.820)	**1.50** (1.28-1.66)	3052
	01-02**	**.052** (<LOD-.063)	**< LOD**	**.110** (.090-.150)	**.630** (.470-.790)	**1.42** (1.14-1.89)	3502
	03-04	**.058** (.047-.071)	**.040** (.030-.050)	**.140** (.100-.200)	**.630** (.480-.840)	**1.54** (1.26-1.92)	3285
	05-06	**.047** (.042-.053)	**.030** (.030-.040)	**.100** (.080-.120)	**.440** (.310-.620)	**1.14** (.870-1.41)	3337
	07-08	**.049** (.043-.057)	**.030** (.030-.040)	**.100** (.080-.120)	**.490** (.390-.640)	**1.37** (.970-1.70)	3926
	09-10	**.037** (.034-.040)	**.020** (.020-.030)	**.070** (.060-.070)	**.310** (.240-.390)	**.990** (.700-1.24)	4281
Gender							
Males	99-00	**.124** (.106-.145)	**.080** (.060-.110)	**.308** (.220-.410)	**1.20** (.950-1.49)	**2.39** (1.66-3.22)	2789
	01-02**	**.075** (.059-.094)	**.050** (<LOD-.070)	**.230** (.160-.320)	**1.17** (.960-1.49)	**2.44** (2.23-2.99)	3152
	03-04	**.087** (.070-.108)	**.060** (.040-.080)	**.280** (.190-.360)	**1.23** (.910-1.68)	**2.63** (2.09-3.19)	2937
	05-06	**.064** (.055-.074)	**.040** (.040-.050)	**.150** (.120-.190)	**.720** (.550-1.07)	**1.85** (1.42-2.24)	2922
	07-08	**.068** (.056-.081)	**.040** (.040-.050)	**.170** (.120-.240)	**1.07** (.690-1.39)	**2.52** (1.84-2.92)	2948
	09-10	**.046** (.042-.051)	**.030** (.030-.030)	**.080** (.070-.100)	**.550** (.410-.700)	**1.60** (1.19-2.38)	3181
Females	99-00	*	**< LOD**	**.180** (.148-.230)	**.850** (.600-1.14)	**1.85** (1.33-2.45)	3210
	01-02**	**.053** (<LOD-.066)	**< LOD**	**.120** (.090-.180)	**.710** (.540-.990)	**1.77** (1.32-2.20)	3667
	03-04	**.060** (.047-.077)	**.040** (.030-.060)	**.160** (.110-.260)	**.860** (.580-1.15)	**1.76** (1.32-2.22)	3383
	05-06	**.047** (.040-.054)	**.030** (.030-.040)	**.100** (.070-.130)	**.510** (.300-.830)	**1.23** (1.04-1.52)	3425
	07-08	**.050** (.042-.059)	**.030** (.030-.040)	**.110** (.080-.150)	**.630** (.400-.900)	**1.40** (1.09-1.87)	3249
	09-10	**.037** (.033-.042)	**.020** (.020-.030)	**.070** (.050-.080)	**.380** (.270-.570)	**1.03** (.720-1.61)	3497

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.05, 0.05, 0.015, 0.015, 0.015, and 0.015 respectively. .

< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**In the 2001-2002 survey period, 83% of measurements had an LOD of 0.015 ng/mL, and 17% had an LOD of 0.05 ng/mL.

***Non-smoking is defined as a serum cotinine concentration of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cotinine_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Cotinine_FactSheet.html

Serum Cotinine (1999 – 2010)

Metabolite of nicotine (component of tobacco smoke)

Geometric mean and selected percentiles of serum concentrations (in ng/mL) for the ***non-smoking** U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**.140** (.110-.180)	**.506** (.370-.726)	**1.21** (.900-1.70)	2241
	01-02**	**.060** (<LOD-.084)	**< LOD**	**.160** (.080-.310)	**.730** (.480-1.19)	**2.12** (1.19-2.96)	1878
	03-04	**.054** (.043-.068)	**.030** (.020-.050)	**.120** (.080-.180)	**.690** (.430-1.00)	**2.65** (1.87-3.57)	1707
	05-06	**.047** (.038-.059)	**.030** (.020-.040)	**.100** (.070-.150)	**.500** (.370-.730)	**1.54** (.830-2.49)	1807
	07-08	**.044** (.033-.057)	**.030** (.020-.040)	**.080** (.060-.120)	**.480** (.290-.880)	**1.59** (1.00-3.07)	1412
	09-10	**.038** (.032-.045)	**.020** (.020-.030)	**.060** (.050-.080)	**.360** (.230-.640)	**1.35** (.710-2.25)	1615
Non-Hispanic blacks	99-00	**.175** (.153-.201)	**.131** (.111-.150)	**.505** (.400-.625)	**1.43** (1.21-1.75)	**2.34** (1.84-3.50)	1333
	01-02**	**.164** (.137-.197)	**.130** (.110-.160)	**.580** (.450-.770)	**1.77** (1.55-2.05)	**3.15** (2.50-4.30)	1602
	03-04	**.144** (.104-.198)	**.120** (.080-.180)	**.520** (.350-.770)	**1.54** (1.20-2.14)	**2.77** (2.18-3.54)	1704
	05-06	**.114** (.085-.153)	**.080** (.060-.120)	**.440** (.240-.690)	**1.42** (.900-2.03)	**2.45** (1.70-3.70)	1630
	07-08	**.094** (.079-.112)	**.060** (.050-.090)	**.320** (.250-.390)	**1.19** (.980-1.46)	**2.37** (1.75-2.88)	1244
	09-10	**.095** (.074-.122)	**.070** (.050-.090)	**.320** (.210-.540)	**1.33** (.900-2.05)	**2.85** (1.97-3.60)	1129
Non-Hispanic whites	99-00	*	**.050** (<LOD-.073)	**.216** (.154-.312)	**.950** (.621-1.40)	**1.92** (1.48-3.02)	1950
	01-02**	**.052** (<LOD-.068)	**< LOD**	**.120** (.090-.180)	**.800** (.570-1.11)	**1.88** (1.48-2.30)	2847
	03-04	**.066** (.050-.087)	**.040** (.030-.070)	**.180** (.120-.300)	**.920** (.620-1.32)	**2.01** (1.70-2.49)	2500
	05-06	**.049** (.042-.056)	**.030** (.030-.040)	**.100** (.080-.130)	**.530** (.330-.800)	**1.27** (.980-1.62)	2404
	07-08	**.056** (.043-.073)	**.040** (.030-.050)	**.130** (.080-.240)	**.750** (.440-1.27)	**1.70** (1.24-2.54)	2485
	09-10	**.037** (.033-.043)	**.020** (.020-.030)	**.070** (.050-.080)	**.350** (.240-.560)	**1.06** (.780-1.60)	2743

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.05, 0.05, 0.015, 0.015, 0.015, and 0.015 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
*Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**In the 2001-2002 survey period, 83% of measurements had an LOD of 0.015 ng/mL, and 17% had an LOD of 0.05 ng/mL.
***Non-smoking is defined as a serum cotinine concentration of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cotinine_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cotinine_FactSheet.html

Serum Cotinine (2011 - 2012)

Metabolite of nicotine (component of tobacco smoke)

Geometric mean and selected percentiles of serum concentrations (in ng/mL) for the **non-smoking U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**.020** (.018-.023)	**.059** (.049-.072)	**.356** (.263-.500)	**1.30** (.882-1.60)	6108
Age group							
3-11 years	11-12	**.058** (.045-.074)	**.031** (.024-.045)	**.172** (.100-.313)	**1.02** (.627-1.94)	**2.49** (1.56-3.36)	1348
12-19 years	11-12	**.049** (.040-.061)	**.025** (.020-.037)	**.147** (.083-.235)	**.711** (.520-1.06)	**1.47** (1.05-2.29)	990
20 years and older	11-12	*	**.019** (.016-.020)	**.047** (.040-.053)	**.210** (.176-.263)	**.835** (.566-1.38)	3770
Gender							
Males	11-12	**.041** (.037-.045)	**.023** (.020-.026)	**.076** (.065-.095)	**.530** (.397-.715)	**1.76** (1.35-2.42)	2903
Females	11-12	*	**.019** (.016-.021)	**.048** (.040-.059)	**.244** (.189-.314)	**.819** (.572-1.31)	3205
Race/ethnicity							
Mexican Americans	11-12	**.033** (.027-.042)	**.021** (.016-.027)	**.055** (.040-.081)	**.230** (.106-.386)	**.668** (.349-2.07)	886
Non-Hispanic blacks	11-12	**.076** (.054-.107)	**.045** (.032-.071)	**.259** (.127-.513)	**1.10** (.678-2.02)	**2.86** (1.46-4.20)	1576
Non-Hispanic whites	11-12	*	**.017** (<LOD-.020)	**.048** (.039-.061)	**.277** (.207-.363)	**1.10** (.627-1.50)	1841
All Hispanics	11-12	**.033** (.028-.040)	**.021** (.017-.026)	**.054** (.041-.074)	**.233** (.123-.387)	**.834** (.377-2.37)	1587
Asians	11-12	**.030** (.026-.035)	**.023** (.020-.027)	**.046** (.037-.058)	**.123** (.083-.201)	**.308** (.201-.594)	878

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.015.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Non-smoking is defined as a serum cotinine of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cotinine_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cotinine_FactSheet.html

Urinary NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol) (2007 – 2010)

Metabolite of (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone) (NNK)

Geometric mean and selected percentiles of urine concentrations (in pg/mL) for the ****non-smoking** U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	07-08	*	**< LOD**	**2.80** (2.20-3.70)	**11.1** (8.80-14.4)	**24.5** (18.0-30.4)	5212
	09-10	*	**< LOD**	**1.90** (1.60-2.40)	**7.30** (6.40-8.50)	**16.7** (13.9-19.6)	6067
Age group							
6-11 years	07-08	*	**1.30** (.600-2.60)	**8.50** (4.70-13.8)	**31.4** (17.5-49.8)	**60.6** (37.1-75.7)	875
	09-10	*	**.600** (<LOD-1.00)	**3.10** (2.20-5.00)	**15.5** (10.4-22.8)	**29.3** (18.1-59.4)	937
12-19 years	07-08	*	**1.20** (.600-2.10)	**5.00** (3.80-9.20)	**20.0** (11.9-27.5)	**39.1** (20.6-60.9)	843
	09-10	*	**.900** (<LOD-1.50)	**3.70** (2.70-5.20)	**12.5** (6.90-25.5)	**29.1** (13.9-51.4)	1004
20 years and older	07-08	*	**< LOD**	**2.10** (1.70-2.50)	**8.20** (6.90-9.80)	**16.6** (13.9-21.5)	3494
	09-10	*	**< LOD**	**1.60** (1.30-1.90)	**6.10** (5.10-6.90)	**13.1** (10.7-15.8)	4126
Gender							
Males	07-08	*	**< LOD**	**3.80** (3.00-4.50)	**12.6** (10.6-15.0)	**27.5** (18.9-38.1)	2463
	09-10	*	**< LOD**	**2.40** (1.90-3.00)	**8.30** (7.20-9.90)	**19.3** (15.2-22.5)	2903
Females	07-08	*	**< LOD**	**2.10** (1.50-2.90)	**9.70** (7.10-13.6)	**21.6** (16.6-28.0)	2749
	09-10	*	**< LOD**	**1.60** (1.30-1.90)	**6.50** (4.70-8.80)	**14.0** (10.7-19.0)	3164
Race/ethnicity							
Mexican Americans	07-08	*	**< LOD**	**2.00** (1.20-3.10)	**6.90** (4.90-9.00)	**13.9** (10.8-17.3)	1206
	09-10	*	**< LOD**	**1.60** (1.20-2.20)	**4.90** (3.70-7.00)	**11.1** (5.70-18.4)	1476
Non-Hispanic blacks	07-08	*	**.800** (<LOD-1.90)	**4.90** (3.60-6.30)	**14.0** (11.6-17.2)	**26.1** (18.5-33.2)	1057
	09-10	**1.81** (1.30-2.54)	**1.40** (<LOD-2.40)	**5.90** (3.80-8.10)	**18.9** (11.7-26.1)	**34.0** (18.9-61.9)	1004
Non-Hispanic whites	07-08	*	**< LOD**	**2.80** (1.90-4.10)	**11.9** (8.20-17.7)	**27.5** (19.6-35.4)	2047
	09-10	*	**< LOD**	**1.80** (1.40-2.40)	**6.80** (5.40-8.40)	**15.2** (11.9-19.3)	2514

Limit of detection (LOD, see Data Analysis section) for Survey years 07-08 and 09-10 are 0.6 and 0.6 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Non-smoking is defined as a serum cotinine concentration of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NNAL_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/NNAL_FactSheet.html

Urinary NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol) (2011 - 2012)

Metabolite of (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone) (NNK)

Geometric mean and selected percentiles of urine concentrations (in pg/mL) for the ****non-smoking** U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**.800** (.700-.900)	**2.30** (2.00-2.60)	**7.40** (6.10-8.90)	**15.7** (11.7-21.0)	5486
Age group							
6-11 years	11-12	**1.91** (1.57-2.32)	**1.30** (1.10-1.70)	**5.10** (3.80-7.30)	**21.1** (11.5-31.9)	**36.7** (20.1-60.2)	955
12-19 years	11-12	**1.53** (1.35-1.73)	**1.30** (1.10-1.40)	**3.10** (2.20-4.30)	**10.8** (7.60-14.4)	**19.3** (13.2-27.0)	949
20 years and older	11-12	*	**.700** (.600-.900)	**2.00** (1.80-2.20)	**5.70** (4.80-6.80)	**11.7** (10.0-14.9)	3582
Gender							
Males	11-12	**1.32** (1.23-1.41)	**1.00** (.900-1.10)	**2.80** (2.40-3.10)	**9.80** (7.60-11.2)	**19.5** (13.5-26.4)	2616
Females	11-12	*	**.700** (.600-.800)	**1.90** (1.70-2.20)	**5.70** (4.60-7.20)	**12.4** (9.00-18.5)	2870
Race/ethnicity							
Mexican Americans	11-12	**1.12** (.956-1.30)	**.900** (.700-1.20)	**1.90** (1.50-2.50)	**5.30** (3.70-7.40)	**9.50** (7.70-15.0)	775
Non-Hispanic blacks	11-12	**1.98** (1.57-2.48)	**1.60** (1.30-2.10)	**5.10** (3.30-8.70)	**15.9** (9.40-28.8)	**30.4** (18.5-46.7)	1393
Non-Hispanic whites	11-12	*	**.800** (.600-.900)	**2.10** (1.80-2.40)	**6.70** (5.30-8.50)	**14.4** (11.4-20.4)	1679
Asians	11-12	*	**.600** (<LOD-.700)	**1.20** (1.00-1.50)	**2.80** (1.90-3.80)	**5.00** (3.40-6.80)	814

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Non-smoking is defined as a serum cotinine of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NNAL_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/NNAL_FactSheet.html

NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol) (creatinine corrected) (2007 – 2010)

Metabolite of (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone) (NNK)

Geometric mean and selected percentiles of urine concentrations (in pg/mg of creatinine) for the **non-smoking U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	07-08	*	< LOD	2.79 (2.31-3.50)	10.3 (7.36-14.0)	20.5 (16.4-27.5)	5210
	09-10	*	< LOD	2.05 (1.88-2.28)	6.40 (5.71-7.41)	14.6 (11.5-17.3)	6066
Age group							
6-11 years	07-08	*	2.15 (1.38-3.22)	10.7 (5.95-17.9)	38.3 (21.2-57.1)	60.9 (46.4-72.1)	875
	09-10	*	1.19 (<LOD-1.52)	4.25 (2.88-6.37)	19.2 (11.0-28.8)	37.2 (22.9-53.0)	936
12-19 years	07-08	*	1.14 (.710-1.75)	4.40 (2.59-7.36)	14.2 (10.5-23.1)	29.2 (15.6-41.9)	841
	09-10	*	1.05 (<LOD-1.26)	3.08 (1.96-4.37)	10.0 (6.02-15.2)	20.7 (12.3-30.2)	1004
20 years and older	07-08	*	< LOD	2.34 (2.00-2.73)	6.82 (5.49-8.65)	15.1 (11.8-17.7)	3494
	09-10	*	< LOD	1.84 (1.71-2.00)	5.21 (4.57-6.07)	11.4 (8.42-14.1)	4126
Gender							
Males	07-08	*	< LOD	2.98 (2.39-3.71)	10.5 (7.57-12.9)	20.9 (15.7-29.0)	2462
	09-10	*	< LOD	2.00 (1.86-2.25)	6.61 (6.00-7.83)	15.1 (11.7-19.8)	2902
Females	07-08	*	< LOD	2.67 (2.14-3.37)	9.87 (6.79-14.9)	20.0 (15.7-27.9)	2748
	09-10	*	< LOD	2.09 (1.82-2.36)	6.15 (4.88-8.21)	12.7 (9.26-17.3)	3164
Race/ethnicity							
Mexican Americans	07-08	*	< LOD	2.16 (1.55-3.00)	5.91 (4.32-8.30)	13.3 (8.36-17.9)	1205
	09-10	*	< LOD	1.73 (1.36-2.11)	5.00 (3.72-6.84)	10.0 (6.79-14.7)	1476
Non-Hispanic blacks	07-08	*	.960 (<LOD-1.42)	3.70 (2.50-5.31)	11.5 (9.18-14.2)	20.8 (14.5-28.8)	1056
	09-10	1.40 (.982-2.01)	1.21 (<LOD-2.06)	3.96 (2.78-5.99)	12.2 (7.29-20.3)	23.4 (14.3-35.4)	1003
Non-Hispanic whites	07-08	*	< LOD	2.93 (2.22-4.00)	11.4 (7.22-17.1)	23.9 (17.1-32.0)	2047
	09-10	*	< LOD	1.96 (1.82-2.15)	6.09 (5.00-7.83)	14.7 (10.0-18.2)	2514

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Non-smoking is defined as a serum cotinine concentration of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NNAL_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/NNAL_FactSheet.html

Urinary NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol) (creatinine corrected) (2011 - 2012)

Metabolite of (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone) (NNK)

Geometric mean and selected percentiles of urine concentrations (in pg/mg of creatinine) for the **non-smoking U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**1.06** (1.00-1.14)	**2.47** (2.14-2.72)	**6.57** (5.24-8.25)	**14.3** (11.7-18.4)	5483
Age group							
6-11 years	11-12	**2.57** (2.13-3.10)	**1.91** (1.60-2.47)	**5.93** (4.21-8.49)	**23.5** (13.7-31.6)	**39.1** (23.5-59.0)	954
12-19 years	11-12	**1.45** (1.31-1.60)	**1.14** (1.05-1.25)	**3.40** (2.50-3.99)	**9.14** (5.71-13.4)	**18.4** (12.2-22.2)	949
20 years and older	11-12	*	**1.00** (.938-1.08)	**2.12** (1.91-2.42)	**5.00** (4.26-6.18)	**10.5** (8.56-13.0)	3580
Gender							
Males	11-12	**1.19** (1.10-1.29)	**.984** (.909-1.05)	**2.38** (2.08-2.68)	**7.36** (5.60-9.33)	**15.2** (11.5-21.4)	2615
Females	11-12	*	**1.18** (1.04-1.30)	**2.48** (2.17-2.86)	**5.67** (4.69-8.21)	**13.5** (10.3-18.0)	2868
Race/ethnicity							
Mexican Americans	11-12	**1.15** (.985-1.35)	**1.03** (.860-1.22)	**1.94** (1.67-2.35)	**4.72** (3.51-6.74)	**9.93** (6.46-15.9)	775
Non-Hispanic blacks	11-12	**1.50** (1.18-1.91)	**1.31** (1.02-1.63)	**3.70** (2.36-6.09)	**11.5** (6.69-19.0)	**19.7** (11.5-33.7)	1392
Non-Hispanic whites	11-12	*	**1.04** (.984-1.14)	**2.47** (2.06-2.79)	**5.94** (5.14-7.72)	**16.1** (11.5-18.9)	1677
Asians	11-12	*	**.972** (<LOD-1.17)	**1.82** (1.56-2.24)	**3.57** (2.86-4.79)	**5.71** (4.29-8.57)	814

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Non-smoking is defined as a serum cotinine of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NNAL_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/NNAL_FactSheet.html

Blood Bromodichloromethane (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.21** (1.65-2.97)	**2.30** (1.56-3.21)	**4.63** (3.24-6.20)	**8.45** (5.86-12.0)	**12.0** (7.68-19.2)	785
	03-04	**1.50** (1.20-1.86)	**1.40** (1.10-1.90)	**3.40** (2.60-4.20)	**6.20** (5.30-7.00)	**9.50** (7.00-12.0)	1322
	05-06	**1.41** (1.09-1.83)	**1.30** (.880-1.80)	**3.00** (2.10-4.40)	**6.30** (4.30-9.70)	**10.0** (6.80-14.0)	3139
Age group							
12-19 years	05-06	**1.23** (.954-1.58)	**1.00** (.620-1.60)	**2.80** (1.70-4.10)	**5.50** (4.10-7.20)	**8.20** (6.20-12.0)	932
20-59 years	01-02	**2.21** (1.65-2.97)	**2.30** (1.56-3.21)	**4.63** (3.24-6.20)	**8.45** (5.86-12.0)	**12.0** (7.68-19.2)	785
	03-04	**1.50** (1.20-1.86)	**1.40** (1.10-1.90)	**3.40** (2.60-4.20)	**6.20** (5.30-7.00)	**9.50** (7.00-12.0)	1322
	05-06	**1.45** (1.11-1.89)	**1.30** (.900-1.90)	**3.10** (2.10-4.60)	**6.40** (4.30-10.0)	**11.0** (6.90-14.0)	1537
60 years and older	05-06	**1.43** (.996-2.05)	**1.40** (.850-2.00)	**3.20** (1.60-5.90)	**6.50** (3.20-15.0)	**9.70** (5.00-18.0)	670
Gender							
Males	01-02	**2.19** (1.60-3.00)	**2.31** (1.63-3.21)	**4.64** (3.21-6.08)	**7.96** (5.74-15.3)	**13.0** (6.93-20.5)	382
	03-04	**1.48** (1.18-1.85)	**1.40** (.940-2.00)	**3.40** (2.60-4.30)	**6.60** (5.40-7.20)	**11.0** (7.20-14.0)	650
	05-06	**1.39** (1.07-1.80)	**1.20** (.830-1.70)	**3.00** (2.00-4.30)	**6.50** (4.30-10.0)	**11.0** (6.80-16.0)	1489
Females	01-02	**2.24** (1.66-3.01)	**2.28** (1.49-3.24)	**4.63** (3.09-7.01)	**8.62** (5.26-12.9)	**11.1** (7.68-25.0)	403
	03-04	**1.51** (1.21-1.90)	**1.50** (1.10-1.90)	**3.30** (2.50-4.20)	**6.10** (4.69-7.30)	**7.80** (6.40-12.0)	672
	05-06	**1.44** (1.10-1.88)	**1.30** (.900-1.90)	**3.10** (2.10-4.60)	**6.20** (4.20-9.40)	**9.40** (6.30-13.0)	1650
Race/ethnicity							
Mexican Americans	01-02	**3.28** (2.29-4.68)	**3.32** (2.19-4.70)	**6.81** (3.71-10.4)	**10.8** (8.24-14.7)	**14.7** (11.1-20.5)	227
	03-04	**1.65** (1.15-2.38)	**1.60** (.820-2.80)	**3.50** (2.60-4.90)	**7.30** (4.50-10.0)	**10.0** (7.30-11.0)	244
	05-06	**1.95** (1.19-3.18)	**1.90** (1.00-3.70)	**4.40** (2.10-9.10)	**9.10** (4.80-17.0)	**14.0** (7.50-22.0)	771
Non-Hispanic blacks	01-02	**2.32** (1.82-2.94)	**2.50** (1.56-3.55)	**4.57** (3.60-5.56)	**8.69** (5.63-9.49)	**10.0** (5.89-13.5)	130
	03-04	**1.56** (1.15-2.13)	**1.70** (1.10-2.20)	**2.90** (2.15-3.80)	**5.10** (3.80-6.60)	**6.60** (4.90-13.0)	290
	05-06	**1.74** (1.27-2.37)	**1.70** (1.00-2.70)	**3.80** (2.70-4.80)	**6.40** (4.50-8.90)	**8.70** (6.60-11.0)	817
Non-Hispanic whites	01-02	**2.02** (1.42-2.87)	**2.16** (1.36-3.09)	**4.34** (2.92-6.01)	**7.33** (4.72-15.3)	**11.1** (6.01-26.1)	365
	03-04	**1.42** (1.11-1.81)	**1.30** (.850-1.90)	**3.30** (2.30-4.40)	**6.20** (5.20-7.20)	**9.80** (6.70-13.0)	684
	05-06	**1.29** (.989-1.67)	**1.10** (.710-1.70)	**2.70** (1.80-4.10)	**5.80** (4.00-8.60)	**9.40** (6.20-14.0)	1318

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.233, 0.62, and 0.62 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/THM-DBP_BiomonitoringSummary.html

Blood Dibromochloromethane (Chlorodibromomethane) (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**.867** (.521-1.44)	**.780** (.340-1.90)	**2.61** (1.22-4.38)	**5.46** (3.53-9.71)	**8.96** (5.04-12.9)	781
	03-04	*	**< LOD**	**1.30** (1.00-1.80)	**3.60** (2.70-4.80)	**7.20** (4.80-8.60)	1333
	05-06	*	**< LOD**	**1.40** (.870-2.40)	**4.30** (2.40-7.40)	**7.80** (4.60-13.0)	3122
Age group							
12-19 years	05-06	*	**< LOD**	**1.30** (.750-2.50)	**4.10** (2.60-5.50)	**6.50** (4.10-11.0)	925
20-59 years	01-02	**.867** (.521-1.44)	**.780** (.340-1.90)	**2.61** (1.22-4.38)	**5.46** (3.53-9.71)	**8.96** (5.04-12.9)	781
	03-04	*	**< LOD**	**1.30** (1.00-1.80)	**3.60** (2.70-4.80)	**7.20** (4.80-8.60)	1333
	05-06	*	**< LOD**	**1.40** (.860-2.30)	**4.10** (2.40-7.10)	**7.80** (4.20-14.0)	1526
60 years and older	05-06	*	**< LOD**	**1.60** (.780-4.00)	**5.10** (1.30-13.0)	**7.90** (2.20-20.0)	671
Gender							
Males	01-02	**.850** (.481-1.50)	**.730** (.300-2.25)	**2.66** (.960-4.38)	**4.77** (3.33-9.20)	**8.06** (4.31-14.6)	371
	03-04	*	**< LOD**	**1.30** (1.00-1.90)	**3.70** (2.70-5.70)	**7.20** (5.20-8.60)	657
	05-06	*	**< LOD**	**1.40** (.830-2.30)	**4.40** (2.30-7.80)	**8.30** (4.30-14.0)	1487
Females	01-02	**.884** (.550-1.42)	**.820** (.340-1.69)	**2.54** (1.37-4.31)	**6.30** (3.28-10.1)	**9.91** (5.02-13.0)	410
	03-04	*	**< LOD**	**1.30** (1.00-1.80)	**3.60** (2.50-4.80)	**6.60** (3.80-9.20)	676
	05-06	*	**< LOD**	**1.50** (.920-2.50)	**4.20** (2.20-7.80)	**7.20** (4.10-14.0)	1635
Race/ethnicity							
Mexican Americans	01-02	**1.61** (.843-3.06)	**1.49** (.670-3.99)	**4.59** (1.93-8.89)	**9.26** (5.21-12.1)	**12.0** (9.63-16.1)	233
	03-04	**1.20** (.963-1.50)	**1.10** (.810-1.40)	**2.30** (1.50-4.10)	**5.20** (3.80-6.90)	**7.70** (5.20-11.0)	256
	05-06	**1.25** (.774-2.02)	**.950** (<LOD-1.70)	**2.50** (1.00-7.40)	**7.40** (2.50-19.0)	**13.0** (5.80-21.0)	759
Non-Hispanic blacks	01-02	**1.03** (.505-2.09)	**.930** (.530-2.03)	**2.03** (.770-7.06)	**4.22** (2.01-10.5)	**8.09** (2.80-16.5)	128
	03-04	*	**< LOD**	**.970** (.650-1.60)	**1.90** (1.20-3.20)	**3.20** (1.80-5.20)	288
	05-06	*	**.620** (<LOD-.820)	**1.30** (1.00-1.90)	**3.40** (2.10-4.90)	**5.50** (4.10-7.10)	822
Non-Hispanic whites	01-02	**.736** (.413-1.31)	**.640** (<LOD-1.93)	**2.49** (.870-4.27)	**4.57** (3.00-7.12)	**6.98** (4.27-11.1)	357
	03-04	*	**< LOD**	**1.30** (.950-1.80)	**3.30** (2.50-4.60)	**6.60** (3.70-9.20)	685
	05-06	*	**< LOD**	**1.30** (.710-2.30)	**4.10** (2.30-7.10)	**7.70** (4.60-11.0)	1311

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.271, 0.62, and 0.62 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/THM-DBP_BiomonitoringSummary.html

Blood Tribromomethane (Bromoform) (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.57** (1.07-2.31)	**1.39** (.960-2.02)	**2.78** (1.76-4.63)	**6.05** (2.92-29.2)	**15.5** (3.68-85.4)	774
	03-04	*	**< LOD**	**1.80** (<LOD-2.80)	**3.74** (2.30-7.10)	**6.40** (3.60-14.0)	1310
	05-06	*	**< LOD**	**1.20** (<LOD-1.60)	**2.70** (2.00-4.00)	**5.20** (3.10-7.60)	3016
Age group							
12-19 years	05-06	*	**< LOD**	**1.20** (<LOD-1.60)	**2.40** (1.70-4.40)	**4.80** (2.80-7.10)	892
20-59 years	01-02	**1.57** (1.07-2.31)	**1.39** (.960-2.02)	**2.78** (1.76-4.63)	**6.05** (2.92-29.2)	**15.5** (3.68-85.4)	774
	03-04	*	**< LOD**	**1.80** (<LOD-2.80)	**3.74** (2.30-7.10)	**6.40** (3.60-14.0)	1310
	05-06	*	**< LOD**	**1.20** (<LOD-1.60)	**2.90** (1.90-4.20)	**5.20** (3.10-8.80)	1478
60 years and older	05-06	*	**< LOD**	**1.28** (<LOD-2.10)	**2.60** (2.30-3.50)	**4.70** (3.00-7.70)	646
Gender							
Males	01-02	**1.49** (.944-2.34)	**1.29** (.850-1.98)	**2.65** (1.49-5.05)	**6.12** (2.26-33.9)	**14.9** (2.79-69.9)	374
	03-04	*	**< LOD**	**1.90** (<LOD-2.87)	**4.00** (2.40-6.80)	**6.50** (4.00-13.0)	645
	05-06	*	**< LOD**	**1.16** (<LOD-1.60)	**2.70** (1.90-4.00)	**5.00** (3.10-7.60)	1424
Females	01-02	**1.67** (1.17-2.39)	**1.46** (1.05-2.21)	**2.86** (1.89-4.57)	**5.69** (3.30-27.5)	**22.2** (5.09-49.6)	400
	03-04	*	**< LOD**	**1.72** (<LOD-2.65)	**3.20** (1.93-7.70)	**6.10** (3.10-31.0)	665
	05-06	*	**< LOD**	**1.23** (1.00-1.60)	**2.70** (1.90-4.20)	**5.20** (3.10-8.80)	1592
Race/ethnicity							
Mexican Americans	01-02	**2.34** (1.15-4.77)	**1.66** (.990-3.38)	**4.03** (1.42-36.5)	**28.3** (4.39-49.2)	**40.8** (31.5-57.9)	234
	03-04	*	**1.60** (<LOD-3.10)	**3.30** (<LOD-9.40)	**7.60** (3.60-14.0)	**11.0** (5.60-210)	242
	05-06	*	**< LOD**	**1.60** (1.04-3.20)	**4.00** (2.40-5.90)	**5.90** (4.30-8.30)	721
Non-Hispanic blacks	01-02	**1.51** (.857-2.67)	**1.47** (.780-3.15)	**2.58** (1.39-4.64)	**4.34** (2.57-8.48)	**6.27** (3.28-15.2)	121
	03-04	*	**< LOD**	**1.60** (<LOD-2.30)	**2.50** (1.80-3.20)	**3.20** (2.40-6.10)	289
	05-06	*	**< LOD**	**1.10** (<LOD-1.30)	**2.00** (1.70-2.40)	**3.40** (2.30-4.30)	796
Non-Hispanic whites	01-02	**1.47** (.980-2.22)	**1.29** (.840-2.06)	**2.58** (1.51-4.91)	**5.69** (2.84-21.2)	**11.0** (3.30-69.9)	362
	03-04	*	**< LOD**	**1.70** (<LOD-2.90)	**3.50** (2.00-7.70)	**5.90** (3.30-21.0)	680
	05-06	*	**< LOD**	**1.20** (<LOD-1.60)	**2.80** (2.00-3.90)	**5.40** (3.10-9.90)	1271

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.596, 1.5, and 1.0 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/THM-DBP_BiomonitoringSummary.html

Blood Trichloromethane (Chloroform) (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**16.6** (13.0-21.1)	**16.1** (11.9-22.2)	**31.7** (23.9-40.4)	**55.5** (44.5-68.6)	**72.1** (57.3-105)	744
	03-04	**10.2** (8.56-12.2)	**10.0** (8.50-13.0)	**20.0** (17.0-24.0)	**35.0** (29.0-40.0)	**50.0** (37.0-65.0)	1222
	05-06	**10.1** (9.09-11.3)	**9.90** (8.90-11.0)	**19.0** (17.0-21.0)	**36.0** (31.0-41.0)	**54.0** (46.0-64.0)	3111
Age group							
12-19 years	05-06	**9.22** (8.20-10.4)	**9.10** (8.10-10.0)	**17.0** (14.0-20.0)	**33.0** (27.0-40.0)	**46.0** (36.0-64.0)	913
20-59 years	01-02	**16.6** (13.0-21.1)	**16.1** (11.9-22.2)	**31.7** (23.9-40.4)	**55.5** (44.5-68.6)	**72.1** (57.3-105)	744
	03-04	**10.2** (8.56-12.2)	**10.0** (8.50-13.0)	**20.0** (17.0-24.0)	**35.0** (29.0-40.0)	**50.0** (37.0-65.0)	1222
	05-06	**10.5** (9.29-11.8)	**10.0** (8.90-12.0)	**20.0** (18.0-22.0)	**37.0** (31.0-44.0)	**55.0** (46.0-71.0)	1529
60 years and older	05-06	**9.71** (8.25-11.4)	**9.60** (8.20-11.0)	**19.0** (14.0-22.0)	**35.0** (27.0-40.0)	**46.0** (39.0-59.0)	669
Gender							
Males	01-02	**16.8** (12.0-23.5)	**16.1** (11.0-24.8)	**34.3** (22.4-48.7)	**57.0** (39.9-76.4)	**75.2** (54.5-156)	358
	03-04	**10.1** (8.43-12.1)	**10.0** (7.90-14.0)	**20.0** (17.0-25.0)	**36.8** (29.0-49.0)	**53.0** (36.8-69.0)	599
	05-06	**9.94** (8.80-11.2)	**9.80** (8.50-11.0)	**19.0** (17.0-22.0)	**38.0** (33.0-44.0)	**54.0** (46.0-67.0)	1483
Females	01-02	**16.4** (13.4-20.1)	**16.6** (12.0-21.5)	**29.2** (24.0-36.5)	**53.5** (38.4-68.9)	**69.5** (53.3-104)	386
	03-04	**10.4** (8.41-12.7)	**10.0** (8.40-13.0)	**20.0** (16.0-23.9)	**33.0** (26.0-40.0)	**46.0** (35.0-65.0)	623
	05-06	**10.4** (9.24-11.6)	**10.0** (9.10-11.0)	**19.0** (17.0-21.0)	**32.0** (29.0-39.0)	**52.0** (41.0-67.0)	1628
Race/ethnicity							
Mexican Americans	01-02	**17.0** (10.5-27.6)	**14.5** (10.0-32.7)	**35.1** (18.6-57.6)	**60.7** (41.5-100)	**93.0** (49.7-243)	223
	03-04	**9.17** (7.45-11.3)	**9.30** (7.60-11.0)	**19.0** (15.0-24.0)	**34.0** (24.0-44.4)	**44.4** (30.0-59.0)	225
	05-06	**10.3** (8.59-12.5)	**10.0** (7.60-14.0)	**20.0** (17.0-22.0)	**36.0** (30.0-41.0)	**47.0** (41.0-64.0)	740
Non-Hispanic blacks	01-02	**19.1** (12.9-28.1)	**20.9** (9.28-37.4)	**38.4** (27.7-46.0)	**55.9** (45.5-69.8)	**68.9** (51.9-74.0)	116
	03-04	**11.8** (9.54-14.6)	**12.0** (8.90-15.0)	**20.0** (15.0-30.0)	**35.0** (28.0-59.0)	**61.0** (34.0-100)	272
	05-06	**11.9** (9.78-14.4)	**12.0** (9.10-15.0)	**22.0** (19.0-26.0)	**39.0** (31.0-47.0)	**55.0** (46.0-70.0)	822
Non-Hispanic whites	01-02	**15.6** (12.0-20.2)	**15.2** (11.2-20.5)	**26.8** (20.4-39.5)	**53.5** (35.3-72.1)	**69.5** (53.5-105)	348
	03-04	**9.84** (8.09-12.0)	**10.0** (8.10-13.0)	**20.0** (16.0-23.0)	**33.8** (27.0-40.0)	**47.0** (35.0-67.0)	630
	05-06	**9.87** (8.79-11.1)	**9.70** (8.80-11.0)	**19.0** (16.0-21.0)	**34.0** (29.0-43.0)	**53.0** (45.0-67.0)	1318

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 2.37, 2.11, and 2.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/THM-DBP_BiomonitoringSummary.html

Urinary Benzophenone-3 (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**22.9** (18.1-28.9)	**18.1** (15.5-23.2)	**94.0** (67.5-123)	**370** (225-570)	**1040** (698-1390)	2517
	05-06	**19.4** (16.5-22.8)	**14.1** (12.5-17.5)	**68.8** (54.5-87.2)	**433** (294-597)	**1150** (936-1510)	2548
	07-08	**18.3** (13.7-24.3)	**14.3** (10.7-19.8)	**64.1** (42.8-116)	**365** (223-524)	**801** (471-2080)	2604
	09-10	**22.3** (18.0-27.7)	**16.4** (12.7-20.5)	**81.2** (55.0-126)	**493** (320-742)	**1750** (931-3120)	2749
Age group							
6-11 years	03-04	**21.2** (16.4-27.3)	**17.2** (14.9-25.9)	**66.7** (38.7-102)	**158** (106-246)	**246** (154-618)	314
	05-06	**21.2** (14.3-31.3)	**19.4** (11.7-26.1)	**58.8** (40.5-102)	**259** (115-433)	**852** (355-2200)	356
	07-08	**24.1** (15.0-38.7)	**17.2** (11.8-25.0)	**79.9** (32.9-168)	**392** (129-1610)	**1410** (165-43600)	389
	09-10	**21.7** (15.6-30.2)	**14.6** (12.0-19.7)	**52.7** (27.2-119)	**470** (80.7-1900)	**1570** (153-6440)	415
12-19 years	03-04	**22.9** (18.0-29.3)	**20.1** (16.1-25.1)	**67.1** (45.2-93.8)	**170** (137-240)	**407** (183-717)	715
	05-06	**21.2** (15.8-28.4)	**14.9** (12.1-21.4)	**64.3** (39.7-95.3)	**227** (130-382)	**633** (252-1260)	702
	07-08	**21.5** (16.0-28.8)	**15.0** (11.9-21.3)	**59.3** (36.7-111)	**214** (113-613)	**613** (206-1350)	401
	09-10	**23.3** (16.6-32.5)	**16.6** (13.1-19.7)	**62.3** (35.1-129)	**423** (184-843)	**988** (550-2670)	420
20 years and older	03-04	**23.1** (18.0-29.6)	**18.1** (14.7-23.3)	**109** (72.1-140)	**450** (315-733)	**1220** (769-1750)	1488
	05-06	**19.0** (16.5-21.8)	**13.5** (12.0-16.3)	**70.9** (55.2-87.2)	**543** (390-638)	**1200** (954-1690)	1490
	07-08	**17.3** (13.0-23.0)	**13.7** (10.0-19.5)	**64.1** (41.5-117)	**371** (240-516)	**801** (516-1790)	1814
	09-10	**22.3** (17.9-27.7)	**16.5** (12.3-22.5)	**86.7** (63.1-129)	**505** (339-760)	**1890** (1240-3170)	1914
Gender							
Males	03-04	**16.8** (13.2-21.3)	**13.7** (11.4-16.8)	**55.3** (33.2-86.6)	**178** (134-324)	**567** (238-1350)	1229
	05-06	**14.6** (10.8-19.7)	**11.8** (8.80-15.9)	**43.4** (31.0-68.8)	**227** (103-552)	**909** (479-1190)	1270
	07-08	**11.9** (8.84-16.0)	**9.40** (7.70-12.3)	**37.6** (22.6-54.7)	**172** (79.9-376)	**471** (208-1410)	1294
	09-10	**15.3** (12.7-18.6)	**12.2** (10.0-15.2)	**52.8** (33.9-72.6)	**223** (129-332)	**610** (318-1270)	1399
Females	03-04	**30.7** (23.7-39.8)	**26.0** (20.2-34.1)	**137** (106-172)	**596** (403-769)	**1340** (776-1790)	1288
	05-06	**25.5** (21.7-29.9)	**17.9** (14.3-23.1)	**129** (82.9-166)	**638** (478-900)	**1410** (945-2620)	1278
	07-08	**27.6** (20.4-37.3)	**25.6** (17.5-33.9)	**117** (72.6-211)	**535** (361-757)	**1260** (643-2280)	1310
	09-10	**32.0** (23.7-43.3)	**23.0** (16.4-29.8)	**148** (73.3-260)	**1020** (540-1800)	**3200** (1760-4400)	1350
Race/ethnicity							
Mexican Americans	03-04	**16.5** (10.9-25.1)	**11.9** (8.50-18.3)	**45.5** (25.9-78.2)	**178** (76.4-412)	**412** (178-2180)	613
	05-06	**14.3** (10.7-19.1)	**10.2** (7.40-14.1)	**45.6** (24.1-75.7)	**214** (166-313)	**635** (337-1090)	637
	07-08	**12.1** (9.49-15.3)	**9.90** (7.70-12.4)	**32.6** (25.0-48.3)	**142** (85.0-268)	**409** (214-778)	531
	09-10	**17.2** (13.7-21.6)	**12.5** (10.5-14.5)	**41.9** (30.2-57.4)	**351** (248-546)	**1130** (493-2140)	566
Non-Hispanic blacks	03-04	**12.8** (9.38-17.4)	**10.2** (7.40-14.4)	**34.3** (22.8-50.6)	**127** (90.8-176)	**247** (143-499)	652
	05-06	**12.4** (9.77-15.6)	**9.40** (7.30-11.8)	**33.0** (22.3-46.5)	**208** (115-291)	**556** (269-1060)	678
	07-08	**8.55** (6.75-10.8)	**7.40** (5.00-9.70)	**25.5** (17.5-34.5)	**117** (66.8-217)	**422** (195-786)	597
	09-10	**14.0** (10.9-18.1)	**8.90** (7.30-10.5)	**30.9** (21.9-50.5)	**276** (143-437)	**705** (320-3000)	516
Non-Hispanic whites	03-04	**27.7** (20.3-37.8)	**24.4** (16.8-32.0)	**121** (83.6-162)	**507** (316-769)	**1340** (733-2070)	1092
	05-06	**21.6** (18.5-25.2)	**16.0** (13.5-19.0)	**82.4** (64.2-114)	**552** (392-754)	**1370** (945-2050)	1038
	07-08	**23.1** (15.0-35.5)	**18.7** (11.0-33.7)	**101** (47.4-206)	**459** (241-749)	**1160** (487-2620)	1077
	09-10	**26.1** (19.0-35.9)	**21.1** (14.6-29.7)	**94.9** (59.8-186)	**610** (325-1240)	**2130** (934-3820)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.3, 0.4, 0.4, and 0.4 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzophenone-3_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzophenone-3_FactSheet.html

Urinary Benzophenone-3 (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**23.2** (17.2-31.3)	**18.7** (13.6-27.0)	**83.8** (50.8-142)	**461** (290-861)	**1200** (861-1610)	2489
Age group							
6-11 years	11-12	**18.7** (12.3-28.2)	**13.2** (8.20-20.8)	**55.4** (28.0-108)	**336** (134-653)	**657** (236-1270)	396
12-19 years	11-12	**27.8** (15.4-50.2)	**21.6** (10.8-42.1)	**109** (34.0-255)	**433** (159-1160)	**1120** (261-1990)	388
20 years and older	11-12	**23.1** (17.8-30.0)	**19.2** (14.4-27.0)	**83.8** (52.8-137)	**482** (305-805)	**1250** (975-1640)	1705
Gender							
Males	11-12	**17.2** (12.1-24.5)	**16.0** (9.40-23.6)	**50.2** (40.1-78.7)	**295** (141-448)	**594** (301-1360)	1259
Females	11-12	**31.0** (22.7-42.2)	**22.2** (16.0-34.1)	**137** (79.9-243)	**781** (467-1220)	**1720** (1260-2290)	1230
Race/ethnicity							
Mexican Americans	11-12	**16.8** (10.5-26.8)	**13.4** (7.20-25.2)	**46.1** (25.2-115)	**305** (111-644)	**885** (305-1740)	316
Non-Hispanic blacks	11-12	**14.5** (11.4-18.5)	**10.9** (8.00-14.1)	**41.4** (28.8-59.5)	**316** (192-433)	**895** (475-1270)	665
Non-Hispanic whites	11-12	**26.8** (17.8-40.5)	**22.2** (14.8-36.5)	**101** (52.8-216)	**512** (255-1130)	**1230** (805-1830)	813
All Hispanics	11-12	**21.2** (15.2-29.4)	**16.3** (10.6-22.7)	**57.9** (38.2-126)	**408** (261-684)	**1020** (527-1610)	571
Asians	11-12	**16.7** (10.5-26.5)	**11.9** (7.30-21.1)	**66.4** (37.6-122)	**486** (157-1350)	**1640** (770-2780)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.4.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzophenone-3_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzophenone-3_FactSheet.html

Urinary Benzophenone-3 (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**22.2** (17.6-28.0)	**16.2** (12.7-21.6)	**82.0** (58.7-108)	**415** (283-577)	**1080** (686-1600)	2514
	05-06	**18.9** (15.8-22.6)	**13.5** (11.2-16.8)	**60.4** (47.6-81.4)	**445** (346-553)	**1210** (794-1970)	2548
	07-08	**18.4** (13.9-24.4)	**13.5** (10.2-17.8)	**67.9** (45.2-117)	**338** (215-584)	**935** (525-1800)	2604
	09-10	**23.3** (18.7-29.1)	**16.1** (12.8-19.8)	**79.1** (52.2-124)	**579** (355-1040)	**2340** (1380-3010)	2749
Age group							
6-11 years	03-04	**25.8** (19.5-34.1)	**22.4** (14.4-33.7)	**84.6** (41.0-131)	**171** (132-365)	**427** (171-710)	314
	05-06	**23.3** (15.9-34.1)	**17.5** (11.6-28.3)	**67.7** (39.7-105)	**249** (106-631)	**868** (264-2080)	356
	07-08	**29.7** (19.0-46.6)	**19.3** (12.4-32.3)	**103** (51.1-159)	**442** (133-1550)	**1430** (187-29100)	389
	09-10	**28.3** (20.4-39.4)	**18.8** (14.7-21.1)	**53.9** (33.2-132)	**565** (104-3410)	**1780** (253-8230)	415
12-19 years	03-04	**17.2** (13.7-21.5)	**12.9** (10.4-16.5)	**43.6** (29.5-57.7)	**136** (91.7-239)	**350** (173-646)	713
	05-06	**15.8** (11.6-21.6)	**12.1** (9.16-17.0)	**42.5** (28.6-58.7)	**164** (101-438)	**625** (225-956)	702
	07-08	**16.7** (12.4-22.4)	**12.1** (8.57-17.6)	**55.7** (30.4-74.8)	**211** (88.2-505)	**505** (163-902)	401
	09-10	**18.7** (13.4-26.1)	**13.6** (10.1-19.7)	**39.9** (25.5-91.6)	**412** (89.8-750)	**1240** (629-2540)	420
20 years and older	03-04	**22.8** (17.8-29.1)	**16.2** (12.7-21.9)	**93.2** (66.0-130)	**491** (361-700)	**1330** (880-1880)	1487
	05-06	**19.0** (16.3-22.2)	**13.4** (11.2-16.2)	**64.2** (49.3-87.0)	**509** (406-628)	**1480** (816-2200)	1490
	07-08	**17.7** (13.3-23.6)	**12.6** (9.93-17.5)	**67.7** (44.1-127)	**362** (249-584)	**960** (581-1970)	1814
	09-10	**23.6** (18.8-29.5)	**16.3** (12.7-20.2)	**83.6** (58.3-146)	**602** (364-1230)	**2470** (1350-3080)	1914
Gender							
Males	03-04	**13.6** (10.8-17.1)	**10.3** (8.36-12.9)	**40.0** (24.9-62.5)	**169** (93.3-316)	**381** (229-685)	1228
	05-06	**11.7** (8.74-15.8)	**9.43** (6.72-12.5)	**31.9** (19.7-49.4)	**176** (77.1-406)	**553** (317-948)	1270
	07-08	**10.0** (7.37-13.7)	**7.50** (5.74-10.0)	**28.7** (18.5-47.3)	**142** (65.8-225)	**332** (181-960)	1294
	09-10	**13.7** (11.4-16.6)	**10.7** (8.53-12.7)	**44.6** (29.7-57.4)	**186** (123-287)	**420** (287-1230)	1399
Females	03-04	**35.5** (27.1-46.4)	**28.2** (20.2-37.0)	**144** (101-224)	**686** (491-1130)	**1850** (1220-2580)	1286
	05-06	**30.0** (25.3-35.6)	**20.9** (17.0-29.0)	**129** (88.0-175)	**707** (527-912)	**1880** (1150-2770)	1278
	07-08	**33.0** (25.0-43.7)	**26.2** (19.1-41.1)	**156** (90.2-235)	**617** (385-935)	**1500** (746-2710)	1310
	09-10	**38.6** (28.1-53.0)	**25.7** (17.5-35.2)	**161** (76.3-378)	**1580** (955-2410)	**3250** (2540-4640)	1350
Race/ethnicity							
Mexican Americans	03-04	**15.1** (9.44-24.0)	**11.1** (6.95-16.0)	**40.7** (18.3-85.8)	**158** (87.4-362)	**595** (118-1860)	612
	05-06	**12.9** (10.2-16.2)	**8.63** (6.16-12.5)	**32.1** (23.1-51.8)	**216** (135-408)	**948** (441-1220)	637
	07-08	**11.8** (8.87-15.6)	**8.97** (7.00-12.4)	**33.6** (26.0-43.2)	**154** (93.4-249)	**413** (217-932)	531
	09-10	**17.1** (13.4-21.7)	**12.2** (9.64-14.5)	**40.4** (26.4-60.3)	**288** (155-603)	**1310** (441-2180)	566
Non-Hispanic blacks	03-04	**8.78** (6.49-11.9)	**6.80** (5.27-9.00)	**19.7** (13.5-33.4)	**79.8** (46.8-139)	**185** (79.8-536)	651
	05-06	**8.69** (7.02-10.8)	**6.29** (5.52-7.78)	**21.2** (14.5-34.5)	**118** (74.9-245)	**448** (208-876)	678
	07-08	**6.65** (5.24-8.42)	**5.09** (4.15-6.10)	**17.8** (13.2-24.2)	**86.6** (57.5-122)	**297** (113-903)	597
	09-10	**10.2** (8.12-12.7)	**6.46** (5.40-7.67)	**23.1** (15.5-38.2)	**160** (79.9-396)	**653** (305-1580)	516
Non-Hispanic whites	03-04	**28.3** (20.6-38.8)	**22.0** (14.6-32.7)	**116** (73.5-175)	**510** (380-760)	**1330** (852-2410)	1091
	05-06	**22.7** (19.4-26.7)	**16.2** (13.0-19.7)	**77.3** (56.5-106)	**538** (406-679)	**1500** (828-2430)	1038
	07-08	**24.1** (15.6-37.2)	**18.1** (11.0-30.0)	**103** (53.6-198)	**494** (227-960)	**1170** (522-2710)	1077
	09-10	**29.3** (20.7-41.5)	**22.1** (14.6-33.1)	**99.2** (54.3-241)	**767** (412-1550)	**2590** (1510-3250)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzophenone-3_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzophenone-3_FactSheet.html

Urinary Benzophenone-3 (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**26.4** (19.3-36.2)	**18.8** (13.3-27.3)	**102** (57.8-162)	**613** (330-1020)	**1680** (1010-2500)	2487
Age group							
6-11 years	11-12	**26.9** (17.9-40.2)	**18.8** (13.0-28.6)	**67.8** (37.8-135)	**552** (138-1010)	**1010** (297-1670)	395
12-19 years	11-12	**27.1** (14.2-51.8)	**16.7** (8.69-44.3)	**102** (29.9-331)	**631** (117-3050)	**1720** (331-3900)	388
20 years and older	11-12	**26.3** (19.8-34.8)	**19.8** (13.9-26.6)	**107** (68.1-156)	**640** (371-957)	**1890** (1080-2500)	1704
Gender							
Males	11-12	**16.1** (11.3-22.8)	**11.9** (8.77-18.1)	**48.8** (31.6-84.5)	**237** (120-442)	**716** (267-1030)	1258
Females	11-12	**42.7** (30.6-59.5)	**30.1** (19.7-49.4)	**186** (107-374)	**1150** (771-1910)	**2720** (1660-4230)	1229
Race/ethnicity							
Mexican Americans	11-12	**18.9** (12.4-29.0)	**13.8** (8.75-22.0)	**45.3** (23.5-132)	**369** (132-820)	**1030** (371-2330)	316
Non-Hispanic blacks	11-12	**11.3** (8.82-14.5)	**7.48** (6.04-9.49)	**27.6** (18.0-42.1)	**269** (159-376)	**747** (376-1010)	665
Non-Hispanic whites	11-12	**32.6** (21.1-50.4)	**25.5** (15.3-41.1)	**128** (70.8-248)	**793** (334-1320)	**1970** (1030-3500)	811
All Hispanics	11-12	**23.7** (17.6-32.0)	**15.9** (11.4-21.7)	**65.0** (38.6-132)	**425** (265-916)	**1850** (784-2330)	571
Asians	11-12	**22.3** (14.3-34.9)	**14.2** (8.24-27.8)	**73.1** (41.6-153)	**624** (282-1640)	**1860** (641-4410)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzophenone-3_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzophenone-3_FactSheet.html

Urinary Bisphenol A (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2.64** (2.38-2.94)	**2.80** (2.50-3.10)	**5.50** (5.00-6.20)	**10.6** (9.40-12.0)	**16.0** (14.4-17.2)	2517
	05-06	**1.90** (1.79-2.02)	**2.00** (1.90-2.00)	**3.70** (3.50-3.90)	**7.00** (6.40-7.60)	**11.5** (10.0-13.6)	2548
	07-08	**2.08** (1.92-2.26)	**2.10** (1.90-2.30)	**4.10** (3.60-4.60)	**7.70** (6.80-8.70)	**13.0** (10.0-15.6)	2604
	09-10	**1.83** (1.72-1.94)	**1.90** (1.70-2.00)	**3.50** (3.30-3.80)	**6.60** (6.00-7.20)	**9.60** (8.50-11.3)	2749
Age group							
6-11 years	03-04	**3.55** (2.95-4.29)	**3.80** (2.70-5.00)	**6.90** (6.00-8.30)	**12.6** (9.50-15.1)	**16.0** (11.5-23.3)	314
	05-06	**2.86** (2.52-3.24)	**2.70** (2.30-2.90)	**5.00** (4.40-5.80)	**13.5** (9.30-16.8)	**22.8** (13.6-34.6)	356
	07-08	**2.48** (2.21-2.77)	**2.40** (1.90-3.00)	**4.50** (3.70-5.50)	**7.60** (6.30-9.50)	**13.4** (8.80-17.8)	389
	09-10	**1.81** (1.55-2.10)	**1.70** (1.50-2.00)	**3.40** (3.00-4.00)	**6.50** (4.30-9.70)	**9.20** (6.50-15.1)	415
12-19 years	03-04	**3.74** (3.31-4.22)	**4.30** (3.60-4.60)	**7.80** (6.50-9.00)	**13.5** (11.8-15.2)	**16.5** (15.2-20.9)	715
	05-06	**2.42** (2.18-2.68)	**2.40** (2.10-2.70)	**4.30** (3.90-5.20)	**8.40** (6.50-10.8)	**11.9** (10.7-14.8)	702
	07-08	**2.45** (2.14-2.80)	**2.40** (2.10-2.60)	**4.40** (3.60-5.50)	**9.70** (7.30-11.9)	**12.2** (9.70-19.0)	401
	09-10	**2.11** (1.86-2.40)	**2.20** (1.90-2.40)	**3.80** (3.20-4.50)	**6.90** (4.70-10.8)	**11.1** (6.90-21.0)	420
20 years and older	03-04	**2.41** (2.15-2.72)	**2.60** (2.30-2.80)	**5.10** (4.50-5.70)	**9.50** (8.10-11.3)	**15.2** (12.4-18.1)	1488
	05-06	**1.75** (1.62-1.89)	**1.80** (1.70-2.00)	**3.40** (3.10-3.70)	**6.40** (5.80-7.50)	**10.7** (8.80-12.1)	1490
	07-08	**1.99** (1.82-2.18)	**2.00** (1.80-2.30)	**3.90** (3.40-4.60)	**7.40** (6.60-8.50)	**13.2** (9.10-15.7)	1814
	09-10	**1.79** (1.67-1.93)	**1.80** (1.60-2.00)	**3.50** (3.30-3.70)	**6.50** (6.00-7.20)	**9.60** (8.30-11.3)	1914
Gender							
Males	03-04	**2.92** (2.63-3.24)	**3.20** (2.70-3.60)	**6.10** (5.40-6.60)	**10.4** (9.50-11.6)	**16.0** (12.7-17.6)	1229
	05-06	**2.09** (1.92-2.28)	**2.10** (2.00-2.30)	**3.70** (3.40-4.20)	**7.70** (6.80-9.30)	**12.8** (10.1-15.8)	1270
	07-08	**2.20** (2.01-2.41)	**2.10** (1.90-2.40)	**4.00** (3.60-4.70)	**8.10** (6.70-9.70)	**14.0** (8.70-20.8)	1294
	09-10	**1.94** (1.82-2.07)	**1.90** (1.70-2.00)	**3.70** (3.40-4.10)	**6.90** (5.90-7.90)	**10.9** (8.40-13.5)	1399
Females	03-04	**2.41** (2.11-2.75)	**2.50** (2.20-2.80)	**5.00** (4.20-6.20)	**10.6** (8.70-12.5)	**15.9** (13.5-20.1)	1288
	05-06	**1.74** (1.55-1.95)	**1.80** (1.60-2.00)	**3.70** (3.10-4.00)	**6.20** (5.80-7.60)	**10.4** (7.70-14.7)	1278
	07-08	**1.97** (1.80-2.16)	**2.00** (1.80-2.20)	**4.10** (3.60-4.60)	**7.40** (6.80-8.20)	**12.0** (9.60-14.1)	1310
	09-10	**1.73** (1.60-1.87)	**1.80** (1.60-2.00)	**3.40** (3.20-3.70)	**6.50** (5.60-7.10)	**9.20** (8.00-11.2)	1350
Race/ethnicity							
Mexican Americans	03-04	**2.58** (2.15-3.08)	**2.60** (2.10-3.20)	**5.20** (4.40-6.50)	**9.90** (7.30-13.9)	**15.4** (10.2-19.7)	613
	05-06	**2.05** (1.75-2.40)	**2.00** (1.70-2.40)	**3.60** (3.00-4.20)	**6.90** (5.40-10.1)	**12.2** (8.00-15.6)	637
	07-08	**2.09** (1.94-2.26)	**2.00** (1.80-2.30)	**3.80** (3.30-4.30)	**7.10** (6.10-8.60)	**11.7** (7.70-14.6)	531
	09-10	**1.92** (1.69-2.19)	**2.10** (1.80-2.30)	**3.50** (3.10-4.10)	**6.50** (5.20-7.50)	**9.00** (6.90-16.2)	566
Non-Hispanic blacks	03-04	**4.24** (3.73-4.82)	**4.30** (3.80-5.10)	**8.20** (7.10-9.80)	**14.2** (11.7-16.9)	**20.6** (14.9-25.2)	652
	05-06	**2.50** (2.25-2.77)	**2.70** (2.30-3.00)	**4.60** (4.00-5.00)	**8.00** (6.80-9.30)	**11.3** (8.90-14.2)	678
	07-08	**2.66** (2.38-2.97)	**2.80** (2.60-3.10)	**5.40** (4.40-6.40)	**9.10** (7.50-10.4)	**13.3** (10.0-15.1)	597
	09-10	**2.51** (2.22-2.83)	**2.60** (2.30-3.00)	**4.40** (3.80-5.00)	**7.30** (6.10-8.80)	**10.3** (7.90-13.6)	516
Non-Hispanic whites	03-04	**2.51** (2.26-2.79)	**2.70** (2.50-3.00)	**5.20** (4.70-5.80)	**9.60** (8.30-10.9)	**15.1** (12.6-16.7)	1092
	05-06	**1.76** (1.62-1.91)	**1.80** (1.60-2.00)	**3.50** (3.20-3.80)	**6.80** (5.90-7.60)	**11.0** (8.80-13.7)	1038
	07-08	**2.06** (1.87-2.27)	**2.00** (1.80-2.30)	**4.00** (3.40-4.70)	**7.80** (6.70-8.90)	**13.7** (9.80-16.1)	1077
	09-10	**1.73** (1.60-1.87)	**1.70** (1.60-1.90)	**3.40** (3.10-3.70)	**6.40** (5.40-7.60)	**9.20** (8.20-11.2)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.4, 0.4, 0.4, and 0.4 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BisphenolA_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/BisphenolA_FactSheet.html

Urinary Bisphenol A (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.51** (1.41-1.62)	**1.40** (1.30-1.60)	**3.00** (2.70-3.30)	**5.60** (4.90-6.50)	**9.40** (7.70-11.2)	2489
Age group							
6-11 years	11-12	**1.58** (1.41-1.78)	**1.50** (1.30-1.70)	**3.10** (2.60-3.50)	**6.70** (5.10-8.00)	**8.70** (6.20-21.4)	396
12-19 years	11-12	**1.69** (1.42-2.00)	**1.70** (1.30-2.10)	**3.30** (2.80-4.00)	**6.90** (4.80-7.90)	**10.0** (7.10-13.0)	388
20 years and older	11-12	**1.48** (1.35-1.61)	**1.40** (1.20-1.60)	**2.90** (2.50-3.30)	**5.40** (4.70-6.30)	**9.30** (7.30-12.2)	1705
Gender							
Males	11-12	**1.64** (1.49-1.81)	**1.50** (1.40-1.70)	**3.20** (2.70-3.70)	**6.00** (5.00-7.70)	**9.50** (7.80-11.2)	1259
Females	11-12	**1.39** (1.25-1.55)	**1.30** (1.20-1.50)	**2.80** (2.40-3.20)	**5.20** (4.30-6.30)	**8.50** (6.50-13.4)	1230
Race/ethnicity							
Mexican Americans	11-12	**1.45** (1.30-1.63)	**1.40** (1.20-1.60)	**2.80** (2.30-3.10)	**5.00** (4.20-6.50)	**7.70** (5.90-9.70)	316
Non-Hispanic blacks	11-12	**2.12** (1.88-2.38)	**2.00** (1.80-2.40)	**4.10** (3.40-4.60)	**7.10** (5.70-8.10)	**11.4** (8.10-14.3)	665
Non-Hispanic whites	11-12	**1.46** (1.34-1.58)	**1.30** (1.20-1.50)	**2.90** (2.50-3.20)	**5.40** (4.60-6.60)	**8.90** (6.90-13.4)	813
All Hispanics	11-12	**1.48** (1.25-1.74)	**1.40** (1.20-1.70)	**2.80** (2.20-3.40)	**5.70** (4.20-7.30)	**9.10** (6.50-14.1)	571
Asians	11-12	**1.03** (.863-1.23)	**.900** (.800-1.10)	**1.80** (1.50-2.20)	**4.00** (2.40-6.40)	**7.30** (3.90-11.9)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.4.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BisphenolA_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/BisphenolA_FactSheet.html

Urinary Bisphenol A (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2.58** (2.36-2.82)	**2.50** (2.31-2.80)	**4.29** (3.88-4.75)	**7.67** (6.62-8.66)	**11.2** (9.78-12.4)	2514
	05-06	**1.86** (1.79-1.92)	**1.71** (1.64-1.79)	**3.01** (2.86-3.20)	**5.73** (5.29-6.36)	**9.70** (8.31-10.9)	2548
	07-08	**2.10** (1.95-2.25)	**1.95** (1.84-2.03)	**3.45** (3.02-3.83)	**6.09** (5.10-7.45)	**10.0** (7.48-13.2)	2604
	09-10	**1.91** (1.79-2.04)	**1.76** (1.67-1.84)	**3.06** (2.80-3.33)	**5.33** (4.68-6.06)	**8.03** (6.94-10.0)	2749
Age group							
6-11 years	03-04	**4.32** (3.63-5.14)	**4.29** (3.63-5.23)	**7.14** (5.83-9.56)	**12.2** (9.84-14.8)	**15.7** (12.2-23.2)	314
	05-06	**3.14** (2.79-3.54)	**2.80** (2.55-3.06)	**5.04** (4.46-5.71)	**15.6** (8.15-22.4)	**24.6** (19.9-48.5)	356
	07-08	**3.05** (2.73-3.41)	**2.69** (2.38-3.12)	**5.06** (4.33-5.60)	**11.9** (6.30-17.4)	**20.8** (12.7-26.3)	389
	09-10	**2.36** (2.09-2.65)	**2.18** (2.00-2.53)	**3.70** (3.14-4.29)	**5.97** (4.57-9.15)	**9.57** (6.52-13.7)	415
12-19 years	03-04	**2.80** (2.52-3.11)	**2.74** (2.35-3.22)	**4.74** (4.21-5.09)	**7.79** (6.41-8.87)	**11.8** (8.05-14.2)	713
	05-06	**1.80** (1.67-1.95)	**1.65** (1.50-1.76)	**2.73** (2.41-2.98)	**5.71** (4.07-7.50)	**8.52** (6.94-12.2)	702
	07-08	**1.90** (1.72-2.10)	**1.69** (1.50-2.00)	**2.94** (2.38-3.60)	**5.10** (4.17-6.82)	**7.72** (5.32-13.9)	401
	09-10	**1.70** (1.47-1.95)	**1.60** (1.34-1.88)	**2.63** (2.11-3.58)	**4.47** (3.76-6.19)	**6.71** (4.40-17.8)	420
20 years and older	03-04	**2.39** (2.17-2.64)	**2.36** (2.15-2.59)	**3.93** (3.44-4.33)	**6.64** (5.97-7.74)	**10.0** (9.01-11.4)	1487
	05-06	**1.75** (1.67-1.84)	**1.64** (1.56-1.75)	**2.84** (2.67-3.08)	**5.38** (4.89-5.87)	**8.54** (7.58-9.77)	1490
	07-08	**2.04** (1.90-2.20)	**1.92** (1.79-2.03)	**3.36** (2.91-3.78)	**6.02** (4.88-7.48)	**9.32** (7.48-12.1)	1814
	09-10	**1.90** (1.76-2.05)	**1.76** (1.66-1.84)	**3.04** (2.76-3.24)	**5.33** (4.67-6.11)	**8.00** (6.97-10.0)	1914
Gender							
Males	03-04	**2.38** (2.15-2.63)	**2.31** (2.08-2.70)	**4.19** (3.81-4.64)	**7.10** (6.41-8.28)	**9.94** (9.06-11.7)	1228
	05-06	**1.68** (1.57-1.80)	**1.56** (1.45-1.64)	**2.73** (2.43-3.14)	**5.27** (4.64-6.04)	**8.40** (6.81-11.4)	1270
	07-08	**1.85** (1.71-2.01)	**1.77** (1.57-1.91)	**2.97** (2.59-3.33)	**5.41** (4.47-7.51)	**9.52** (6.29-13.4)	1294
	09-10	**1.74** (1.62-1.87)	**1.60** (1.48-1.72)	**2.76** (2.53-2.96)	**5.00** (4.16-5.86)	**7.50** (6.22-9.00)	1399
Females	03-04	**2.78** (2.50-3.08)	**2.68** (2.40-2.94)	**4.41** (3.81-5.15)	**7.93** (6.48-10.2)	**12.4** (9.29-18.2)	1286
	05-06	**2.04** (1.95-2.14)	**1.85** (1.76-2.02)	**3.21** (2.98-3.39)	**6.47** (5.51-7.50)	**9.86** (8.62-11.8)	1278
	07-08	**2.36** (2.17-2.57)	**2.14** (1.98-2.33)	**3.77** (3.43-4.31)	**6.67** (5.41-7.83)	**10.5** (7.45-15.2)	1310
	09-10	**2.09** (1.92-2.27)	**1.93** (1.80-2.15)	**3.33** (2.94-3.84)	**5.49** (4.87-6.74)	**8.80** (6.47-12.5)	1350
Race/ethnicity							
Mexican Americans	03-04	**2.34** (2.02-2.71)	**2.38** (2.00-2.65)	**3.85** (3.24-4.55)	**7.09** (5.00-9.04)	**10.9** (8.50-14.3)	612
	05-06	**1.84** (1.66-2.04)	**1.62** (1.45-1.84)	**2.99** (2.56-3.60)	**6.00** (4.51-8.00)	**10.3** (6.84-14.9)	637
	07-08	**2.04** (1.86-2.24)	**1.88** (1.72-2.11)	**3.33** (2.96-3.95)	**5.68** (5.05-6.59)	**8.90** (6.30-11.8)	531
	09-10	**1.91** (1.71-2.13)	**1.76** (1.67-1.87)	**3.13** (2.63-3.57)	**5.51** (4.72-6.97)	**8.71** (5.86-14.4)	566
Non-Hispanic blacks	03-04	**2.92** (2.58-3.32)	**2.95** (2.51-3.27)	**4.90** (4.07-6.13)	**8.64** (7.53-9.63)	**11.9** (10.2-13.3)	651
	05-06	**1.76** (1.62-1.90)	**1.68** (1.53-1.92)	**2.82** (2.67-3.04)	**4.56** (3.85-5.43)	**6.81** (5.00-9.27)	678
	07-08	**2.06** (1.91-2.23)	**2.03** (1.83-2.25)	**3.24** (2.86-3.78)	**5.71** (5.15-6.54)	**8.59** (6.54-10.9)	597
	09-10	**1.82** (1.65-2.01)	**1.70** (1.56-1.89)	**2.90** (2.39-3.17)	**4.94** (4.02-6.03)	**6.74** (5.95-8.09)	516
Non-Hispanic whites	03-04	**2.58** (2.37-2.81)	**2.55** (2.32-2.80)	**4.30** (3.93-4.67)	**7.58** (6.32-8.87)	**11.0** (9.34-12.4)	1091
	05-06	**1.85** (1.75-1.96)	**1.70** (1.60-1.82)	**3.08** (2.78-3.31)	**5.80** (5.13-6.72)	**9.77** (7.87-11.5)	1038
	07-08	**2.15** (1.97-2.35)	**1.97** (1.84-2.11)	**3.50** (3.04-3.95)	**6.44** (5.04-8.00)	**10.9** (7.47-14.5)	1077
	09-10	**1.94** (1.79-2.10)	**1.78** (1.67-1.92)	**3.16** (2.80-3.59)	**5.45** (4.67-6.94)	**8.55** (6.73-10.0)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BisphenolA_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/BisphenolA_FactSheet.html

Urinary Bisphenol A (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.72** (1.61-1.84)	**1.58** (1.46-1.71)	**2.86** (2.62-3.01)	**4.62** (4.12-5.65)	**8.24** (6.47-11.0)	2487
Age group							
6-11 years	11-12	**2.27** (1.97-2.62)	**2.00** (1.78-2.16)	**3.33** (2.93-3.75)	**7.94** (4.71-12.4)	**14.0** (6.45-47.5)	395
12-19 years	11-12	**1.64** (1.44-1.87)	**1.48** (1.13-1.98)	**2.88** (2.21-3.23)	**4.50** (3.37-8.16)	**8.74** (3.57-18.4)	388
20 years and older	11-12	**1.68** (1.57-1.80)	**1.55** (1.43-1.68)	**2.75** (2.54-3.00)	**4.55** (4.00-5.39)	**7.73** (5.73-10.0)	1704
Gender							
Males	11-12	**1.54** (1.40-1.69)	**1.37** (1.20-1.59)	**2.55** (2.21-2.94)	**4.38** (3.75-6.00)	**8.24** (6.01-11.0)	1258
Females	11-12	**1.91** (1.76-2.08)	**1.75** (1.57-1.97)	**2.93** (2.73-3.24)	**4.94** (4.27-6.24)	**8.13** (6.00-11.1)	1229
Race/ethnicity							
Mexican Americans	11-12	**1.64** (1.49-1.80)	**1.46** (1.32-1.64)	**2.70** (2.34-3.01)	**4.50** (3.45-7.00)	**7.37** (4.76-11.4)	316
Non-Hispanic blacks	11-12	**1.65** (1.48-1.84)	**1.50** (1.30-1.71)	**2.63** (2.11-3.17)	**4.82** (3.82-6.24)	**7.23** (5.98-10.7)	665
Non-Hispanic whites	11-12	**1.77** (1.64-1.92)	**1.64** (1.49-1.78)	**2.90** (2.65-3.08)	**4.60** (4.05-6.00)	**9.00** (6.11-12.3)	811
All Hispanics	11-12	**1.66** (1.44-1.90)	**1.47** (1.28-1.70)	**2.80** (2.39-3.14)	**4.82** (3.67-7.00)	**7.69** (5.76-9.62)	571
Asians	11-12	**1.38** (1.25-1.52)	**1.32** (1.16-1.40)	**2.11** (1.84-2.50)	**4.04** (2.80-6.25)	**7.42** (4.38-12.1)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BisphenolA_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/BisphenolA_FactSheet.html

Urinary 4-*tert*-Octylphenol (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	2548
	07-08	*	< LOD	< LOD	< LOD	.300 (.200-.300)	2604
	09-10	*	< LOD	< LOD	.200 (<LOD-.300)	.300 (.300-.400)	2749
Age group							
6-11 years	05-06	*	< LOD	< LOD	< LOD	.300 (.200-.300)	356
	07-08	*	< LOD	< LOD	.200 (<LOD-.300)	.300 (.200-.400)	389
	09-10	*	< LOD	< LOD	.300 (<LOD-.400)	.400 (.300-.600)	415
12-19 years	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.400)	702
	07-08	*	< LOD	< LOD	< LOD	.300 (<LOD-.400)	401
	09-10	*	< LOD	< LOD	.300 (.200-.300)	.300 (.300-.400)	420
20 years and older	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	1490
	07-08	*	< LOD	< LOD	< LOD	.300 (.200-.400)	1814
	09-10	*	< LOD	< LOD	< LOD	.300 (.200-.400)	1914
Gender							
Males	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	1270
	07-08	*	< LOD	< LOD	< LOD	.300 (.200-.400)	1294
	09-10	*	< LOD	< LOD	.200 (<LOD-.300)	.300 (.300-.400)	1399
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	.300 (.200-.300)	1310
	09-10	*	< LOD	< LOD	.200 (<LOD-.300)	.300 (.200-.400)	1350
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	.300 (<LOD-.800)	637
	07-08	*	< LOD	< LOD	< LOD	.300 (.200-.300)	531
	09-10	*	< LOD	< LOD	< LOD	.300 (<LOD-.500)	566
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.400)	678
	07-08	*	< LOD	< LOD	.200 (<LOD-.300)	.300 (.200-.500)	597
	09-10	*	< LOD	< LOD	.300 (.200-.400)	.500 (.400-.600)	516
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	1038
	07-08	*	< LOD	< LOD	< LOD	.200 (.200-.300)	1077
	09-10	*	< LOD	< LOD	.200 (<LOD-.300)	.300 (.300-.400)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.2, 0.2, and 0.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+The 2003-2004 data were removed due to potential for contamination that may have occurred during sampling. Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Octylphenol_BiomonitoringSummary.html

Urinary 4-*tert*-Octylphenol (creatinine corrected) (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	.560 (<LOD-.620)	2548
	07-08	*	< LOD	< LOD	< LOD	.670 (.560-.880)	2604
	09-10	*	< LOD	< LOD	.470 (<LOD-.500)	.640 (.580-.680)	2749
Age group							
6-11 years	05-06	*	< LOD	< LOD	< LOD	.410 (.350-.610)	356
	07-08	*	< LOD	< LOD	.440 (<LOD-.540)	.600 (.420-.930)	389
	09-10	*	< LOD	< LOD	.560 (<LOD-.670)	.740 (.640-.830)	415
12-19 years	05-06	*	< LOD	< LOD	< LOD	.450 (<LOD-.560)	702
	07-08	*	< LOD	< LOD	< LOD	.420 (<LOD-.540)	401
	09-10	*	< LOD	< LOD	.360 (.270-.440)	.450 (.340-.560)	420
20 years and older	05-06	*	< LOD	< LOD	< LOD	.580 (<LOD-.670)	1490
	07-08	*	< LOD	< LOD	< LOD	.700 (.580-.930)	1814
	09-10	*	< LOD	< LOD	< LOD	.640 (.580-.700)	1914
Gender							
Males	05-06	*	< LOD	< LOD	< LOD	.390 (<LOD-.440)	1270
	07-08	*	< LOD	< LOD	< LOD	.510 (.390-.600)	1294
	09-10	*	< LOD	< LOD	.380 (<LOD-.420)	.480 (.450-.610)	1399
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	.880 (.670-1.08)	1310
	09-10	*	< LOD	< LOD	.540 (<LOD-.580)	.700 (.640-.880)	1350
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	.480 (<LOD-.740)	637
	07-08	*	< LOD	< LOD	< LOD	.520 (.440-.610)	531
	09-10	*	< LOD	< LOD	< LOD	.560 (<LOD-.750)	566
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	.320 (<LOD-.400)	678
	07-08	*	< LOD	< LOD	.320 (<LOD-.410)	.460 (.340-.610)	597
	09-10	*	< LOD	< LOD	.300 (.250-.330)	.440 (.320-.560)	516
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	.610 (<LOD-.670)	1038
	07-08	*	< LOD	< LOD	< LOD	.700 (.560-.930)	1077
	09-10	*	< LOD	< LOD	.500 (<LOD-.560)	.670 (.580-.740)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+The 2003-2004 data were removed due to potential for contamination that may have occurred during sampling. Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Octylphenol_BiomonitoringSummary.html

Urinary Triclosan (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**13.0** (11.6-14.6)	**9.20** (7.90-10.9)	**47.4** (38.2-58.4)	**249** (188-304)	**461** (383-522)	2517
	05-06	**18.5** (16.1-21.3)	**15.1** (11.8-18.5)	**76.2** (57.9-97.6)	**334** (279-402)	**655** (573-739)	2548
	07-08	**15.3** (13.5-17.4)	**12.1** (10.2-13.8)	**57.2** (46.1-65.9)	**225** (176-288)	**494** (371-615)	2604
	09-10	**14.5** (12.6-16.6)	**10.7** (8.80-12.6)	**51.2** (39.4-67.7)	**238** (200-284)	**483** (398-569)	2749
Age group							
6-11 years	03-04	**8.16** (6.20-10.8)	**6.00** (4.00-8.50)	**20.7** (14.3-31.6)	**123** (36.4-163)	**157** (113-380)	314
	05-06	**12.8** (9.89-16.7)	**10.3** (8.30-17.2)	**35.4** (23.9-65.8)	**97.6** (67.4-181)	**246** (99.5-462)	356
	07-08	**11.8** (7.57-18.2)	**9.80** (6.70-13.9)	**27.7** (14.8-52.2)	**98.5** (40.5-364)	**296** (67.4-826)	389
	09-10	**10.9** (9.35-12.8)	**9.90** (7.10-11.9)	**28.3** (22.1-35.5)	**95.5** (71.5-117)	**200** (114-474)	415
12-19 years	03-04	**14.5** (11.0-19.1)	**10.3** (8.20-13.1)	**39.0** (26.5-86.4)	**304** (134-566)	**655** (310-890)	715
	05-06	**18.8** (14.9-23.8)	**15.4** (11.0-21.0)	**67.5** (45.3-100)	**330** (174-461)	**566** (389-707)	702
	07-08	**18.2** (13.8-23.8)	**13.8** (9.40-20.1)	**63.2** (38.7-110)	**296** (144-395)	**401** (308-853)	401
	09-10	**11.7** (9.89-13.8)	**8.80** (7.30-10.9)	**30.2** (24.3-40.6)	**165** (56.7-289)	**301** (220-431)	420
20 years and older	03-04	**13.6** (12.0-15.3)	**9.60** (8.20-11.5)	**51.7** (39.6-65.7)	**261** (198-317)	**472** (406-522)	1488
	05-06	**19.3** (16.4-22.6)	**15.5** (11.8-19.4)	**84.3** (61.0-114)	**366** (289-462)	**738** (583-864)	1490
	07-08	**15.4** (13.7-17.3)	**12.3** (10.1-14.4)	**60.1** (48.5-69.0)	**225** (185-286)	**504** (378-573)	1814
	09-10	**15.5** (12.9-18.5)	**11.1** (8.60-14.2)	**61.8** (41.8-86.0)	**262** (214-327)	**544** (415-621)	1914
Gender							
Males	03-04	**16.2** (13.4-19.6)	**11.7** (9.30-14.8)	**84.9** (50.6-111)	**317** (231-433)	**574** (461-716)	1229
	05-06	**21.3** (17.6-25.7)	**17.6** (11.9-23.2)	**103** (69.9-143)	**446** (366-488)	**738** (601-873)	1270
	07-08	**15.2** (12.9-17.9)	**12.3** (9.50-15.3)	**60.6** (45.8-72.8)	**236** (159-338)	**467** (367-636)	1294
	09-10	**14.8** (12.7-17.4)	**10.9** (8.60-13.3)	**55.1** (40.4-77.5)	**243** (214-295)	**455** (327-600)	1399
Females	03-04	**10.6** (9.29-12.1)	**7.60** (6.10-9.10)	**33.2** (27.1-39.4)	**144** (96.5-250)	**380** (258-430)	1288
	05-06	**16.2** (13.9-18.8)	**12.6** (10.1-15.6)	**58.7** (41.5-81.9)	**226** (169-304)	**513** (310-773)	1278
	07-08	**15.5** (12.6-18.9)	**12.0** (9.90-14.1)	**52.1** (37.1-74.4)	**210** (133-367)	**504** (285-648)	1310
	09-10	**14.2** (12.0-16.8)	**10.5** (8.70-12.6)	**50.0** (34.4-63.8)	**235** (149-302)	**488** (332-661)	1350
Race/ethnicity							
Mexican Americans	03-04	**14.6** (10.6-20.1)	**8.80** (5.40-17.5)	**65.4** (32.8-127)	**357** (225-456)	**597** (372-992)	613
	05-06	**26.7** (21.2-33.7)	**18.7** (13.5-25.5)	**196** (99.4-269)	**668** (475-759)	**866** (750-1180)	637
	07-08	**17.1** (12.9-22.6)	**11.8** (8.40-17.8)	**67.4** (42.5-106)	**358** (208-474)	**556** (363-856)	531
	09-10	**14.9** (12.2-18.3)	**10.2** (8.20-12.8)	**54.7** (33.3-86.5)	**345** (260-494)	**691** (443-1180)	566
Non-Hispanic blacks	03-04	**14.4** (11.4-18.2)	**11.1** (8.70-16.1)	**37.6** (30.2-58.0)	**203** (87.5-341)	**450** (254-750)	652
	05-06	**17.3** (13.3-22.4)	**14.0** (10.4-19.0)	**59.2** (37.7-98.3)	**258** (138-460)	**541** (273-1190)	678
	07-08	**13.7** (11.7-16.1)	**11.3** (8.80-13.9)	**41.4** (28.9-49.6)	**150** (93.5-265)	**480** (190-757)	597
	09-10	**12.8** (10.8-15.0)	**9.30** (7.70-11.7)	**34.3** (24.0-44.6)	**168** (88.4-263)	**451** (202-959)	516
Non-Hispanic whites	03-04	**12.9** (11.2-14.9)	**9.20** (7.40-11.0)	**49.2** (37.8-63.4)	**245** (163-334)	**461** (383-527)	1092
	05-06	**17.5** (14.9-20.6)	**15.1** (10.9-19.0)	**74.3** (54.1-90.3)	**288** (231-366)	**569** (462-693)	1038
	07-08	**15.0** (12.6-17.7)	**12.3** (9.80-14.5)	**59.6** (41.9-73.4)	**197** (147-266)	**408** (296-537)	1077
	09-10	**14.0** (11.8-16.7)	**10.5** (8.30-12.9)	**51.7** (33.1-79.2)	**216** (174-266)	**431** (301-565)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 2.3, 2.3, 2.3, and 2.3 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Triclosan_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Triclosan_FactSheet.html

Urinary Triclosan (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**11.8** (10.6-13.1)	**7.10** (6.10-7.90)	**41.6** (30.2-59.5)	**267** (207-332)	**553** (429-722)	2489
Age group							
6-11 years	11-12	**7.18** (5.73-9.01)	**5.00** (3.40-7.30)	**17.2** (10.4-21.8)	**77.6** (28.9-184)	**184** (78.7-393)	396
12-19 years	11-12	**10.1** (7.70-13.3)	**5.80** (4.70-7.50)	**25.5** (15.1-38.9)	**156** (73.5-286)	**489** (171-1550)	388
20 years and older	11-12	**12.7** (11.2-14.4)	**7.60** (6.40-8.50)	**57.4** (37.0-75.8)	**298** (243-388)	**594** (437-845)	1705
Gender							
Males	11-12	**11.6** (10.1-13.1)	**6.40** (5.30-7.50)	**41.6** (28.1-58.7)	**320** (211-388)	**566** (392-722)	1259
Females	11-12	**12.0** (10.2-14.0)	**7.60** (6.20-8.60)	**42.2** (25.7-75.8)	**242** (188-286)	**545** (380-855)	1230
Race/ethnicity							
Mexican Americans	11-12	**12.6** (8.98-17.8)	**7.20** (4.70-11.7)	**47.6** (21.9-82.7)	**411** (151-628)	**628** (393-1250)	316
Non-Hispanic blacks	11-12	**10.5** (9.08-12.2)	**6.70** (5.70-8.40)	**29.9** (22.4-40.0)	**169** (106-278)	**475** (278-718)	665
Non-Hispanic whites	11-12	**11.7** (10.0-13.7)	**7.00** (5.60-8.00)	**44.6** (24.4-75.8)	**248** (184-392)	**552** (365-759)	813
All Hispanics	11-12	**13.4** (11.6-15.5)	**7.50** (6.40-9.30)	**48.3** (33.2-75.5)	**411** (264-518)	**861** (536-1040)	571
Asians	11-12	**11.7** (7.75-17.8)	**7.30** (3.80-15.1)	**42.9** (18.6-125)	**274** (117-433)	**453** (235-636)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.3.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Triclosan_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Triclosan_FactSheet.html

Urinary Triclosan (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**12.7** (11.5-14.1)	**9.48** (8.22-10.4)	**43.9** (33.8-60.6)	**212** (172-241)	**368** (294-463)	2514
	05-06	**18.0** (16.0-20.3)	**13.0** (11.5-16.1)	**73.2** (57.3-91.6)	**304** (240-364)	**532** (434-674)	2548
	07-08	**15.5** (13.7-17.5)	**12.4** (10.6-14.2)	**50.4** (40.2-59.8)	**233** (171-300)	**443** (330-559)	2604
	09-10	**15.1** (13.2-17.4)	**10.9** (9.41-12.4)	**49.4** (37.0-67.3)	**256** (191-322)	**454** (352-557)	2749
Age group							
6-11 years	03-04	**9.93** (7.43-13.3)	**7.55** (4.72-13.4)	**25.1** (15.3-35.6)	**116** (39.9-236)	**236** (115-336)	314
	05-06	**14.1** (10.8-18.5)	**13.5** (7.97-18.5)	**38.6** (26.0-54.1)	**108** (62.4-169)	**241** (108-598)	356
	07-08	**14.5** (9.47-22.1)	**13.0** (8.00-17.5)	**33.1** (17.5-72.4)	**132** (52.7-331)	**331** (131-599)	389
	09-10	**14.2** (12.4-16.4)	**12.0** (8.84-15.0)	**37.1** (27.0-47.3)	**129** (89.1-155)	**300** (148-469)	415
12-19 years	03-04	**10.9** (8.32-14.2)	**7.45** (5.48-10.7)	**31.8** (21.9-61.1)	**193** (90.7-318)	**356** (169-580)	713
	05-06	**14.0** (11.0-17.8)	**11.1** (8.68-13.6)	**51.0** (33.0-73.4)	**193** (125-306)	**385** (203-739)	702
	07-08	**14.1** (11.0-18.1)	**11.0** (7.87-14.4)	**50.2** (27.1-78.8)	**206** (95.3-293)	**378** (238-571)	401
	09-10	**9.38** (7.86-11.2)	**7.71** (5.71-9.21)	**23.2** (17.3-29.3)	**153** (63.0-201)	**247** (166-379)	420
20 years and older	03-04	**13.4** (12.0-15.1)	**10.0** (8.89-11.4)	**50.0** (36.0-73.8)	**224** (186-272)	**385** (308-506)	1487
	05-06	**19.3** (16.9-22.0)	**13.7** (11.6-17.0)	**86.1** (64.0-109)	**343** (262-411)	**581** (440-718)	1490
	07-08	**15.8** (14.0-17.8)	**12.6** (10.7-14.5)	**52.3** (43.8-64.6)	**244** (186-309)	**484** (336-568)	1814
	09-10	**16.4** (13.7-19.6)	**11.5** (9.63-14.8)	**57.1** (38.4-80.2)	**279** (202-364)	**504** (372-601)	1914
Gender							
Males	03-04	**13.2** (11.3-15.6)	**9.21** (6.86-12.1)	**73.1** (45.8-85.9)	**237** (175-294)	**384** (294-506)	1228
	05-06	**17.1** (14.1-20.7)	**12.4** (10.0-18.5)	**82.6** (58.2-109)	**308** (232-368)	**472** (355-721)	1270
	07-08	**12.8** (10.9-15.0)	**10.0** (8.12-13.0)	**45.7** (32.1-57.3)	**191** (132-241)	**330** (253-456)	1294
	09-10	**13.3** (11.3-15.7)	**9.21** (7.40-11.7)	**43.9** (33.5-67.4)	**230** (178-276)	**345** (276-429)	1399
Females	03-04	**12.2** (10.6-14.2)	**9.54** (8.45-10.4)	**32.3** (26.2-46.6)	**182** (138-217)	**336** (225-480)	1286
	05-06	**19.0** (16.1-22.6)	**13.8** (11.7-16.7)	**64.0** (47.6-89.8)	**301** (209-434)	**619** (418-898)	1278
	07-08	**18.5** (15.6-22.0)	**14.4** (12.4-16.8)	**55.3** (38.5-77.0)	**300** (182-435)	**571** (359-729)	1310
	09-10	**17.1** (14.6-20.1)	**12.3** (10.7-14.8)	**50.6** (37.0-71.3)	**300** (187-422)	**556** (422-668)	1350
Race/ethnicity							
Mexican Americans	03-04	**13.3** (9.38-18.8)	**9.18** (5.45-13.9)	**66.7** (28.8-112)	**292** (151-432)	**453** (263-1150)	612
	05-06	**24.1** (19.3-29.9)	**17.6** (13.3-22.8)	**154** (96.4-242)	**440** (379-601)	**736** (601-818)	637
	07-08	**16.6** (12.2-22.6)	**12.6** (8.51-16.5)	**60.1** (39.6-80.3)	**325** (182-475)	**637** (368-828)	531
	09-10	**14.8** (12.1-18.2)	**9.38** (7.63-12.4)	**45.4** (32.2-110)	**352** (244-458)	**578** (402-737)	566
Non-Hispanic blacks	03-04	**9.94** (7.92-12.5)	**7.74** (5.50-10.0)	**30.2** (25.6-37.3)	**132** (78.0-213)	**260** (127-513)	651
	05-06	**12.2** (9.47-15.6)	**9.50** (7.64-11.8)	**41.0** (23.3-77.4)	**179** (106-243)	**352** (203-674)	678
	07-08	**10.6** (8.91-12.7)	**8.34** (6.47-10.1)	**28.6** (22.3-36.7)	**120** (71.0-203)	**266** (151-407)	597
	09-10	**9.23** (7.62-11.2)	**6.62** (5.63-8.18)	**22.7** (16.9-29.1)	**136** (63.6-240)	**356** (180-689)	516
Non-Hispanic whites	03-04	**13.3** (11.6-15.1)	**9.82** (8.11-11.5)	**47.0** (34.3-67.7)	**213** (160-272)	**358** (276-480)	1091
	05-06	**18.4** (16.0-21.2)	**13.5** (11.6-17.0)	**73.4** (56.8-97.0)	**282** (231-343)	**472** (367-699)	1038
	07-08	**15.6** (13.1-18.7)	**13.0** (10.7-14.8)	**50.4** (35.9-65.9)	**222** (129-303)	**418** (262-586)	1077
	09-10	**15.8** (13.1-19.0)	**11.4** (9.41-14.8)	**52.0** (37.0-71.3)	**242** (159-323)	**410** (317-547)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Triclosan_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Triclosan_FactSheet.html

Urinary Triclosan (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**13.4** (11.8-15.1)	**8.39** (6.79-10.0)	**49.3** (37.4-57.5)	**309** (229-404)	**642** (508-788)	2487
Age group							
6-11 years	11-12	**10.3** (8.18-12.9)	**6.70** (5.62-9.06)	**22.4** (16.3-31.7)	**103** (54.5-153)	**235** (113-333)	395
12-19 years	11-12	**9.84** (7.85-12.4)	**5.83** (4.95-7.23)	**26.3** (19.0-37.8)	**182** (65.0-399)	**421** (182-647)	388
20 years and older	11-12	**14.4** (12.4-16.7)	**9.06** (7.41-11.2)	**54.3** (43.9-75.0)	**364** (246-514)	**660** (536-817)	1704
Gender							
Males	11-12	**10.8** (9.49-12.2)	**6.40** (5.24-8.53)	**37.4** (26.8-49.4)	**226** (153-309)	**536** (311-656)	1258
Females	11-12	**16.5** (13.8-19.6)	**10.8** (8.44-12.7)	**53.3** (44.2-75.0)	**381** (273-539)	**746** (614-900)	1229
Race/ethnicity							
Mexican Americans	11-12	**14.2** (10.4-19.5)	**8.29** (6.10-12.4)	**62.5** (31.8-111)	**399** (163-536)	**536** (271-900)	316
Non-Hispanic blacks	11-12	**8.18** (7.09-9.44)	**5.52** (4.66-6.27)	**21.5** (16.7-29.9)	**130** (74.3-222)	**365** (229-461)	665
Non-Hispanic whites	11-12	**14.2** (12.1-16.7)	**8.95** (6.79-11.7)	**51.9** (39.1-69.1)	**311** (180-569)	**675** (508-817)	811
All Hispanics	11-12	**15.0** (13.0-17.3)	**8.58** (6.52-11.4)	**70.8** (40.8-98.6)	**449** (320-514)	**647** (506-913)	571
Asians	11-12	**15.7** (10.2-24.2)	**10.5** (6.05-17.4)	**51.8** (23.6-142)	**333** (127-609)	**575** (381-719)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Triclosan_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Triclosan_FactSheet.html

Urinary *ortho*-Phenylphenol (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**.100** (<LOD-.200)	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.10)	2525
	05-06	*	**< LOD**	**< LOD**	**.300** (.200-.400)	**.500** (.400-.800)	2548
	07-08	*	**< LOD**	**< LOD**	**.100** (.100-.200)	**.300** (.200-.400)	2604
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.500-.600)	2749
Age group							
6-11 years	03-04	**.180** (.158-.206)	**.200** (.200-.200)	**.300** (.300-.400)	**.600** (.500-.800)	**.800** (.500-1.30)	314
	05-06	*	**< LOD**	**.100** (<LOD-.200)	**.500** (.300-1.10)	**1.30** (.700-1.90)	356
	07-08	*	**< LOD**	**< LOD**	**.300** (.200-.500)	**.600** (.300-1.00)	389
	09-10	*	**< LOD**	**.200** (<LOD-.300)	**.400** (.300-.700)	**.600** (.400-1.20)	415
12-19 years	03-04	**.175** (.149-.206)	**.200** (.100-.200)	**.400** (.300-.500)	**.600** (.500-.800)	**.900** (.700-1.30)	722
	05-06	*	**< LOD**	**< LOD**	**.300** (.200-.500)	**.600** (.500-.800)	702
	07-08	*	**< LOD**	**< LOD**	**.100** (.100-.200)	**.300** (.200-.600)	401
	09-10	*	**< LOD**	**.200** (<LOD-.300)	**.400** (.300-.500)	**.600** (.500-.900)	420
20 years and older	03-04	*	**.100** (<LOD-.100)	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.10)	1489
	05-06	*	**< LOD**	**< LOD**	**.300** (.100-.400)	**.500** (.400-.800)	1490
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.200)	**.300** (.200-.400)	1814
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.400-.500)	1914
Gender							
Males	03-04	*	**.100** (<LOD-.200)	**.400** (.300-.400)	**.600** (.500-.700)	**.800** (.600-1.00)	1231
	05-06	*	**< LOD**	**< LOD**	**.300** (.200-.400)	**.500** (.400-.900)	1270
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.200)	**.300** (.200-.500)	1294
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.500-.700)	1399
Females	03-04	*	**.100** (<LOD-.200)	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.20)	1294
	05-06	*	**< LOD**	**< LOD**	**.300** (.200-.400)	**.500** (.400-.800)	1278
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.200)	**.300** (.200-.500)	1310
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.400-.500)	1350
Race/ethnicity							
Mexican Americans	03-04	**.191** (.150-.245)	**.200** (.100-.300)	**.400** (.300-.600)	**.700** (.500-1.10)	**1.10** (.600-1.60)	617
	05-06	*	**< LOD**	**< LOD**	**.400** (.100-.900)	**.800** (.400-3.20)	637
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.300)	**.400** (.200-1.10)	531
	09-10	*	**< LOD**	**< LOD**	**.300** (.200-.400)	**.400** (.300-.900)	566
Non-Hispanic blacks	03-04	*	**.100** (<LOD-.200)	**.400** (.300-.400)	**.600** (.500-.800)	**1.00** (.600-1.40)	636
	05-06	*	**< LOD**	**< LOD**	**.400** (.300-.500)	**.500** (.400-.700)	678
	07-08	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.400** (.200-.600)	597
	09-10	*	**< LOD**	**.200** (<LOD-.300)	**.400** (.300-.600)	**.700** (.500-.800)	516
Non-Hispanic whites	03-04	*	**.100** (<LOD-.100)	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.00)	1077
	05-06	*	**< LOD**	**< LOD**	**.300** (.100-.400)	**.500** (.300-1.10)	1038
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.200)	**.300** (.200-.500)	1077
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.400-.600)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.1, 0.1, 0.1, and 0.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Orthophenylphenol_BiomonitoringSummary.html

Urinary *ortho*-Phenylphenol (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**.150** (<LOD-.170)	**.320** (.270-.380)	**.670** (.500-.800)	**.950** (.750-1.31)	2522
	05-06	*	**< LOD**	**< LOD**	**.370** (.310-.410)	**.600** (.470-.750)	2548
	07-08	*	**< LOD**	**< LOD**	**.290** (.250-.330)	**.470** (.400-.520)	2604
	09-10	*	**< LOD**	**< LOD**	**.560** (.480-.640)	**.820** (.700-.910)	2749
Age group							
6-11 years	03-04	**.219** (.189-.255)	**.230** (.170-.280)	**.400** (.330-.540)	**.760** (.530-.860)	**.880** (.760-1.90)	314
	05-06	*	**< LOD**	**.180** (<LOD-.240)	**.590** (.430-.930)	**1.94** (.710-2.94)	356
	07-08	*	**< LOD**	**< LOD**	**.390** (.240-.660)	**.660** (.390-1.31)	389
	09-10	*	**< LOD**	**.410** (<LOD-.480)	**.820** (.560-1.06)	**1.22** (.850-1.56)	415
12-19 years	03-04	**.131** (.110-.156)	**.140** (.100-.160)	**.270** (.230-.340)	**.490** (.400-.690)	**.790** (.550-1.30)	720
	05-06	*	**< LOD**	**< LOD**	**.280** (.220-.320)	**.410** (.330-.710)	702
	07-08	*	**< LOD**	**< LOD**	**.190** (.170-.250)	**.330** (.240-.470)	401
	09-10	*	**< LOD**	**.250** (<LOD-.300)	**.420** (.300-.550)	**.550** (.390-1.20)	420
20 years and older	03-04	*	**.140** (<LOD-.170)	**.320** (.260-.370)	**.670** (.500-.800)	**1.00** (.740-1.38)	1488
	05-06	*	**< LOD**	**< LOD**	**.370** (.300-.410)	**.540** (.430-.710)	1490
	07-08	*	**< LOD**	**< LOD**	**.300** (<LOD-.330)	**.470** (.390-.520)	1814
	09-10	*	**< LOD**	**< LOD**	**.560** (.480-.640)	**.820** (.700-.880)	1914
Gender							
Males	03-04	*	**.130** (<LOD-.150)	**.290** (.240-.340)	**.570** (.430-.740)	**.880** (.720-1.06)	1230
	05-06	*	**< LOD**	**< LOD**	**.280** (.200-.350)	**.470** (.350-.670)	1270
	07-08	*	**< LOD**	**< LOD**	**.220** (<LOD-.250)	**.350** (.300-.440)	1294
	09-10	*	**< LOD**	**< LOD**	**.440** (.360-.540)	**.670** (.510-.850)	1399
Females	03-04	*	**.170** (<LOD-.200)	**.350** (.280-.440)	**.700** (.500-.940)	**1.07** (.730-1.57)	1292
	05-06	*	**< LOD**	**< LOD**	**.430** (.370-.500)	**.700** (.500-1.03)	1278
	07-08	*	**< LOD**	**< LOD**	**.350** (<LOD-.440)	**.500** (.440-.580)	1310
	09-10	*	**< LOD**	**< LOD**	**.640** (.570-.700)	**.930** (.780-1.17)	1350
Race/ethnicity							
Mexican Americans	03-04	**.174** (.132-.229)	**.170** (.120-.240)	**.440** (.280-.590)	**.770** (.560-1.09)	**1.11** (.770-1.72)	616
	05-06	*	**< LOD**	**< LOD**	**.370** (.210-.670)	**.740** (.390-1.71)	637
	07-08	*	**< LOD**	**< LOD**	**.250** (<LOD-.290)	**.430** (.320-.910)	531
	09-10	*	**< LOD**	**< LOD**	**.420** (.370-.560)	**.680** (.560-.880)	566
Non-Hispanic blacks	03-04	*	**.110** (<LOD-.130)	**.250** (.200-.310)	**.530** (.380-.650)	**.770** (.600-1.02)	635
	05-06	*	**< LOD**	**< LOD**	**.290** (.220-.370)	**.440** (.380-.540)	678
	07-08	*	**< LOD**	**< LOD**	**.210** (<LOD-.250)	**.330** (.250-.640)	597
	09-10	*	**< LOD**	**.220** (<LOD-.240)	**.370** (.310-.450)	**.570** (.440-.860)	516
Non-Hispanic whites	03-04	*	**.150** (<LOD-.180)	**.330** (.260-.390)	**.690** (.470-.830)	**1.00** (.740-1.38)	1076
	05-06	*	**< LOD**	**< LOD**	**.390** (.320-.430)	**.610** (.470-.880)	1038
	07-08	*	**< LOD**	**< LOD**	**.300** (<LOD-.370)	**.470** (.390-.580)	1077
	09-10	*	**< LOD**	**< LOD**	**.610** (.520-.700)	**.870** (.700-.940)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Orthophenylphenol_BiomonitoringSummary.html

Urinary Ethylene thiourea (2003 - 2008)

Metabolite of Several Dithiocarbamate Fungicides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	.310 (<LOD-.560)	2169
	05-06	*	< LOD	< LOD	.600 (<LOD-1.08)	1.34 (.900-1.75)	2585
	07-08	*	< LOD	< LOD	< LOD	.430 (<LOD-.960)	2571
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	280
	05-06	*	< LOD	< LOD	.830 (<LOD-1.53)	1.55 (.960-3.11)	342
	07-08	*	< LOD	< LOD	< LOD	.610 (<LOD-1.17)	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	.600 (<LOD-.920)	622
	05-06	*	< LOD	< LOD	.580 (<LOD-1.11)	1.34 (.660-2.23)	698
	07-08	*	< LOD	< LOD	< LOD	.440 (<LOD-.970)	387
20-59 years	03-04	*	< LOD	< LOD	< LOD	.310 (<LOD-.580)	827
	05-06	*	< LOD	< LOD	.750 (.500-1.18)	1.42 (1.05-1.75)	1072
	07-08	*	< LOD	< LOD	< LOD	.510 (<LOD-1.19)	1169
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	440
	05-06	*	< LOD	< LOD	< LOD	.360 (<LOD-.780)	473
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	.360 (<LOD-.530)	1056
	05-06	*	< LOD	< LOD	.940 (.530-1.19)	1.51 (1.08-2.09)	1219
	07-08	*	< LOD	< LOD	< LOD	.430 (<LOD-1.05)	1289
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1113
	05-06	*	< LOD	< LOD	.370 (<LOD-.890)	.950 (.500-1.58)	1366
	07-08	*	< LOD	< LOD	< LOD	.410 (<LOD-.960)	1282
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	495
	05-06	*	< LOD	< LOD	.440 (<LOD-.960)	1.12 (.650-1.76)	686
	07-08	*	< LOD	< LOD	< LOD	.340 (<LOD-.630)	491
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	.480 (<LOD-1.06)	607
	05-06	*	< LOD	< LOD	1.37 (.790-2.05)	2.22 (1.37-3.77)	695
	07-08	*	< LOD	< LOD	< LOD	.630 (<LOD-2.42)	570
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	.330 (<LOD-.560)	925
	05-06	*	< LOD	< LOD	.570 (<LOD-1.02)	1.18 (.940-1.42)	998
	07-08	*	< LOD	< LOD	< LOD	.300 (<LOD-.750)	1084

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.24, and 0.21 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ETUPTU_BiomonitoringSummary.html

Urinary Ethylene thiourea (creatinine corrected) (2003 - 2008)

Metabolite of Several Dithiocarbamate Fungicides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	.434 (<LOD-.538)	2167
	05-06	*	< LOD	< LOD	.792 (<LOD-1.06)	1.32 (1.06-1.58)	2585
	07-08	*	< LOD	< LOD	< LOD	.789 (<LOD-1.00)	2569
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	280
	05-06	*	< LOD	< LOD	1.04 (<LOD-1.36)	2.36 (1.16-3.12)	342
	07-08	*	< LOD	< LOD	< LOD	.974 (<LOD-1.50)	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	.423 (<LOD-.700)	621
	05-06	*	< LOD	< LOD	.582 (<LOD-.893)	.967 (.680-1.58)	698
	07-08	*	< LOD	< LOD	< LOD	.417 (<LOD-.652)	385
20-59 years	03-04	*	< LOD	< LOD	< LOD	.425 (<LOD-.506)	826
	05-06	*	< LOD	< LOD	.892 (.708-1.21)	1.36 (1.21-1.78)	1072
	07-08	*	< LOD	< LOD	< LOD	.789 (<LOD-1.31)	1169
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	440
	05-06	*	< LOD	< LOD	< LOD	1.00 (<LOD-1.21)	473
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	.350 (<LOD-.467)	1055
	05-06	*	< LOD	< LOD	.783 (.634-1.04)	1.28 (1.05-1.45)	1219
	07-08	*	< LOD	< LOD	< LOD	.529 (<LOD-.652)	1288
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1112
	05-06	*	< LOD	< LOD	.827 (<LOD-1.21)	1.33 (1.00-2.01)	1366
	07-08	*	< LOD	< LOD	< LOD	.938 (<LOD-1.25)	1281
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	494
	05-06	*	< LOD	< LOD	.748 (<LOD-1.17)	1.33 (.837-1.89)	686
	07-08	*	< LOD	< LOD	< LOD	.714 (<LOD-1.10)	490
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	.368 (<LOD-.619)	607
	05-06	*	< LOD	< LOD	1.02 (.649-1.74)	1.84 (1.04-2.50)	695
	07-08	*	< LOD	< LOD	< LOD	.652 (<LOD-1.34)	569
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	.434 (<LOD-.583)	924
	05-06	*	< LOD	< LOD	.773 (<LOD-1.04)	1.25 (.968-1.48)	998
	07-08	*	< LOD	< LOD	< LOD	.750 (<LOD-.882)	1084

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ETUPTU_BiomonitoringSummary.html

Urinary Pentachlorophenol (2003 - 2004)

Also a Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**1.12** (.570-1.58)	**2.57** (2.08-2.99)	**3.63** (2.98-4.61)	2354
Age group							
6-11 years	03-04	*	**< LOD**	**1.57** (.970-2.25)	**3.23** (2.12-5.67)	**5.67** (2.94-6.38)	290
12-19 years	03-04	*	**< LOD**	**1.36** (.760-1.99)	**2.88** (2.08-3.53)	**3.80** (3.06-6.38)	674
20-59 years	03-04	*	**< LOD**	**.980** (<LOD-1.50)	**2.40** (1.73-2.79)	**3.11** (2.75-3.65)	889
60 years and older	03-04	*	**< LOD**	**1.14** (.540-1.74)	**2.76** (2.17-3.60)	**4.77** (3.29-5.88)	501
Gender							
Males	03-04	*	**< LOD**	**1.32** (.720-2.05)	**2.79** (2.46-3.40)	**4.58** (3.50-5.49)	1147
Females	03-04	*	**< LOD**	**.880** (<LOD-1.41)	**2.12** (1.71-2.74)	**3.20** (2.44-3.84)	1207
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**1.73** (.640-3.38)	**2.44** (1.73-3.84)	550
Non-Hispanic blacks	03-04	*	**< LOD**	**1.46** (1.11-1.93)	**2.79** (2.22-3.65)	**4.06** (3.20-4.77)	610
Non-Hispanic whites	03-04	*	**< LOD**	**1.17** (.580-1.74)	**2.66** (2.06-3.23)	**3.69** (2.99-5.17)	1039

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 0.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pentachlorophenol_BiomonitoringSummary.html

Urinary Pentachlorophenol (creatinine corrected) (2003 - 2004)

Also a Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	**1.22** (1.01-1.52)	**2.30** (1.84-2.77)	**3.44** (2.69-3.96)	2352
Age group							
6-11 years	03-04	*	< LOD	**1.75** (1.38-2.69)	**3.72** (2.50-4.96)	**4.96** (3.59-10.6)	290
12-19 years	03-04	*	< LOD	**1.11** (.800-1.28)	**1.67** (1.31-2.65)	**2.76** (1.64-3.89)	673
20-59 years	03-04	*	< LOD	**1.10** (<LOD-1.31)	**1.99** (1.66-2.59)	**2.92** (2.20-3.81)	888
60 years and older	03-04	*	< LOD	**1.65** (1.30-1.99)	**2.64** (2.14-3.50)	**4.15** (2.92-4.90)	501
Gender							
Males	03-04	*	< LOD	**1.10** (.825-1.38)	**1.93** (1.62-2.65)	**3.23** (2.06-4.94)	1146
Females	03-04	*	< LOD	**1.37** (<LOD-1.74)	**2.50** (2.13-2.98)	**3.50** (2.79-4.07)	1206
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	**1.54** (1.01-2.69)	**2.33** (1.40-4.62)	549
Non-Hispanic blacks	03-04	*	< LOD	**.919** (.679-1.25)	**1.88** (1.42-2.77)	**2.94** (2.21-3.76)	610
Non-Hispanic whites	03-04	*	< LOD	**1.35** (1.08-1.64)	**2.42** (1.94-3.18)	**3.54** (2.77-4.78)	1038

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pentachlorophenol_BiomonitoringSummary.html

Urinary Propylene thiourea (2003 - 2008)

Metabolite of Propineb

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2456
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
	07-08	*	< LOD	< LOD	< LOD	< LOD	2573
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	305
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
	07-08	*	< LOD	< LOD	< LOD	< LOD	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	702
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	387
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	926
	05-06	*	< LOD	< LOD	< LOD	< LOD	1086
	07-08	*	< LOD	< LOD	< LOD	< LOD	1170
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	523
	05-06	*	< LOD	< LOD	< LOD	< LOD	475
	07-08	*	< LOD	< LOD	< LOD	< LOD	634
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1209
	05-06	*	< LOD	< LOD	< LOD	< LOD	1246
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1247
	05-06	*	< LOD	< LOD	< LOD	< LOD	1382
	07-08	*	< LOD	< LOD	< LOD	< LOD	1284
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	598
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	493
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	637
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	570
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1062
	05-06	*	< LOD	< LOD	< LOD	< LOD	1006
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.37, and 0.36 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ETUPTU_BiomonitoringSummary.html

Urinary Propylene thiourea (creatinine corrected) (2003 - 2008)

Metabolite of Propineb

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2454
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
	07-08	*	< LOD	< LOD	< LOD	< LOD	2571
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	305
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
	07-08	*	< LOD	< LOD	< LOD	< LOD	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	701
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	925
	05-06	*	< LOD	< LOD	< LOD	< LOD	1086
	07-08	*	< LOD	< LOD	< LOD	< LOD	1170
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	523
	05-06	*	< LOD	< LOD	< LOD	< LOD	475
	07-08	*	< LOD	< LOD	< LOD	< LOD	634
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1208
	05-06	*	< LOD	< LOD	< LOD	< LOD	1246
	07-08	*	< LOD	< LOD	< LOD	< LOD	1288
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1246
	05-06	*	< LOD	< LOD	< LOD	< LOD	1382
	07-08	*	< LOD	< LOD	< LOD	< LOD	1283
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	597
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	492
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	637
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	569
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1061
	05-06	*	< LOD	< LOD	< LOD	< LOD	1006
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ETUPTU_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenoxyacetic acid (1999 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1977
	01-02	*	< LOD	.220 (<LOD-.310)	.690 (.560-.880)	1.26 (1.01-1.36)	2903
	03-04	.245 (.210-.286)	.230 (.180-.320)	.580 (.490-.660)	1.10 (.910-1.34)	1.71 (1.41-2.37)	2488
	07-08	*	< LOD	.550 (.530-.590)	1.06 (.940-1.19)	1.60 (1.38-1.79)	2587
	09-10	.308 (.275-.345)	.280 (.250-.320)	.530 (.470-.600)	.930 (.810-1.08)	1.43 (1.12-2.02)	2747
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	1.30 (<LOD-2.40)	477
	01-02	*	< LOD	.310 (.210-.400)	.740 (.550-1.13)	1.55 (1.00-2.21)	546
	03-04	.266 (.214-.332)	.290 (.200-.390)	.670 (.440-.920)	1.03 (.890-1.40)	1.88 (1.01-2.54)	309
	07-08	*	< LOD	.720 (.630-.860)	1.44 (1.15-1.64)	1.93 (1.62-2.84)	385
	09-10	.385 (.330-.449)	.350 (.290-.440)	.670 (.510-.780)	1.20 (.860-1.58)	1.59 (1.36-2.77)	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.60)	677
	01-02	*	< LOD	.250 (<LOD-.420)	.690 (.440-1.16)	1.24 (.690-1.66)	797
	03-04	.256 (.212-.310)	.260 (.180-.380)	.580 (.470-.710)	1.04 (.890-1.31)	1.66 (1.20-2.97)	714
	07-08	*	< LOD	.590 (.530-.670)	1.29 (.790-1.97)	2.38 (1.46-2.73)	390
	09-10	.301 (.248-.366)	.280 (.240-.330)	.490 (.420-.620)	.900 (.660-1.05)	1.12 (.880-2.88)	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	823
	01-02	*	< LOD	.210 (<LOD-.310)	.690 (.540-.910)	1.27 (.930-1.49)	1070
	03-04	.239 (.205-.279)	.220 (.170-.300)	.570 (.480-.640)	.980 (.840-1.35)	1.55 (1.25-2.50)	937
	07-08	*	< LOD	.530 (.490-.570)	.970 (.800-1.17)	1.36 (1.22-1.78)	1179
	09-10	.288 (.259-.319)	.270 (.230-.310)	.500 (.440-.560)	.870 (.740-1.04)	1.33 (1.05-1.69)	1309
60 years and older	01-02	*	< LOD	< LOD	.560 (.390-.870)	1.26 (.690-1.78)	490
	03-04	.248 (.205-.301)	.210 (.130-.320)	.560 (.470-.680)	1.36 (1.07-1.90)	2.42 (1.66-3.67)	528
	07-08	*	< LOD	.560 (.530-.640)	1.02 (.840-1.12)	1.46 (1.10-2.11)	633
	09-10	.349 (.294-.414)	.300 (.230-.390)	.590 (.510-.720)	1.11 (.810-1.57)	2.08 (1.16-5.40)	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.80)	962
	01-02	*	< LOD	.330 (.220-.490)	.890 (.690-1.17)	1.49 (1.26-2.03)	1364
	03-04	.276 (.240-.317)	.290 (.210-.370)	.630 (.540-.740)	1.22 (.960-1.42)	2.12 (1.42-2.73)	1218
	07-08	*	< LOD	.610 (.580-.650)	1.26 (1.05-1.38)	2.11 (1.68-2.41)	1292
	09-10	.347 (.298-.404)	.320 (.270-.370)	.580 (.500-.690)	1.05 (.810-1.47)	1.82 (1.12-4.14)	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1015
	01-02	*	< LOD	< LOD	.470 (.360-.620)	.890 (.670-1.21)	1539
	03-04	.219 (.181-.264)	.190 (.110-.280)	.490 (.400-.630)	.980 (.860-1.33)	1.48 (1.31-2.27)	1270
	07-08	*	< LOD	.500 (.460-.540)	.870 (.790-1.01)	1.28 (1.12-1.42)	1295
	09-10	.275 (.250-.303)	.260 (.220-.300)	.480 (.440-.540)	.860 (.740-.950)	1.14 (.970-1.39)	1404

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 07-08 and 07-08 are 0.952, 0.2, and 0.1, 0.4 and 0.15 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4-DichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenoxyacetic acid (1999 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	695
	01-02	*	**< LOD**	**.250** (<LOD-.330)	**.730** (.610-.890)	**1.20** (.960-1.36)	743
	03-04	**.313** (.256-.383)	**.340** (.260-.440)	**.730** (.610-.840)	**1.42** (1.02-1.52)	**1.81** (1.23-3.53)	606
	07-08	*	**< LOD**	**.520** (.470-.590)	**.860** (.790-1.00)	**1.46** (.950-2.22)	500
	09-10	**.276** (.240-.318)	**.250** (.210-.300)	**.470** (.410-.570)	**.840** (.680-1.08)	**1.23** (.830-2.02)	602
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**1.20** (<LOD-1.70)	520
	01-02	*	**< LOD**	**< LOD**	**.560** (.420-.890)	**1.06** (.790-1.48)	743
	03-04	*	**.190** (<LOD-.290)	**.510** (.380-.630)	**.910** (.750-1.22)	**1.31** (.990-1.98)	648
	07-08	*	**< LOD**	**.580** (.530-.630)	**1.05** (.910-1.20)	**1.49** (1.23-1.97)	574
	09-10	**.284** (.251-.321)	**.260** (.240-.290)	**.460** (.390-.540)	**.790** (.620-1.03)	**1.11** (.790-1.81)	504
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	589
	01-02	*	**< LOD**	**.240** (<LOD-.360)	**.730** (.560-.980)	**1.30** (1.01-1.66)	1201
	03-04	**.254** (.211-.306)	**.240** (.180-.360)	**.590** (.470-.720)	**1.17** (.930-1.41)	**2.00** (1.40-2.51)	1076
	07-08	*	**< LOD**	**.560** (.540-.600)	**1.12** (.940-1.29)	**1.61** (1.36-2.16)	1083
	09-10	**.328** (.281-.382)	**.300** (.250-.370)	**.570** (.480-.680)	**.980** (.830-1.20)	**1.57** (1.14-2.77)	1200

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 07-08 and 07-08 are 0.952, 0.2, and 0.1, 0.4 and 0.15 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4-DichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenoxyacetic acid (creatinine corrected) (1999 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1977
	01-02	*	< LOD	**.378** (<LOD-.412)	**.700** (.635-.778)	**1.12** (1.03-1.26)	2901
	03-04	**.241** (.203-.287)	**.253** (.206-.290)	**.500** (.423-.610)	**1.03** (.855-1.28)	**1.85** (1.42-2.50)	2486
	07-08	*	< LOD	**.737** (.667-.779)	**1.28** (1.17-1.40)	**1.84** (1.65-2.12)	2585
	09-10	**.321** (.286-.360)	**.301** (.272-.329)	**.500** (.458-.573)	**.983** (.846-1.19)	**1.55** (1.30-2.12)	2747
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	**1.32** (<LOD-2.24)	477
	01-02	*	< LOD	**.485** (.378-.679)	**1.13** (.825-1.35)	**1.41** (1.27-1.73)	546
	03-04	**.323** (.249-.421)	**.320** (.250-.440)	**.744** (.500-1.06)	**1.30** (.990-2.55)	**2.55** (1.23-5.16)	309
	07-08	*	< LOD	**.970** (.817-1.24)	**1.65** (1.47-1.85)	**2.96** (1.65-6.18)	385
	09-10	**.521** (.444-.610)	**.478** (.411-.531)	**.792** (.674-1.06)	**1.52** (1.21-1.74)	**2.20** (1.53-3.02)	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	**.593** (<LOD-1.05)	677
	01-02	*	< LOD	**.275** (<LOD-.376)	**.483** (.328-.662)	**.662** (.517-.918)	796
	03-04	**.193** (.160-.232)	**.205** (.157-.250)	**.419** (.328-.460)	**.709** (.540-.925)	**1.23** (.837-2.35)	713
	07-08	*	< LOD	**.555** (.475-.651)	**.908** (.778-1.05)	**1.56** (.950-2.79)	388
	09-10	**.258** (.212-.314)	**.256** (.200-.299)	**.358** (.320-.439)	**.706** (.439-1.05)	**1.05** (.579-3.27)	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	823
	01-02	*	< LOD	**.378** (<LOD-.412)	**.667** (.593-.778)	**1.08** (.806-1.29)	1070
	03-04	**.227** (.188-.274)	**.242** (.196-.278)	**.452** (.397-.545)	**.923** (.708-1.20)	**1.48** (1.14-2.43)	936
	07-08	*	< LOD	**.667** (.588-.769)	**1.17** (1.04-1.34)	**1.65** (1.43-2.33)	1179
	09-10	**.288** (.259-.321)	**.276** (.250-.309)	**.458** (.418-.507)	**.860** (.750-.962)	**1.36** (1.00-1.88)	1309
60 years and older	01-02	*	< LOD	< LOD	**.824** (.583-1.10)	**1.34** (1.00-2.16)	489
	03-04	**.301** (.248-.366)	**.310** (.237-.385)	**.657** (.510-.866)	**1.54** (1.16-1.95)	**3.00** (1.95-6.36)	528
	07-08	*	< LOD	**.860** (.781-.903)	**1.53** (1.27-1.72)	**1.96** (1.60-2.33)	633
	09-10	**.414** (.356-.480)	**.354** (.306-.407)	**.667** (.548-.812)	**1.41** (.983-1.99)	**2.87** (1.49-4.49)	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**.667** (<LOD-1.16)	962
	01-02	*	< LOD	**.336** (.272-.412)	**.652** (.560-.825)	**1.14** (.979-1.39)	1364
	03-04	**.227** (.189-.271)	**.238** (.194-.276)	**.473** (.412-.564)	**.941** (.767-1.23)	**1.80** (1.09-2.79)	1217
	07-08	*	< LOD	**.596** (.538-.670)	**1.14** (.980-1.24)	**1.63** (1.47-2.15)	1291
	09-10	**.309** (.266-.359)	**.282** (.242-.323)	**.481** (.413-.554)	**1.01** (.707-1.57)	**1.80** (1.06-3.88)	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1015
	01-02	*	< LOD	< LOD	**.711** (.631-.809)	**1.10** (.933-1.26)	1537
	03-04	**.256** (.213-.308)	**.263** (.212-.311)	**.522** (.435-.645)	**1.14** (.900-1.42)	**1.85** (1.42-2.64)	1269
	07-08	*	< LOD	**.854** (.757-.903)	**1.47** (1.23-1.58)	**1.91** (1.65-2.33)	1294
	09-10	**.334** (.302-.369)	**.319** (.288-.355)	**.533** (.475-.611)	**.953** (.862-1.10)	**1.40** (1.21-1.55)	1404

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4-DichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenoxyacetic acid (creatinine corrected) (1999 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	695
	01-02	*	**< LOD**	**.350** (<LOD-.386)	**.720** (.583-.840)	**1.08** (.778-1.56)	743
	03-04	**.287** (.223-.371)	**.309** (.194-.459)	**.593** (.463-.771)	**1.08** (.833-1.36)	**1.54** (1.17-3.19)	605
	07-08	*	**< LOD**	**.622** (.571-.691)	**1.15** (.903-1.43)	**1.74** (1.37-2.33)	499
	09-10	**.289** (.255-.326)	**.282** (.255-.300)	**.434** (.392-.495)	**.781** (.565-1.11)	**1.30** (.733-2.63)	602
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.593** (<LOD-1.19)	520
	01-02	*	**< LOD**	**< LOD**	**.467** (.349-.583)	**.778** (.552-.975)	742
	03-04	*	**.140** (<LOD-.194)	**.304** (.264-.356)	**.629** (.461-.815)	**.970** (.719-1.50)	648
	07-08	*	**< LOD**	**.509** (.457-.596)	**.966** (.875-1.07)	**1.33** (1.12-1.75)	573
	09-10	**.215** (.192-.240)	**.195** (.180-.218)	**.344** (.314-.400)	**.628** (.489-.822)	**1.06** (.714-1.38)	504
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	589
	01-02	*	**< LOD**	**.412** (<LOD-.455)	**.769** (.667-.894)	**1.25** (1.05-1.40)	1200
	03-04	**.263** (.213-.326)	**.269** (.226-.318)	**.539** (.434-.665)	**1.13** (.941-1.46)	**2.34** (1.54-2.73)	1075
	07-08	*	**< LOD**	**.780** (.737-.871)	**1.36** (1.17-1.55)	**2.00** (1.60-2.49)	1083
	09-10	**.357** (.308-.414)	**.328** (.288-.384)	**.547** (.485-.644)	**1.10** (.897-1.40)	**1.79** (1.35-3.02)	1200

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4-DichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenoxyacetic acid (1999 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1814
	01-02	*	< LOD	< LOD	< LOD	< LOD	3047
	03-04	*	< LOD	< LOD	< LOD	.140 (<LOD-.210)	2416
	07-08	*	< LOD	< LOD	< LOD	< LOD	2588
	09-10	*	< LOD	< LOD	< LOD	< LOD	2747
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	430
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	03-04	*	< LOD	< LOD	< LOD	.110 (<LOD-.160)	303
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
	09-10	*	< LOD	< LOD	< LOD	< LOD	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	618
	01-02	*	< LOD	< LOD	< LOD	< LOD	831
	03-04	*	< LOD	< LOD	< LOD	.140 (<LOD-.190)	701
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	766
	01-02	*	< LOD	< LOD	< LOD	< LOD	1127
	03-04	*	< LOD	< LOD	< LOD	.160 (<LOD-.250)	908
	07-08	*	< LOD	< LOD	< LOD	< LOD	1180
	09-10	*	< LOD	< LOD	< LOD	< LOD	1309
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	509
	03-04	*	< LOD	< LOD	< LOD	.140 (<LOD-.230)	504
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
	09-10	*	< LOD	< LOD	< LOD	< LOD	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	891
	01-02	*	< LOD	< LOD	< LOD	< LOD	1428
	03-04	*	< LOD	< LOD	< LOD	.140 (<LOD-.210)	1184
	07-08	*	< LOD	< LOD	< LOD	< LOD	1293
	09-10	*	< LOD	< LOD	< LOD	< LOD	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	923
	01-02	*	< LOD	< LOD	< LOD	< LOD	1619
	03-04	*	< LOD	< LOD	< LOD	.150 (<LOD-.230)	1232
	07-08	*	< LOD	< LOD	< LOD	< LOD	1295
	09-10	*	< LOD	< LOD	< LOD	< LOD	1404

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 07-08 and 07-08 are 1.2, 0.1, and 0.1, 0.1 and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4,5-TrichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenoxyacetic acid (1999 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	766
	03-04	*	**< LOD**	**< LOD**	**.120** (<LOD-.340)	**.200** (<LOD-.390)	605
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	500
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	602
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	483
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	776
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	641
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	574
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	504
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1281
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.150** (<LOD-.230)	1013
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1084
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1200

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 07-08 and 07-08 are 1.2, 0.1, and 0.1, 0.1 and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4,5-TrichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenoxyacetic acid (creatinine corrected) (1999 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1814
	01-02	*	< LOD	< LOD	< LOD	< LOD	3045
	03-04	*	< LOD	< LOD	< LOD	**.333** (<LOD-.412)	2414
	07-08	*	< LOD	< LOD	< LOD	< LOD	2586
	09-10	*	< LOD	< LOD	< LOD	< LOD	2747
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	430
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	03-04	*	< LOD	< LOD	< LOD	**.318** (<LOD-.368)	303
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
	09-10	*	< LOD	< LOD	< LOD	< LOD	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	618
	01-02	*	< LOD	< LOD	< LOD	< LOD	830
	03-04	*	< LOD	< LOD	< LOD	**.226** (<LOD-.269)	700
	07-08	*	< LOD	< LOD	< LOD	< LOD	388
	09-10	*	< LOD	< LOD	< LOD	< LOD	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	766
	01-02	*	< LOD	< LOD	< LOD	< LOD	1127
	03-04	*	< LOD	< LOD	< LOD	**.350** (<LOD-.438)	907
	07-08	*	< LOD	< LOD	< LOD	< LOD	1180
	09-10	*	< LOD	< LOD	< LOD	< LOD	1309
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	508
	03-04	*	< LOD	< LOD	< LOD	**.368** (<LOD-.538)	504
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
	09-10	*	< LOD	< LOD	< LOD	< LOD	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	891
	01-02	*	< LOD	< LOD	< LOD	< LOD	1428
	03-04	*	< LOD	< LOD	< LOD	**.253** (<LOD-.350)	1183
	07-08	*	< LOD	< LOD	< LOD	< LOD	1292
	09-10	*	< LOD	< LOD	< LOD	< LOD	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	923
	01-02	*	< LOD	< LOD	< LOD	< LOD	1617
	03-04	*	< LOD	< LOD	< LOD	**.432** (<LOD-.500)	1231
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1404

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4,5-TrichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenoxyacetic acid (creatinine corrected) (1999 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	766
	03-04	*	**< LOD**	**< LOD**	**.200** (<LOD-.333)	**.333** (<LOD-.467)	604
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	499
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	602
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	483
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	775
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	641
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	573
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	504
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1280
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.350** (<LOD-.438)	1012
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1084
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1200

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4,5-TrichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary Bensulfuron-methyl (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2355
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2494
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	286
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	671
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1398
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1739
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1150
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1240
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1205
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1254
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	567
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	477
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	617
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	558
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1018
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1053

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Bensulfuron-methyl (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2353
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2492
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	286
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1397
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1739
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1149
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1239
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1204
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1253
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	566
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	476
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	617
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	557
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1017
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1053

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Chlorsulfuron (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2100
	05-06	*	< LOD	< LOD	< LOD	< LOD	2419
	07-08	*	< LOD	< LOD	< LOD	< LOD	2566
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	259
	05-06	*	< LOD	< LOD	< LOD	< LOD	314
	07-08	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	601
	05-06	*	< LOD	< LOD	< LOD	< LOD	653
	07-08	*	< LOD	< LOD	< LOD	< LOD	386
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1240
	05-06	*	< LOD	< LOD	< LOD	< LOD	1452
	07-08	*	< LOD	< LOD	< LOD	< LOD	1800
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1031
	05-06	*	< LOD	< LOD	< LOD	< LOD	1151
	07-08	*	< LOD	< LOD	< LOD	< LOD	1285
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1069
	05-06	*	< LOD	< LOD	< LOD	< LOD	1268
	07-08	*	< LOD	< LOD	< LOD	< LOD	1281
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	506
	05-06	*	< LOD	< LOD	< LOD	< LOD	633
	07-08	*	< LOD	< LOD	< LOD	< LOD	491
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	568
	05-06	*	< LOD	< LOD	< LOD	< LOD	658
	07-08	*	< LOD	< LOD	< LOD	< LOD	570
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	894
	05-06	*	< LOD	< LOD	< LOD	< LOD	940
	07-08	*	< LOD	< LOD	< LOD	< LOD	1081

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.06, 0.06, and 0.06 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Chlorsulfuron (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2098
	05-06	*	< LOD	< LOD	< LOD	< LOD	2419
	07-08	*	< LOD	< LOD	< LOD	< LOD	2564
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	259
	05-06	*	< LOD	< LOD	< LOD	< LOD	314
	07-08	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	600
	05-06	*	< LOD	< LOD	< LOD	< LOD	653
	07-08	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1239
	05-06	*	< LOD	< LOD	< LOD	< LOD	1452
	07-08	*	< LOD	< LOD	< LOD	< LOD	1800
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1030
	05-06	*	< LOD	< LOD	< LOD	< LOD	1151
	07-08	*	< LOD	< LOD	< LOD	< LOD	1284
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1068
	05-06	*	< LOD	< LOD	< LOD	< LOD	1268
	07-08	*	< LOD	< LOD	< LOD	< LOD	1280
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	505
	05-06	*	< LOD	< LOD	< LOD	< LOD	633
	07-08	*	< LOD	< LOD	< LOD	< LOD	490
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	568
	05-06	*	< LOD	< LOD	< LOD	< LOD	658
	07-08	*	< LOD	< LOD	< LOD	< LOD	569
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	893
	05-06	*	< LOD	< LOD	< LOD	< LOD	940
	07-08	*	< LOD	< LOD	< LOD	< LOD	1081

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Ethametsulfuron-methyl (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2321
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2458
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	294
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	671
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1356
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1711
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1132
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1218
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1189
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1240
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	590
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	468
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	608
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	534
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	974
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1052

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04, 05-06, and 07-08 are 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Ethametsulfuron-methyl (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2319
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2456
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	294
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1711
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1131
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1217
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1188
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1239
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	589
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	467
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	608
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	533
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	973
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1052

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Foramsulfuron (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2255
	05-06	*	< LOD	< LOD	< LOD	< LOD	2534
	07-08	*	< LOD	< LOD	< LOD	< LOD	2423
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	283
	05-06	*	< LOD	< LOD	< LOD	< LOD	334
	07-08	*	< LOD	< LOD	< LOD	< LOD	364
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	653
	05-06	*	< LOD	< LOD	< LOD	< LOD	688
	07-08	*	< LOD	< LOD	< LOD	< LOD	364
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1319
	05-06	*	< LOD	< LOD	< LOD	< LOD	1512
	07-08	*	< LOD	< LOD	< LOD	< LOD	1695
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1097
	05-06	*	< LOD	< LOD	< LOD	< LOD	1203
	07-08	*	< LOD	< LOD	< LOD	< LOD	1205
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1158
	05-06	*	< LOD	< LOD	< LOD	< LOD	1331
	07-08	*	< LOD	< LOD	< LOD	< LOD	1218
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	587
	05-06	*	< LOD	< LOD	< LOD	< LOD	632
	07-08	*	< LOD	< LOD	< LOD	< LOD	487
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	584
	05-06	*	< LOD	< LOD	< LOD	< LOD	711
	07-08	*	< LOD	< LOD	< LOD	< LOD	523
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	935
	05-06	*	< LOD	< LOD	< LOD	< LOD	990
	07-08	*	< LOD	< LOD	< LOD	< LOD	1004

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Foramsulfuron (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2253
	05-06	*	< LOD	< LOD	< LOD	< LOD	2534
	07-08	*	< LOD	< LOD	< LOD	< LOD	2421
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	283
	05-06	*	< LOD	< LOD	< LOD	< LOD	334
	07-08	*	< LOD	< LOD	< LOD	< LOD	364
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	652
	05-06	*	< LOD	< LOD	< LOD	< LOD	688
	07-08	*	< LOD	< LOD	< LOD	< LOD	362
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1318
	05-06	*	< LOD	< LOD	< LOD	< LOD	1512
	07-08	*	< LOD	< LOD	< LOD	< LOD	1695
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1096
	05-06	*	< LOD	< LOD	< LOD	< LOD	1203
	07-08	*	< LOD	< LOD	< LOD	< LOD	1204
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1157
	05-06	*	< LOD	< LOD	< LOD	< LOD	1331
	07-08	*	< LOD	< LOD	< LOD	< LOD	1217
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	586
	05-06	*	< LOD	< LOD	< LOD	< LOD	632
	07-08	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	584
	05-06	*	< LOD	< LOD	< LOD	< LOD	711
	07-08	*	< LOD	< LOD	< LOD	< LOD	522
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	934
	05-06	*	< LOD	< LOD	< LOD	< LOD	990
	07-08	*	< LOD	< LOD	< LOD	< LOD	1004

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Halosulfuron (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2356
	05-06	*	< LOD	< LOD	< LOD	< LOD	2485
	07-08	*	< LOD	< LOD	< LOD	< LOD	2530
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	331
	07-08	*	< LOD	< LOD	< LOD	< LOD	377
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	672
	05-06	*	< LOD	< LOD	< LOD	< LOD	679
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1393
	05-06	*	< LOD	< LOD	< LOD	< LOD	1475
	07-08	*	< LOD	< LOD	< LOD	< LOD	1768
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1148
	05-06	*	< LOD	< LOD	< LOD	< LOD	1184
	07-08	*	< LOD	< LOD	< LOD	< LOD	1261
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1208
	05-06	*	< LOD	< LOD	< LOD	< LOD	1301
	07-08	*	< LOD	< LOD	< LOD	< LOD	1269
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	592
	05-06	*	< LOD	< LOD	< LOD	< LOD	650
	07-08	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	609
	05-06	*	< LOD	< LOD	< LOD	< LOD	694
	07-08	*	< LOD	< LOD	< LOD	< LOD	565
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1005
	05-06	*	< LOD	< LOD	< LOD	< LOD	950
	07-08	*	< LOD	< LOD	< LOD	< LOD	1068

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Halosulfuron (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2354
	05-06	*	< LOD	< LOD	< LOD	< LOD	2485
	07-08	*	< LOD	< LOD	< LOD	< LOD	2528
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	331
	07-08	*	< LOD	< LOD	< LOD	< LOD	377
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	671
	05-06	*	< LOD	< LOD	< LOD	< LOD	679
	07-08	*	< LOD	< LOD	< LOD	< LOD	383
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1392
	05-06	*	< LOD	< LOD	< LOD	< LOD	1475
	07-08	*	< LOD	< LOD	< LOD	< LOD	1768
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1147
	05-06	*	< LOD	< LOD	< LOD	< LOD	1184
	07-08	*	< LOD	< LOD	< LOD	< LOD	1260
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1207
	05-06	*	< LOD	< LOD	< LOD	< LOD	1301
	07-08	*	< LOD	< LOD	< LOD	< LOD	1268
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	591
	05-06	*	< LOD	< LOD	< LOD	< LOD	650
	07-08	*	< LOD	< LOD	< LOD	< LOD	484
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	609
	05-06	*	< LOD	< LOD	< LOD	< LOD	694
	07-08	*	< LOD	< LOD	< LOD	< LOD	564
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1004
	05-06	*	< LOD	< LOD	< LOD	< LOD	950
	07-08	*	< LOD	< LOD	< LOD	< LOD	1068

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Mesosulfuron-methyl (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2427
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2494
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	302
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	372
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	371
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1431
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1751
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1189
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1245
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1238
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1249
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	596
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	465
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	634
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	554
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1039
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1059

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.06, 0.06, and 0.06 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Mesosulfuron-methyl (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2425
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2492
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	302
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	372
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	693
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	369
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1430
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1751
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1188
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1244
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1237
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1248
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	595
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	464
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	634
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	553
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1038
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1059

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Metsulfuron-methyl (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2360
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2494
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	297
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	373
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	675
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1388
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1747
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1152
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1246
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1208
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1248
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	595
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	470
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	596
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	538
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1013
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1066

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Metsulfuron-methyl (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2358
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2492
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	297
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	373
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	674
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	372
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1387
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1747
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1151
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1245
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1207
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1247
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	594
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	469
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	596
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	537
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1012
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1066

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Nicosulfuron (2003 -2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2322
	05-06	*	< LOD	< LOD	< LOD	< LOD	2570
	07-08	*	< LOD	< LOD	< LOD	< LOD	2422
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	296
	05-06	*	< LOD	< LOD	< LOD	< LOD	341
	07-08	*	< LOD	< LOD	< LOD	< LOD	363
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	666
	05-06	*	< LOD	< LOD	< LOD	< LOD	699
	07-08	*	< LOD	< LOD	< LOD	< LOD	364
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1360
	05-06	*	< LOD	< LOD	< LOD	< LOD	1530
	07-08	*	< LOD	< LOD	< LOD	< LOD	1695
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1131
	05-06	*	< LOD	< LOD	< LOD	< LOD	1222
	07-08	*	< LOD	< LOD	< LOD	< LOD	1210
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1191
	05-06	*	< LOD	< LOD	< LOD	< LOD	1348
	07-08	*	< LOD	< LOD	< LOD	< LOD	1212
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	589
	05-06	*	< LOD	< LOD	< LOD	< LOD	656
	07-08	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	601
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	524
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	980
	05-06	*	< LOD	< LOD	< LOD	< LOD	993
	07-08	*	< LOD	< LOD	< LOD	< LOD	1007

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Nicosulfuron (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2320
	05-06	*	< LOD	< LOD	< LOD	< LOD	2570
	07-08	*	< LOD	< LOD	< LOD	< LOD	2420
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	296
	05-06	*	< LOD	< LOD	< LOD	< LOD	341
	07-08	*	< LOD	< LOD	< LOD	< LOD	363
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	665
	05-06	*	< LOD	< LOD	< LOD	< LOD	699
	07-08	*	< LOD	< LOD	< LOD	< LOD	362
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1359
	05-06	*	< LOD	< LOD	< LOD	< LOD	1530
	07-08	*	< LOD	< LOD	< LOD	< LOD	1695
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1130
	05-06	*	< LOD	< LOD	< LOD	< LOD	1222
	07-08	*	< LOD	< LOD	< LOD	< LOD	1209
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1190
	05-06	*	< LOD	< LOD	< LOD	< LOD	1348
	07-08	*	< LOD	< LOD	< LOD	< LOD	1211
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	588
	05-06	*	< LOD	< LOD	< LOD	< LOD	656
	07-08	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	601
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	523
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	979
	05-06	*	< LOD	< LOD	< LOD	< LOD	993
	07-08	*	< LOD	< LOD	< LOD	< LOD	1007

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Oxasulfuron (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2355
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2540
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	672
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1393
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1780
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1150
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1269
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1205
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1271
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	579
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	487
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	616
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	567
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1018
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1076

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.06, 0.06, and 0.06 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Oxasulfuron (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2353
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2538
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	671
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1392
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1780
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1149
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1268
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1204
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1270
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	578
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	616
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	566
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1017
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1076

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Primisulfuron-methyl (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2250
	05-06	*	< LOD	< LOD	< LOD	< LOD	2455
	07-08	*	< LOD	< LOD	< LOD	< LOD	2422
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	285
	05-06	*	< LOD	< LOD	< LOD	< LOD	327
	07-08	*	< LOD	< LOD	< LOD	< LOD	356
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	627
	05-06	*	< LOD	< LOD	< LOD	< LOD	665
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1338
	05-06	*	< LOD	< LOD	< LOD	< LOD	1463
	07-08	*	< LOD	< LOD	< LOD	< LOD	1690
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1107
	05-06	*	< LOD	< LOD	< LOD	< LOD	1160
	07-08	*	< LOD	< LOD	< LOD	< LOD	1207
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1143
	05-06	*	< LOD	< LOD	< LOD	< LOD	1295
	07-08	*	< LOD	< LOD	< LOD	< LOD	1215
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	574
	05-06	*	< LOD	< LOD	< LOD	< LOD	667
	07-08	*	< LOD	< LOD	< LOD	< LOD	456
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	556
	05-06	*	< LOD	< LOD	< LOD	< LOD	661
	07-08	*	< LOD	< LOD	< LOD	< LOD	549
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	975
	05-06	*	< LOD	< LOD	< LOD	< LOD	938
	07-08	*	< LOD	< LOD	< LOD	< LOD	1030

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.07, 0.07, and 0.07 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Primisulfuron-methyl (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2249
	05-06	*	< LOD	< LOD	< LOD	< LOD	2455
	07-08	*	< LOD	< LOD	< LOD	< LOD	2420
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	285
	05-06	*	< LOD	< LOD	< LOD	< LOD	327
	07-08	*	< LOD	< LOD	< LOD	< LOD	356
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	626
	05-06	*	< LOD	< LOD	< LOD	< LOD	665
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1338
	05-06	*	< LOD	< LOD	< LOD	< LOD	1463
	07-08	*	< LOD	< LOD	< LOD	< LOD	1690
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1107
	05-06	*	< LOD	< LOD	< LOD	< LOD	1160
	07-08	*	< LOD	< LOD	< LOD	< LOD	1206
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1142
	05-06	*	< LOD	< LOD	< LOD	< LOD	1295
	07-08	*	< LOD	< LOD	< LOD	< LOD	1214
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	573
	05-06	*	< LOD	< LOD	< LOD	< LOD	667
	07-08	*	< LOD	< LOD	< LOD	< LOD	455
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	556
	05-06	*	< LOD	< LOD	< LOD	< LOD	661
	07-08	*	< LOD	< LOD	< LOD	< LOD	548
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	975
	05-06	*	< LOD	< LOD	< LOD	< LOD	938
	07-08	*	< LOD	< LOD	< LOD	< LOD	1030

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Prosulfuron (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2247
	05-06	*	< LOD	< LOD	< LOD	< LOD	2461
	07-08	*	< LOD	< LOD	< LOD	< LOD	2566
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	284
	05-06	*	< LOD	< LOD	< LOD	< LOD	326
	07-08	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	640
	05-06	*	< LOD	< LOD	< LOD	< LOD	676
	07-08	*	< LOD	< LOD	< LOD	< LOD	386
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1323
	05-06	*	< LOD	< LOD	< LOD	< LOD	1459
	07-08	*	< LOD	< LOD	< LOD	< LOD	1800
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1100
	05-06	*	< LOD	< LOD	< LOD	< LOD	1165
	07-08	*	< LOD	< LOD	< LOD	< LOD	1285
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1147
	05-06	*	< LOD	< LOD	< LOD	< LOD	1296
	07-08	*	< LOD	< LOD	< LOD	< LOD	1281
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	589
	05-06	*	< LOD	< LOD	< LOD	< LOD	673
	07-08	*	< LOD	< LOD	< LOD	< LOD	491
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	565
	05-06	*	< LOD	< LOD	< LOD	< LOD	677
	07-08	*	< LOD	< LOD	< LOD	< LOD	570
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	940
	05-06	*	< LOD	< LOD	< LOD	< LOD	924
	07-08	*	< LOD	< LOD	< LOD	< LOD	1081

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Prosulfuron (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2245
	05-06	*	< LOD	< LOD	< LOD	< LOD	2461
	07-08	*	< LOD	< LOD	< LOD	< LOD	2564
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	284
	05-06	*	< LOD	< LOD	< LOD	< LOD	326
	07-08	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	639
	05-06	*	< LOD	< LOD	< LOD	< LOD	676
	07-08	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1322
	05-06	*	< LOD	< LOD	< LOD	< LOD	1459
	07-08	*	< LOD	< LOD	< LOD	< LOD	1800
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1099
	05-06	*	< LOD	< LOD	< LOD	< LOD	1165
	07-08	*	< LOD	< LOD	< LOD	< LOD	1284
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1146
	05-06	*	< LOD	< LOD	< LOD	< LOD	1296
	07-08	*	< LOD	< LOD	< LOD	< LOD	1280
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	588
	05-06	*	< LOD	< LOD	< LOD	< LOD	673
	07-08	*	< LOD	< LOD	< LOD	< LOD	490
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	565
	05-06	*	< LOD	< LOD	< LOD	< LOD	677
	07-08	*	< LOD	< LOD	< LOD	< LOD	569
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	939
	05-06	*	< LOD	< LOD	< LOD	< LOD	924
	07-08	*	< LOD	< LOD	< LOD	< LOD	1081

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Rimsulfuron (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2284
	05-06	*	< LOD	< LOD	< LOD	< LOD	2593
	07-08	*	< LOD	< LOD	< LOD	< LOD	2530
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	279
	05-06	*	< LOD	< LOD	< LOD	< LOD	346
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	654
	05-06	*	< LOD	< LOD	< LOD	< LOD	706
	07-08	*	< LOD	< LOD	< LOD	< LOD	383
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1351
	05-06	*	< LOD	< LOD	< LOD	< LOD	1541
	07-08	*	< LOD	< LOD	< LOD	< LOD	1771
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1110
	05-06	*	< LOD	< LOD	< LOD	< LOD	1224
	07-08	*	< LOD	< LOD	< LOD	< LOD	1271
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1174
	05-06	*	< LOD	< LOD	< LOD	< LOD	1369
	07-08	*	< LOD	< LOD	< LOD	< LOD	1259
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	561
	05-06	*	< LOD	< LOD	< LOD	< LOD	675
	07-08	*	< LOD	< LOD	< LOD	< LOD	463
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	592
	05-06	*	< LOD	< LOD	< LOD	< LOD	715
	07-08	*	< LOD	< LOD	< LOD	< LOD	568
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	985
	05-06	*	< LOD	< LOD	< LOD	< LOD	998
	07-08	*	< LOD	< LOD	< LOD	< LOD	1080

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Rimsulfuron (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2282
	05-06	*	< LOD	< LOD	< LOD	< LOD	2593
	07-08	*	< LOD	< LOD	< LOD	< LOD	2528
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	279
	05-06	*	< LOD	< LOD	< LOD	< LOD	346
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	653
	05-06	*	< LOD	< LOD	< LOD	< LOD	706
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1350
	05-06	*	< LOD	< LOD	< LOD	< LOD	1541
	07-08	*	< LOD	< LOD	< LOD	< LOD	1771
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1109
	05-06	*	< LOD	< LOD	< LOD	< LOD	1224
	07-08	*	< LOD	< LOD	< LOD	< LOD	1270
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1173
	05-06	*	< LOD	< LOD	< LOD	< LOD	1369
	07-08	*	< LOD	< LOD	< LOD	< LOD	1258
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	560
	05-06	*	< LOD	< LOD	< LOD	< LOD	675
	07-08	*	< LOD	< LOD	< LOD	< LOD	462
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	592
	05-06	*	< LOD	< LOD	< LOD	< LOD	715
	07-08	*	< LOD	< LOD	< LOD	< LOD	567
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	984
	05-06	*	< LOD	< LOD	< LOD	< LOD	998
	07-08	*	< LOD	< LOD	< LOD	< LOD	1080

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Sulfometuron-methyl (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2067
	05-06	*	< LOD	< LOD	< LOD	< LOD	2598
	07-08	*	< LOD	< LOD	< LOD	< LOD	2458
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	252
	05-06	*	< LOD	< LOD	< LOD	< LOD	345
	07-08	*	< LOD	< LOD	< LOD	< LOD	352
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	587
	05-06	*	< LOD	< LOD	< LOD	< LOD	710
	07-08	*	< LOD	< LOD	< LOD	< LOD	373
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1228
	05-06	*	< LOD	< LOD	< LOD	< LOD	1543
	07-08	*	< LOD	< LOD	< LOD	< LOD	1733
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1007
	05-06	*	< LOD	< LOD	< LOD	< LOD	1233
	07-08	*	< LOD	< LOD	< LOD	< LOD	1226
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1060
	05-06	*	< LOD	< LOD	< LOD	< LOD	1365
	07-08	*	< LOD	< LOD	< LOD	< LOD	1232
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	441
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	454
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	569
	05-06	*	< LOD	< LOD	< LOD	< LOD	698
	07-08	*	< LOD	< LOD	< LOD	< LOD	557
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	916
	05-06	*	< LOD	< LOD	< LOD	< LOD	996
	07-08	*	< LOD	< LOD	< LOD	< LOD	1045

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Sulfometuron-methyl (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2065
	05-06	*	< LOD	< LOD	< LOD	< LOD	2598
	07-08	*	< LOD	< LOD	< LOD	< LOD	2456
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	252
	05-06	*	< LOD	< LOD	< LOD	< LOD	345
	07-08	*	< LOD	< LOD	< LOD	< LOD	352
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	586
	05-06	*	< LOD	< LOD	< LOD	< LOD	710
	07-08	*	< LOD	< LOD	< LOD	< LOD	371
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1227
	05-06	*	< LOD	< LOD	< LOD	< LOD	1543
	07-08	*	< LOD	< LOD	< LOD	< LOD	1733
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1006
	05-06	*	< LOD	< LOD	< LOD	< LOD	1233
	07-08	*	< LOD	< LOD	< LOD	< LOD	1225
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1059
	05-06	*	< LOD	< LOD	< LOD	< LOD	1365
	07-08	*	< LOD	< LOD	< LOD	< LOD	1231
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	440
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	453
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	569
	05-06	*	< LOD	< LOD	< LOD	< LOD	698
	07-08	*	< LOD	< LOD	< LOD	< LOD	556
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	915
	05-06	*	< LOD	< LOD	< LOD	< LOD	996
	07-08	*	< LOD	< LOD	< LOD	< LOD	1045

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Sulfosulfuron (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2391
	05-06	*	< LOD	< LOD	< LOD	< LOD	2593
	07-08	*	< LOD	< LOD	< LOD	< LOD	2530
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	294
	05-06	*	< LOD	< LOD	< LOD	< LOD	344
	07-08	*	< LOD	< LOD	< LOD	< LOD	377
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	681
	05-06	*	< LOD	< LOD	< LOD	< LOD	708
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1416
	05-06	*	< LOD	< LOD	< LOD	< LOD	1541
	07-08	*	< LOD	< LOD	< LOD	< LOD	1768
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1170
	05-06	*	< LOD	< LOD	< LOD	< LOD	1230
	07-08	*	< LOD	< LOD	< LOD	< LOD	1261
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1221
	05-06	*	< LOD	< LOD	< LOD	< LOD	1363
	07-08	*	< LOD	< LOD	< LOD	< LOD	1269
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	594
	05-06	*	< LOD	< LOD	< LOD	< LOD	673
	07-08	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	617
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	565
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1026
	05-06	*	< LOD	< LOD	< LOD	< LOD	997
	07-08	*	< LOD	< LOD	< LOD	< LOD	1068

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Sulfosulfuron (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2389
	05-06	*	< LOD	< LOD	< LOD	< LOD	2593
	07-08	*	< LOD	< LOD	< LOD	< LOD	2528
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	294
	05-06	*	< LOD	< LOD	< LOD	< LOD	344
	07-08	*	< LOD	< LOD	< LOD	< LOD	377
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	680
	05-06	*	< LOD	< LOD	< LOD	< LOD	708
	07-08	*	< LOD	< LOD	< LOD	< LOD	383
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1415
	05-06	*	< LOD	< LOD	< LOD	< LOD	1541
	07-08	*	< LOD	< LOD	< LOD	< LOD	1768
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1169
	05-06	*	< LOD	< LOD	< LOD	< LOD	1230
	07-08	*	< LOD	< LOD	< LOD	< LOD	1260
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1220
	05-06	*	< LOD	< LOD	< LOD	< LOD	1363
	07-08	*	< LOD	< LOD	< LOD	< LOD	1268
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	593
	05-06	*	< LOD	< LOD	< LOD	< LOD	673
	07-08	*	< LOD	< LOD	< LOD	< LOD	484
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	617
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	564
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1025
	05-06	*	< LOD	< LOD	< LOD	< LOD	997
	07-08	*	< LOD	< LOD	< LOD	< LOD	1068

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Thifensulfuron-methyl (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2355
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2495
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	370
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	677
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	375
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1387
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1750
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1145
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1252
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1210
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1243
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	566
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	479
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	616
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	542
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1022
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1056

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.08, 0.08, and 0.08 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Thifensulfuron-methyl (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2353
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2493
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	370
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	676
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	373
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1386
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1750
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1144
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1251
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1209
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1242
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	565
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	478
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	616
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	541
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1021
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1056

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Triasulfuron (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2250
	05-06	*	< LOD	< LOD	< LOD	< LOD	2557
	07-08	*	< LOD	< LOD	< LOD	< LOD	2530
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	278
	05-06	*	< LOD	< LOD	< LOD	< LOD	341
	07-08	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	643
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1329
	05-06	*	< LOD	< LOD	< LOD	< LOD	1521
	07-08	*	< LOD	< LOD	< LOD	< LOD	1767
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1101
	05-06	*	< LOD	< LOD	< LOD	< LOD	1210
	07-08	*	< LOD	< LOD	< LOD	< LOD	1265
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1149
	05-06	*	< LOD	< LOD	< LOD	< LOD	1347
	07-08	*	< LOD	< LOD	< LOD	< LOD	1265
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	549
	05-06	*	< LOD	< LOD	< LOD	< LOD	677
	07-08	*	< LOD	< LOD	< LOD	< LOD	488
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	580
	05-06	*	< LOD	< LOD	< LOD	< LOD	713
	07-08	*	< LOD	< LOD	< LOD	< LOD	547
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	973
	05-06	*	< LOD	< LOD	< LOD	< LOD	968
	07-08	*	< LOD	< LOD	< LOD	< LOD	1073

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.07, 0.07, and 0.07 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Triasulfuron (creatinine corrected) (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2248
	05-06	*	< LOD	< LOD	< LOD	< LOD	2557
	07-08	*	< LOD	< LOD	< LOD	< LOD	2528
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	278
	05-06	*	< LOD	< LOD	< LOD	< LOD	341
	07-08	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	642
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	383
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1328
	05-06	*	< LOD	< LOD	< LOD	< LOD	1521
	07-08	*	< LOD	< LOD	< LOD	< LOD	1767
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1100
	05-06	*	< LOD	< LOD	< LOD	< LOD	1210
	07-08	*	< LOD	< LOD	< LOD	< LOD	1264
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1148
	05-06	*	< LOD	< LOD	< LOD	< LOD	1347
	07-08	*	< LOD	< LOD	< LOD	< LOD	1264
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	548
	05-06	*	< LOD	< LOD	< LOD	< LOD	677
	07-08	*	< LOD	< LOD	< LOD	< LOD	487
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	580
	05-06	*	< LOD	< LOD	< LOD	< LOD	713
	07-08	*	< LOD	< LOD	< LOD	< LOD	546
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	972
	05-06	*	< LOD	< LOD	< LOD	< LOD	968
	07-08	*	< LOD	< LOD	< LOD	< LOD	1073

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Triflusulfuron-methyl (2003 – 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2427
	05-06	*	< LOD	< LOD	< LOD	< LOD	2562
	07-08	*	< LOD	< LOD	< LOD	< LOD	2494
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	302
	05-06	*	< LOD	< LOD	< LOD	< LOD	340
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1431
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1739
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1189
	05-06	*	< LOD	< LOD	< LOD	< LOD	1216
	07-08	*	< LOD	< LOD	< LOD	< LOD	1240
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1238
	05-06	*	< LOD	< LOD	< LOD	< LOD	1346
	07-08	*	< LOD	< LOD	< LOD	< LOD	1254
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	596
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	477
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	634
	05-06	*	< LOD	< LOD	< LOD	< LOD	699
	07-08	*	< LOD	< LOD	< LOD	< LOD	558
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1039
	05-06	*	< LOD	< LOD	< LOD	< LOD	972
	07-08	*	< LOD	< LOD	< LOD	< LOD	1053

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Triflusulfuron-methyl (creatinine corrected) (2003 -2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2425
	05-06	*	< LOD	< LOD	< LOD	< LOD	2562
	07-08	*	< LOD	< LOD	< LOD	< LOD	2492
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	302
	05-06	*	< LOD	< LOD	< LOD	< LOD	340
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	693
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1430
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1739
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1188
	05-06	*	< LOD	< LOD	< LOD	< LOD	1216
	07-08	*	< LOD	< LOD	< LOD	< LOD	1239
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1237
	05-06	*	< LOD	< LOD	< LOD	< LOD	1346
	07-08	*	< LOD	< LOD	< LOD	< LOD	1253
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	595
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	476
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	634
	05-06	*	< LOD	< LOD	< LOD	< LOD	699
	07-08	*	< LOD	< LOD	< LOD	< LOD	557
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1038
	05-06	*	< LOD	< LOD	< LOD	< LOD	972
	07-08	*	< LOD	< LOD	< LOD	< LOD	1053

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Carbofuranphenol (1999 - 2004)

Metabolite of Benfuracarb, Carbofuran, Carbosulfan, and Furathiocar

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	.770 (<LOD-1.30)	1994
	01-02	*	< LOD	< LOD	< LOD	< LOD	3030
	03-04	*	< LOD	< LOD	< LOD	< LOD	2390
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	.450 (<LOD-2.20)	482
	01-02	*	< LOD	< LOD	< LOD	< LOD	578
	03-04	*	< LOD	< LOD	< LOD	< LOD	293
12-19 years	99-00	*	< LOD	< LOD	< LOD	.570 (<LOD-1.20)	681
	01-02	*	< LOD	< LOD	< LOD	< LOD	827
	03-04	*	< LOD	< LOD	< LOD	< LOD	684
20-59 years	99-00	*	< LOD	< LOD	< LOD	.840 (<LOD-1.50)	831
	01-02	*	< LOD	< LOD	< LOD	< LOD	1125
	03-04	*	< LOD	< LOD	< LOD	< LOD	902
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	500
	03-04	*	< LOD	< LOD	< LOD	< LOD	511
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	.740 (<LOD-1.50)	973
	01-02	*	< LOD	< LOD	< LOD	< LOD	1423
	03-04	*	< LOD	< LOD	< LOD	< LOD	1164
Females	99-00	*	< LOD	< LOD	< LOD	.840 (<LOD-1.50)	1021
	01-02	*	< LOD	< LOD	< LOD	< LOD	1607
	03-04	*	< LOD	< LOD	< LOD	< LOD	1226
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	.590 (<LOD-2.00)	1.90 (<LOD-5.10)	696
	01-02	*	< LOD	< LOD	< LOD	< LOD	765
	03-04	*	< LOD	< LOD	< LOD	< LOD	568
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	.550 (<LOD-1.60)	521
	01-02	*	< LOD	< LOD	< LOD	< LOD	770
	03-04	*	< LOD	< LOD	< LOD	< LOD	613
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	.740 (<LOD-1.50)	603
	01-02	*	< LOD	< LOD	< LOD	< LOD	1272
	03-04	*	< LOD	< LOD	< LOD	< LOD	1054

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 0.4, 0.4, and 0.4 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Carbofuran_BiomonitoringSummary.html

Urinary Carbofuranphenol (creatinine corrected) (1999 - 2004)

Metabolite of Benfuracarb, Carbofuran, Carbosulfan, and Furathiocar

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	.778 (<LOD-1.00)	1994
	01-02	*	< LOD	< LOD	< LOD	< LOD	3029
	03-04	*	< LOD	< LOD	< LOD	< LOD	2388
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	.988 (<LOD-2.80)	482
	01-02	*	< LOD	< LOD	< LOD	< LOD	578
	03-04	*	< LOD	< LOD	< LOD	< LOD	293
12-19 years	99-00	*	< LOD	< LOD	< LOD	.482 (<LOD-.853)	681
	01-02	*	< LOD	< LOD	< LOD	< LOD	826
	03-04	*	< LOD	< LOD	< LOD	< LOD	683
20-59 years	99-00	*	< LOD	< LOD	< LOD	.875 (<LOD-1.06)	831
	01-02	*	< LOD	< LOD	< LOD	< LOD	1125
	03-04	*	< LOD	< LOD	< LOD	< LOD	901
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	500
	03-04	*	< LOD	< LOD	< LOD	< LOD	511
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	.667 (<LOD-1.08)	973
	01-02	*	< LOD	< LOD	< LOD	< LOD	1423
	03-04	*	< LOD	< LOD	< LOD	< LOD	1163
Females	99-00	*	< LOD	< LOD	< LOD	.881 (<LOD-1.13)	1021
	01-02	*	< LOD	< LOD	< LOD	< LOD	1606
	03-04	*	< LOD	< LOD	< LOD	< LOD	1225
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	.778 (<LOD-1.94)	1.83 (<LOD-4.16)	696
	01-02	*	< LOD	< LOD	< LOD	< LOD	765
	03-04	*	< LOD	< LOD	< LOD	< LOD	567
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	.700 (<LOD-1.08)	521
	01-02	*	< LOD	< LOD	< LOD	< LOD	769
	03-04	*	< LOD	< LOD	< LOD	< LOD	613
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	.737 (<LOD-.929)	603
	01-02	*	< LOD	< LOD	< LOD	< LOD	1272
	03-04	*	< LOD	< LOD	< LOD	< LOD	1053

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Carbofuran_BiomonitoringSummary.html

Urinary 2-Isopropoxyphenol (1999 - 2004)

Metabolite of Propoxur

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1917
	01-02	*	< LOD	< LOD	< LOD	< LOD	2994
	03-04	*	< LOD	< LOD	< LOD	< LOD	2387
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	456
	01-02	*	< LOD	< LOD	< LOD	< LOD	574
	03-04	*	< LOD	< LOD	< LOD	< LOD	295
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	655
	01-02	*	< LOD	< LOD	< LOD	< LOD	820
	03-04	*	< LOD	< LOD	< LOD	< LOD	686
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	806
	01-02	*	< LOD	< LOD	< LOD	< LOD	1109
	03-04	*	< LOD	< LOD	< LOD	< LOD	900
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	491
	03-04	*	< LOD	< LOD	< LOD	< LOD	506
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	936
	01-02	*	< LOD	< LOD	< LOD	< LOD	1406
	03-04	*	< LOD	< LOD	< LOD	< LOD	1161
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	981
	01-02	*	< LOD	< LOD	< LOD	< LOD	1588
	03-04	*	< LOD	< LOD	< LOD	< LOD	1226
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	664
	01-02	*	< LOD	< LOD	< LOD	< LOD	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	594
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	500
	01-02	*	< LOD	< LOD	< LOD	< LOD	770
	03-04	*	< LOD	< LOD	< LOD	< LOD	601
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	585
	01-02	*	< LOD	< LOD	< LOD	< LOD	1241
	03-04	*	< LOD	< LOD	< LOD	< LOD	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 1.1, 0.4, and 0.4 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Propoxur_BiomonitoringSummary.html

Urinary 2-Isopropoxyphenol (creatinine corrected) (1999 - 2004)

Metabolite of Propoxur

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1917
	01-02	*	< LOD	< LOD	< LOD	< LOD	2993
	03-04	*	< LOD	< LOD	< LOD	< LOD	2385
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	456
	01-02	*	< LOD	< LOD	< LOD	< LOD	574
	03-04	*	< LOD	< LOD	< LOD	< LOD	295
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	655
	01-02	*	< LOD	< LOD	< LOD	< LOD	819
	03-04	*	< LOD	< LOD	< LOD	< LOD	685
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	806
	01-02	*	< LOD	< LOD	< LOD	< LOD	1109
	03-04	*	< LOD	< LOD	< LOD	< LOD	899
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	491
	03-04	*	< LOD	< LOD	< LOD	< LOD	506
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	936
	01-02	*	< LOD	< LOD	< LOD	< LOD	1406
	03-04	*	< LOD	< LOD	< LOD	< LOD	1160
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	981
	01-02	*	< LOD	< LOD	< LOD	< LOD	1587
	03-04	*	< LOD	< LOD	< LOD	< LOD	1225
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	664
	01-02	*	< LOD	< LOD	< LOD	< LOD	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	593
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	500
	01-02	*	< LOD	< LOD	< LOD	< LOD	769
	03-04	*	< LOD	< LOD	< LOD	< LOD	601
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	585
	01-02	*	< LOD	< LOD	< LOD	< LOD	1241
	03-04	*	< LOD	< LOD	< LOD	< LOD	1040

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Propoxur_BiomonitoringSummary.html

Serum Aldrin (lipid adjusted) (2001 – 2004)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2275
	03-04	*	< LOD	< LOD	< LOD	< LOD	1946
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	< LOD	588
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1519
	03-04	*	< LOD	< LOD	< LOD	< LOD	1358
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1057
	03-04	*	< LOD	< LOD	< LOD	< LOD	946
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1218
	03-04	*	< LOD	< LOD	< LOD	< LOD	1000
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	559
	03-04	*	< LOD	< LOD	< LOD	< LOD	456
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	512
	03-04	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	881

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 5.94 and 7.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/AldrinDieldrin_BiomonitoringSummary.html

Serum Aldrin (whole weight) (2001 – 2004)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2275
	03-04	*	< LOD	< LOD	< LOD	< LOD	1946
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	< LOD	588
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1519
	03-04	*	< LOD	< LOD	< LOD	< LOD	1358
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1057
	03-04	*	< LOD	< LOD	< LOD	< LOD	946
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1218
	03-04	*	< LOD	< LOD	< LOD	< LOD	1000
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	559
	03-04	*	< LOD	< LOD	< LOD	< LOD	456
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	512
	03-04	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	881

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/AldrinDieldrin_BiomonitoringSummary.html

Serum Dieldrin (lipid adjusted) (2001 – 2004)

Also a Metabolite of Aldrin

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	**15.3** (14.5-17.4)	**20.3** (18.7-22.4)	2159
	03-04	*	< LOD	**9.00** (8.40-9.90)	**14.4** (12.1-16.4)	**19.0** (15.8-24.2)	1952
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	716
	03-04	*	< LOD	< LOD	< LOD	**9.10** (<LOD-16.4)	587
20 years and older	01-02	*	< LOD	**10.5** (<LOD-11.6)	**16.6** (15.1-18.2)	**21.3** (19.1-24.0)	1443
	03-04	*	< LOD	**9.50** (8.80-10.4)	**14.9** (12.8-17.0)	**19.5** (16.0-25.7)	1365
Gender							
Males	01-02	*	< LOD	< LOD	**15.7** (14.4-18.7)	**20.3** (18.6-24.0)	1007
	03-04	*	< LOD	**9.30** (8.40-10.8)	**15.1** (13.1-19.1)	**21.9** (14.9-38.5)	954
Females	01-02	*	< LOD	< LOD	**15.3** (13.4-17.2)	**19.8** (18.0-21.6)	1152
	03-04	*	< LOD	**8.70** (7.80-9.50)	**12.8** (11.2-15.4)	**16.9** (13.9-22.4)	998
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	**11.7** (<LOD-15.1)	**15.4** (12.7-19.1)	539
	03-04	*	< LOD	< LOD	**10.8** (9.00-14.1)	**14.0** (10.6-24.1)	456
Non-Hispanic blacks	01-02	*	< LOD	< LOD	**15.0** (11.8-19.1)	**20.6** (15.8-25.2)	484
	03-04	*	< LOD	**8.80** (<LOD-10.1)	**13.0** (10.5-15.8)	**15.9** (13.3-21.5)	487
Non-Hispanic whites	01-02	*	< LOD	< LOD	**15.6** (14.8-17.8)	**21.1** (18.9-23.6)	980
	03-04	*	< LOD	**9.30** (8.60-10.2)	**14.9** (12.5-17.5)	**19.7** (15.6-33.4)	885

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 7.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/AldrinDieldrin_BiomonitoringSummary.html

Serum Dieldrin (whole weight) (2001 – 2004)

Metabolite of Aldrin

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**< LOD**	**.110** (.100-.120)	**.150** (.130-.170)	2159
	03-04	*	**< LOD**	**.059** (.054-.064)	**.098** (.083-.112)	**.138** (.109-.177)	1952
Age group							
12-19 years	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	716
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.048** (<LOD-.093)	587
20 years and older	01-02	*	**< LOD**	**.070** (<LOD-.080)	**.120** (.110-.130)	**.160** (.140-.180)	1443
	03-04	*	**< LOD**	**.062** (.056-.069)	**.102** (.088-.117)	**.139** (.112-.182)	1365
Gender							
Males	01-02	*	**< LOD**	**< LOD**	**.120** (.100-.130)	**.160** (.130-.190)	1007
	03-04	*	**< LOD**	**.064** (.054-.075)	**.109** (.084-.138)	**.147** (.108-.242)	954
Females	01-02	*	**< LOD**	**< LOD**	**.100** (.090-.110)	**.140** (.120-.160)	1152
	03-04	*	**< LOD**	**.055** (.049-.060)	**.089** (.077-.100)	**.110** (.096-.147)	998
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**< LOD**	**.090** (<LOD-.100)	**.120** (.090-.140)	539
	03-04	*	**< LOD**	**< LOD**	**.077** (.062-.116)	**.113** (.073-.158)	456
Non-Hispanic blacks	01-02	*	**< LOD**	**< LOD**	**.090** (.070-.110)	**.130** (.090-.190)	484
	03-04	*	**< LOD**	**.053** (<LOD-.058)	**.080** (.063-.101)	**.103** (.080-.149)	487
Non-Hispanic whites	01-02	*	**< LOD**	**< LOD**	**.110** (.100-.130)	**.150** (.130-.180)	980
	03-04	*	**< LOD**	**.062** (.054-.070)	**.103** (.086-.124)	**.139** (.109-.202)	885

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/AldrinDieldrin_BiomonitoringSummary.html

Serum Endrin (lipid adjusted) (2001 – 2004)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	**5.10** (<LOD-5.40)	2187
	03-04	*	< LOD	< LOD	< LOD	< LOD	1825
Age group							
12-19 years	01-02	*	< LOD	< LOD	**5.20** (<LOD-5.50)	**5.60** (5.40-5.70)	730
	03-04	*	< LOD	< LOD	< LOD	< LOD	539
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1457
	03-04	*	< LOD	< LOD	< LOD	< LOD	1286
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	**5.20** (<LOD-5.40)	1022
	03-04	*	< LOD	< LOD	< LOD	< LOD	885
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1165
	03-04	*	< LOD	< LOD	< LOD	< LOD	940
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	**5.30** (<LOD-6.50)	547
	03-04	*	< LOD	< LOD	< LOD	< LOD	433
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	**5.40** (<LOD-6.30)	487
	03-04	*	< LOD	< LOD	< LOD	< LOD	446
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	**5.10** (<LOD-5.40)	1000
	03-04	*	< LOD	< LOD	< LOD	< LOD	831

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 5.09 and 7.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Endrin_BiomonitoringSummary.html

Serum Endrin (whole weight) (2001 – 2004)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	.020 (<LOD-.020)	2187
	03-04	*	< LOD	< LOD	< LOD	< LOD	1825
Age group							
12-19 years	01-02	*	< LOD	< LOD	.020 (<LOD-.020)	.020 (.020-.020)	730
	03-04	*	< LOD	< LOD	< LOD	< LOD	539
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1457
	03-04	*	< LOD	< LOD	< LOD	< LOD	1286
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	.020 (<LOD-.020)	1022
	03-04	*	< LOD	< LOD	< LOD	< LOD	885
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1165
	03-04	*	< LOD	< LOD	< LOD	< LOD	940
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	.020 (<LOD-.020)	547
	03-04	*	< LOD	< LOD	< LOD	< LOD	433
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	.020 (<LOD-.020)	487
	03-04	*	< LOD	< LOD	< LOD	< LOD	446
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	.020 (<LOD-.020)	1000
	03-04	*	< LOD	< LOD	< LOD	< LOD	831

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Endrin_BiomonitoringSummary.html

Serum Heptachlor epoxide (lipid adjusted) (1999 – 2004)

Metabolite of Heptachlor

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**15.4** (<LOD-19.8)	**24.0** (15.1-38.8)	1589
	01-02	*	< LOD	< LOD	**14.8** (13.0-17.8)	**21.8** (18.2-27.3)	2259
	03-04	*	< LOD	< LOD	**13.4** (11.1-15.9)	**18.9** (15.9-23.0)	1963
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	638
	01-02	*	< LOD	< LOD	< LOD	< LOD	741
	03-04	*	< LOD	< LOD	< LOD	< LOD	592
20 years and older	99-00	*	< LOD	< LOD	**17.8** (<LOD-23.9)	**27.1** (16.8-46.1)	951
	01-02	*	< LOD	< LOD	**15.7** (13.7-18.8)	**23.1** (19.1-29.1)	1518
	03-04	*	< LOD	**8.20** (<LOD-9.50)	**14.5** (11.6-17.6)	**20.6** (16.8-24.0)	1371
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**19.6** (<LOD-27.2)	760
	01-02	*	< LOD	< LOD	**13.9** (12.0-17.8)	**20.8** (15.9-25.3)	1047
	03-04	*	< LOD	< LOD	**13.4** (11.2-16.4)	**18.6** (16.6-21.3)	956
Females	99-00	*	< LOD	< LOD	**18.2** (<LOD-25.2)	**27.7** (16.0-54.3)	829
	01-02	*	< LOD	< LOD	**15.6** (13.3-18.2)	**23.2** (18.9-29.8)	1212
	03-04	*	< LOD	< LOD	**13.5** (11.0-16.8)	**19.6** (14.8-24.5)	1007
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	**15.3** (<LOD-25.6)	**22.2** (<LOD-62.3)	598
	01-02	*	< LOD	< LOD	**13.2** (<LOD-16.3)	**16.8** (13.8-23.1)	553
	03-04	*	< LOD	< LOD	**10.6** (8.10-13.5)	**13.7** (10.9-16.5)	460
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	**19.5** (<LOD-32.4)	336
	01-02	*	< LOD	< LOD	**14.6** (11.7-19.0)	**21.5** (18.2-27.3)	503
	03-04	*	< LOD	< LOD	**13.5** (10.1-16.8)	**18.6** (12.7-25.2)	490
Non-Hispanic whites	99-00	*	< LOD	< LOD	**16.5** (<LOD-21.8)	**26.4** (<LOD-54.3)	539
	01-02	*	< LOD	< LOD	**15.3** (13.0-19.6)	**22.8** (18.9-29.8)	1041
	03-04	*	< LOD	**7.90** (<LOD-9.40)	**14.0** (11.2-17.6)	**20.4** (15.8-24.5)	888

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 14.6, 10.5, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum Heptachlor epoxide (whole weight) (1999 – 2004)

Metabolite of Heptachlor

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.110 (<LOD-.140)	.180 (.110-.220)	1589
	01-02	*	< LOD	< LOD	.100 (.090-.120)	.150 (.130-.180)	2259
	03-04	*	< LOD	< LOD	.094 (.076-.108)	.128 (.108-.161)	1963
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	638
	01-02	*	< LOD	< LOD	< LOD	< LOD	741
	03-04	*	< LOD	< LOD	< LOD	< LOD	592
20 years and older	99-00	*	< LOD	< LOD	.130 (<LOD-.170)	.190 (.130-.270)	951
	01-02	*	< LOD	< LOD	.110 (.090-.140)	.170 (.140-.190)	1518
	03-04	*	< LOD	.057 (<LOD-.063)	.101 (.082-.116)	.135 (.113-.173)	1371
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	.150 (<LOD-.180)	760
	01-02	*	< LOD	< LOD	.100 (.090-.120)	.150 (.110-.180)	1047
	03-04	*	< LOD	< LOD	.094 (.077-.111)	.126 (.106-.149)	956
Females	99-00	*	< LOD	< LOD	.120 (<LOD-.190)	.200 (.120-.310)	829
	01-02	*	< LOD	< LOD	.100 (.090-.130)	.170 (.130-.200)	1212
	03-04	*	< LOD	< LOD	.096 (.071-.108)	.133 (.107-.173)	1007
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	.100 (<LOD-.170)	.170 (<LOD-.380)	598
	01-02	*	< LOD	< LOD	.090 (<LOD-.110)	.120 (.100-.240)	553
	03-04	*	< LOD	< LOD	.069 (.053-.097)	.098 (.074-.113)	460
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	.110 (<LOD-.200)	336
	01-02	*	< LOD	< LOD	.090 (.070-.110)	.130 (.100-.180)	503
	03-04	*	< LOD	< LOD	.087 (.067-.104)	.110 (.090-.157)	490
Non-Hispanic whites	99-00	*	< LOD	< LOD	.120 (<LOD-.170)	.180 (<LOD-.310)	539
	01-02	*	< LOD	< LOD	.100 (.090-.130)	.170 (.130-.190)	1041
	03-04	*	< LOD	.055 (<LOD-.063)	.101 (.077-.117)	.135 (.111-.180)	888

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum *o,p'*-Dichlorodiphenyltrichloroethane (DDT) (lipid adjusted) (1999 – 2004)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1669
	01-02	*	< LOD	< LOD	< LOD	< LOD	2279
	03-04	*	< LOD	< LOD	< LOD	< LOD	1946
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	< LOD	588
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1002
	01-02	*	< LOD	< LOD	< LOD	< LOD	1523
	03-04	*	< LOD	< LOD	< LOD	< LOD	1358
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	796
	01-02	*	< LOD	< LOD	< LOD	< LOD	1059
	03-04	*	< LOD	< LOD	< LOD	< LOD	949
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	873
	01-02	*	< LOD	< LOD	< LOD	< LOD	1220
	03-04	*	< LOD	< LOD	< LOD	< LOD	997
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	632
	01-02	*	< LOD	< LOD	< LOD	< LOD	565
	03-04	*	< LOD	< LOD	< LOD	< LOD	458
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	354
	01-02	*	< LOD	< LOD	< LOD	< LOD	507
	03-04	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	560
	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	880

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 20.7, 17.4, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *o,p'*-Dichlorodiphenyltrichloroethane (DDT) (whole weight) (1999 – 2004)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1669
	01-02	*	< LOD	< LOD	< LOD	< LOD	2279
	03-04	*	< LOD	< LOD	< LOD	< LOD	1946
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	< LOD	588
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1002
	01-02	*	< LOD	< LOD	< LOD	< LOD	1523
	03-04	*	< LOD	< LOD	< LOD	< LOD	1358
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	796
	01-02	*	< LOD	< LOD	< LOD	< LOD	1059
	03-04	*	< LOD	< LOD	< LOD	< LOD	949
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	873
	01-02	*	< LOD	< LOD	< LOD	< LOD	1220
	03-04	*	< LOD	< LOD	< LOD	< LOD	997
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	632
	01-02	*	< LOD	< LOD	< LOD	< LOD	565
	03-04	*	< LOD	< LOD	< LOD	< LOD	458
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	354
	01-02	*	< LOD	< LOD	< LOD	< LOD	507
	03-04	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	560
	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	880

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenol (2003 – 2010)

Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	**.100** (.100-.100)	**.200** (.200-.300)	**.400** (.300-.400)	2525
	05-06	*	< LOD	**.100** (.100-.200)	**.300** (.200-.300)	**.400** (.300-.500)	2548
	07-08	*	< LOD	**.100** (<LOD-.100)	**.200** (.200-.200)	**.300** (.200-.300)	2604
	09-10	*	< LOD	< LOD	**.200** (.200-.200)	**.300** (.200-.300)	2749
Age group							
6-11 years	03-04	*	< LOD	**.100** (.100-.200)	**.200** (.200-.300)	**.300** (.200-.500)	314
	05-06	*	< LOD	**.100** (.100-.200)	**.300** (.200-.400)	**.400** (.300-.500)	356
	07-08	*	< LOD	**.100** (<LOD-.100)	**.200** (.100-.300)	**.300** (.200-.500)	389
	09-10	*	< LOD	< LOD	**.200** (.100-.200)	**.200** (.200-.300)	415
12-19 years	03-04	*	< LOD	**.100** (.100-.200)	**.200** (.200-.300)	**.300** (.200-.500)	722
	05-06	*	< LOD	**.100** (.100-.200)	**.300** (.200-.300)	**.400** (.300-.500)	702
	07-08	*	< LOD	**.100** (<LOD-.100)	**.200** (.100-.200)	**.200** (.200-.500)	401
	09-10	*	< LOD	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.500)	420
20 years and older	03-04	*	< LOD	**.100** (.100-.100)	**.300** (.200-.300)	**.400** (.300-.500)	1489
	05-06	*	< LOD	**.100** (.100-.200)	**.300** (.200-.300)	**.400** (.300-.500)	1490
	07-08	*	< LOD	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.400)	1814
	09-10	*	< LOD	< LOD	**.200** (.200-.200)	**.300** (.200-.300)	1914
Gender							
Males	03-04	*	< LOD	**.100** (.100-.100)	**.200** (.200-.300)	**.400** (.300-.400)	1231
	05-06	*	< LOD	**.100** (.100-.200)	**.200** (.200-.300)	**.400** (.300-.500)	1270
	07-08	*	< LOD	**.100** (<LOD-.100)	**.200** (.200-.200)	**.300** (.200-.300)	1294
	09-10	*	< LOD	< LOD	**.200** (.200-.200)	**.300** (.200-.300)	1399
Females	03-04	*	< LOD	**.100** (.100-.200)	**.200** (.200-.300)	**.400** (.300-.400)	1294
	05-06	*	< LOD	**.100** (.100-.200)	**.300** (.200-.400)	**.500** (.300-.500)	1278
	07-08	*	< LOD	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.400)	1310
	09-10	*	< LOD	**.100** (<LOD-.100)	**.200** (.200-.200)	**.300** (.200-.300)	1350
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	**.100** (<LOD-.200)	**.200** (.200-.300)	**.300** (.200-.400)	617
	05-06	*	< LOD	**.100** (<LOD-.200)	**.300** (.200-.300)	**.400** (.300-.500)	637
	07-08	*	< LOD	< LOD	**.200** (.100-.200)	**.200** (.200-.300)	531
	09-10	*	< LOD	< LOD	**.100** (<LOD-.200)	**.200** (.100-.300)	566
Non-Hispanic blacks	03-04	*	< LOD	**.200** (.100-.200)	**.300** (.200-.500)	**.400** (.300-.700)	636
	05-06	*	< LOD	**.200** (.100-.200)	**.300** (.200-.400)	**.500** (.300-.500)	678
	07-08	*	< LOD	**.100** (.100-.200)	**.200** (.200-.300)	**.400** (.300-.500)	597
	09-10	*	< LOD	**.100** (<LOD-.100)	**.200** (.200-.200)	**.200** (.200-.300)	516
Non-Hispanic whites	03-04	*	< LOD	**.100** (.100-.100)	**.200** (.200-.300)	**.400** (.300-.400)	1077
	05-06	*	< LOD	**.100** (.100-.200)	**.300** (.200-.300)	**.400** (.300-.600)	1038
	07-08	*	< LOD	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.400)	1077
	09-10	*	< LOD	< LOD	**.200** (.200-.200)	**.300** (.200-.300)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.1, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Trichlorophenols_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenol (creatinine corrected) (2003 – 2010)

Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	**.170** (.160-.180)	**.280** (.260-.310)	**.370** (.330-.420)	2522
	05-06	*	< LOD	**.160** (.150-.180)	**.290** (.260-.320)	**.410** (.360-.450)	2548
	07-08	*	< LOD	**.150** (<LOD-.160)	**.280** (.230-.320)	**.390** (.330-.470)	2604
	09-10	*	< LOD	< LOD	**.260** (.240-.280)	**.350** (.320-.390)	2749
Age group							
6-11 years	03-04	*	< LOD	**.180** (.150-.230)	**.290** (.250-.320)	**.370** (.310-.540)	314
	05-06	*	< LOD	**.180** (.140-.200)	**.310** (.210-.450)	**.450** (.320-.610)	356
	07-08	*	< LOD	**.180** (<LOD-.190)	**.270** (.210-.390)	**.430** (.270-.580)	389
	09-10	*	< LOD	< LOD	**.320** (.240-.350)	**.390** (.320-.470)	415
12-19 years	03-04	*	< LOD	**.120** (.100-.140)	**.200** (.170-.220)	**.240** (.220-.280)	720
	05-06	*	< LOD	**.120** (.110-.130)	**.210** (.180-.240)	**.290** (.240-.330)	702
	07-08	*	< LOD	**.100** (<LOD-.120)	**.170** (.150-.210)	**.250** (.170-.310)	401
	09-10	*	< LOD	**.110** (<LOD-.130)	**.190** (.150-.250)	**.280** (.190-.380)	420
20 years and older	03-04	*	< LOD	**.180** (.160-.180)	**.290** (.270-.320)	**.390** (.350-.470)	1488
	05-06	*	< LOD	**.170** (.150-.190)	**.300** (.260-.330)	**.410** (.370-.470)	1490
	07-08	*	< LOD	**.150** (<LOD-.180)	**.290** (.230-.350)	**.410** (.340-.500)	1814
	09-10	*	< LOD	< LOD	**.270** (.240-.280)	**.350** (.320-.410)	1914
Gender							
Males	03-04	*	< LOD	**.130** (.110-.150)	**.230** (.190-.260)	**.320** (.270-.350)	1230
	05-06	*	< LOD	**.130** (.120-.140)	**.220** (.190-.240)	**.310** (.260-.360)	1270
	07-08	*	< LOD	**.110** (<LOD-.120)	**.190** (.180-.230)	**.300** (.230-.340)	1294
	09-10	*	< LOD	< LOD	**.210** (.190-.230)	**.280** (.240-.330)	1399
Females	03-04	*	< LOD	**.200** (.180-.210)	**.320** (.290-.350)	**.440** (.350-.510)	1292
	05-06	*	< LOD	**.210** (.180-.230)	**.350** (.300-.410)	**.470** (.410-.550)	1278
	07-08	*	< LOD	**.190** (<LOD-.230)	**.330** (.280-.410)	**.470** (.370-.580)	1310
	09-10	*	< LOD	**.180** (<LOD-.190)	**.300** (.280-.330)	**.420** (.330-.470)	1350
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	**.140** (<LOD-.150)	**.240** (.200-.280)	**.330** (.280-.460)	616
	05-06	*	< LOD	**.140** (<LOD-.160)	**.240** (.190-.320)	**.350** (.290-.380)	637
	07-08	*	< LOD	< LOD	**.210** (.180-.250)	**.270** (.240-.320)	531
	09-10	*	< LOD	< LOD	**.190** (<LOD-.230)	**.290** (.220-.330)	566
Non-Hispanic blacks	03-04	*	< LOD	**.120** (.100-.150)	**.230** (.170-.290)	**.310** (.230-.390)	635
	05-06	*	< LOD	**.110** (.100-.140)	**.210** (.170-.260)	**.320** (.260-.360)	678
	07-08	*	< LOD	**.120** (.100-.140)	**.200** (.170-.250)	**.290** (.230-.420)	597
	09-10	*	< LOD	**.090** (<LOD-.110)	**.160** (.130-.200)	**.220** (.160-.380)	516
Non-Hispanic whites	03-04	*	< LOD	**.180** (.160-.190)	**.290** (.260-.320)	**.370** (.340-.440)	1076
	05-06	*	< LOD	**.180** (.160-.190)	**.300** (.270-.350)	**.410** (.360-.500)	1038
	07-08	*	< LOD	**.160** (<LOD-.190)	**.300** (.250-.360)	**.440** (.330-.510)	1077
	09-10	*	< LOD	< LOD	**.280** (.250-.320)	**.370** (.330-.410)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Trichlorophenols_BiomonitoringSummary.html

Urinary 2,4,6-Trichlorophenol (2003 – 2010)

Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	.500 (<LOD-.600)	1.00 (.800-1.20)	1.40 (1.20-1.80)	2525
	05-06	*	< LOD	.600 (<LOD-.700)	1.00 (.800-1.20)	1.40 (1.20-1.80)	2548
	07-08	*	< LOD	< LOD	.800 (.700-.900)	1.20 (1.00-1.30)	2604
	09-10	*	< LOD	.500 (<LOD-.600)	.800 (.700-.900)	1.10 (1.00-1.40)	2749
Age group							
6-11 years	03-04	*	< LOD	.600 (.500-.700)	1.10 (.800-1.40)	1.90 (1.10-3.10)	314
	05-06	*	< LOD	.700 (.600-.900)	1.30 (1.00-2.30)	2.70 (1.30-5.40)	356
	07-08	*	< LOD	.600 (<LOD-.700)	1.10 (.900-1.40)	1.60 (1.30-2.10)	389
	09-10	*	< LOD	.500 (<LOD-.600)	.900 (.700-1.20)	1.30 (.900-2.20)	415
12-19 years	03-04	*	< LOD	.600 (.500-.800)	1.20 (.900-1.70)	1.80 (1.50-2.10)	722
	05-06	*	< LOD	.600 (<LOD-.800)	1.00 (.800-1.30)	1.30 (1.20-1.70)	702
	07-08	*	< LOD	.600 (<LOD-.700)	.800 (.700-1.10)	1.10 (.800-1.70)	401
	09-10	*	< LOD	.600 (<LOD-.700)	.900 (.700-1.30)	1.30 (.900-1.90)	420
20 years and older	03-04	*	< LOD	.500 (<LOD-.600)	1.00 (.800-1.10)	1.30 (1.10-1.70)	1489
	05-06	*	< LOD	.600 (<LOD-.700)	1.00 (.800-1.20)	1.30 (1.20-1.80)	1490
	07-08	*	< LOD	< LOD	.800 (.700-.900)	1.10 (.900-1.30)	1814
	09-10	*	< LOD	< LOD	.800 (.700-.900)	1.10 (1.00-1.20)	1914
Gender							
Males	03-04	*	< LOD	.600 (<LOD-.600)	1.00 (.800-1.10)	1.30 (1.10-1.80)	1231
	05-06	*	< LOD	.600 (<LOD-.800)	1.10 (.900-1.30)	1.60 (1.20-2.00)	1270
	07-08	*	< LOD	.500 (<LOD-.600)	.900 (.700-1.00)	1.20 (1.10-1.40)	1294
	09-10	*	< LOD	< LOD	.800 (.700-.900)	1.10 (1.00-1.20)	1399
Females	03-04	*	< LOD	.500 (<LOD-.600)	1.10 (.900-1.20)	1.40 (1.10-2.00)	1294
	05-06	*	< LOD	.500 (<LOD-.600)	.900 (.800-1.20)	1.30 (1.10-1.70)	1278
	07-08	*	< LOD	< LOD	.800 (.700-.900)	1.10 (.900-1.40)	1310
	09-10	*	< LOD	.500 (<LOD-.600)	.800 (.700-1.00)	1.10 (.900-1.60)	1350
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	.700 (.600-.800)	1.20 (1.10-1.60)	1.80 (1.30-2.00)	617
	05-06	*	< LOD	.600 (.500-.700)	1.00 (.800-1.20)	1.30 (1.20-1.70)	637
	07-08	*	< LOD	< LOD	.700 (.700-.900)	1.00 (.900-1.20)	531
	09-10	*	< LOD	.500 (<LOD-.600)	.900 (.700-1.10)	1.10 (.900-1.30)	566
Non-Hispanic blacks	03-04	*	< LOD	.900 (.700-1.00)	1.40 (1.10-1.90)	2.00 (1.50-2.70)	636
	05-06	*	< LOD	.800 (.700-1.10)	1.50 (1.20-1.90)	2.20 (1.60-3.30)	678
	07-08	*	< LOD	.600 (.500-.600)	1.00 (.900-1.10)	1.30 (1.10-1.60)	597
	09-10	*	< LOD	.700 (.600-.800)	1.10 (.900-1.30)	1.50 (1.20-2.00)	516
Non-Hispanic whites	03-04	*	< LOD	< LOD	.800 (.700-1.00)	1.20 (1.00-1.50)	1077
	05-06	*	< LOD	.500 (<LOD-.700)	.900 (.700-1.30)	1.30 (1.10-1.80)	1038
	07-08	*	< LOD	< LOD	.800 (.700-.900)	1.20 (1.00-1.40)	1077
	09-10	*	< LOD	< LOD	.700 (.600-.900)	1.00 (.800-1.30)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.5, 0.5, 0.5, and 0.5 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Trichlorophenols_BiomonitoringSummary.html

Urinary 2,4,6-Trichlorophenol (creatinine corrected) (2003 – 2010)

Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	.710 (<LOD-.780)	1.25 (1.17-1.35)	1.75 (1.59-2.06)	2522
	05-06	*	< LOD	.720 (<LOD-.760)	1.27 (1.17-1.38)	1.75 (1.59-1.94)	2548
	07-08	*	< LOD	< LOD	1.25 (1.06-1.42)	1.75 (1.52-2.19)	2604
	09-10	*	< LOD	.710 (<LOD-.760)	1.21 (1.13-1.35)	1.67 (1.55-1.84)	2749
Age group							
6-11 years	03-04	*	< LOD	.920 (.850-1.13)	1.59 (1.22-1.91)	2.11 (1.46-4.55)	314
	05-06	*	< LOD	.880 (.740-1.06)	1.59 (1.21-2.06)	2.50 (1.61-5.20)	356
	07-08	*	< LOD	.900 (<LOD-.930)	1.46 (1.14-1.67)	2.33 (1.52-2.92)	389
	09-10	*	< LOD	.850 (<LOD-1.03)	1.59 (1.17-1.74)	1.85 (1.67-2.33)	415
12-19 years	03-04	*	< LOD	.580 (.510-.660)	.970 (.830-1.10)	1.21 (1.09-1.49)	720
	05-06	*	< LOD	.550 (<LOD-.630)	.970 (.690-1.17)	1.40 (1.08-1.59)	702
	07-08	*	< LOD	.550 (<LOD-.610)	.830 (.730-1.03)	1.30 (.930-1.48)	401
	09-10	*	< LOD	.590 (<LOD-.700)	.970 (.690-1.23)	1.23 (.920-1.66)	420
20 years and older	03-04	*	< LOD	.710 (<LOD-.770)	1.25 (1.17-1.35)	1.75 (1.59-2.00)	1488
	05-06	*	< LOD	.730 (<LOD-.780)	1.30 (1.17-1.40)	1.75 (1.57-2.06)	1490
	07-08	*	< LOD	< LOD	1.30 (1.06-1.46)	1.84 (1.52-2.33)	1814
	09-10	*	< LOD	< LOD	1.21 (1.13-1.35)	1.67 (1.52-1.94)	1914
Gender							
Males	03-04	*	< LOD	.560 (<LOD-.600)	.920 (.820-1.10)	1.30 (1.17-1.46)	1230
	05-06	*	< LOD	.600 (<LOD-.650)	1.00 (.850-1.13)	1.43 (1.25-1.59)	1270
	07-08	*	< LOD	.530 (<LOD-.600)	.930 (.830-1.06)	1.46 (1.18-1.59)	1294
	09-10	*	< LOD	< LOD	.980 (.850-1.12)	1.33 (1.13-1.59)	1399
Females	03-04	*	< LOD	.900 (<LOD-.960)	1.59 (1.35-1.75)	2.19 (1.75-2.63)	1292
	05-06	*	< LOD	.850 (<LOD-.970)	1.46 (1.30-1.67)	2.06 (1.67-2.50)	1278
	07-08	*	< LOD	< LOD	1.46 (1.23-1.75)	2.19 (1.67-2.50)	1310
	09-10	*	< LOD	.850 (<LOD-.920)	1.46 (1.30-1.59)	2.06 (1.62-2.33)	1350
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	.760 (.600-.900)	1.15 (.970-1.38)	1.59 (1.18-2.42)	616
	05-06	*	< LOD	.650 (.570-.700)	1.03 (.860-1.19)	1.46 (1.11-1.94)	637
	07-08	*	< LOD	< LOD	1.05 (.910-1.17)	1.35 (1.13-1.57)	531
	09-10	*	< LOD	.690 (<LOD-.760)	1.00 (.900-1.33)	1.67 (1.13-2.18)	566
Non-Hispanic blacks	03-04	*	< LOD	.600 (.560-.640)	.950 (.800-1.10)	1.34 (1.06-1.67)	635
	05-06	*	< LOD	.630 (.540-.740)	1.03 (.830-1.49)	1.59 (1.13-2.07)	678
	07-08	*	< LOD	.520 (.470-.620)	1.00 (.830-1.13)	1.40 (1.13-1.52)	597
	09-10	*	< LOD	.560 (.490-.610)	.830 (.750-.950)	1.17 (.920-1.52)	516
Non-Hispanic whites	03-04	*	< LOD	< LOD	1.30 (1.17-1.46)	1.75 (1.59-2.11)	1076
	05-06	*	< LOD	.760 (<LOD-.830)	1.35 (1.25-1.50)	1.79 (1.60-2.06)	1038
	07-08	*	< LOD	< LOD	1.35 (1.13-1.52)	1.84 (1.52-2.50)	1077
	09-10	*	< LOD	< LOD	1.30 (1.18-1.46)	1.73 (1.59-2.06)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Trichlorophenols_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenol (2003 – 2010)

Metabolite of other chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.04** (.895-1.21)	**.900** (.800-1.10)	**2.70** (2.30-3.10)	**8.80** (6.60-11.9)	**21.3** (14.1-29.5)	2525
	05-06	**.945** (.791-1.13)	**.800** (.700-1.00)	**2.00** (1.60-2.40)	**4.90** (3.90-6.30)	**11.9** (7.00-20.4)	2548
	07-08	**.970** (.852-1.11)	**.800** (.700-.900)	**1.80** (1.50-2.30)	**5.10** (3.80-7.60)	**12.6** (9.00-18.1)	2604
	09-10	**.803** (.729-.885)	**.700** (.700-.800)	**1.50** (1.40-1.70)	**4.00** (3.30-5.00)	**8.80** (6.40-15.7)	2749
Age group							
6-11 years	03-04	**1.01** (.796-1.28)	**.800** (.600-1.20)	**2.30** (1.70-3.20)	**7.70** (3.80-20.1)	**23.5** (9.40-31.0)	314
	05-06	**1.01** (.879-1.15)	**.800** (.800-1.10)	**2.00** (1.60-2.30)	**4.90** (3.30-6.60)	**9.80** (6.30-17.6)	356
	07-08	**1.04** (.778-1.39)	**.900** (.700-1.20)	**1.80** (1.20-2.80)	**5.90** (2.90-10.1)	**11.4** (6.60-20.7)	389
	09-10	**.975** (.768-1.24)	**.700** (.600-.900)	**1.80** (1.40-2.30)	**5.00** (3.20-8.40)	**14.2** (4.40-90.9)	415
12-19 years	03-04	**1.27** (.971-1.67)	**1.10** (.800-1.50)	**3.40** (2.50-5.00)	**13.6** (6.10-25.5)	**31.5** (14.5-85.0)	722
	05-06	**1.18** (.997-1.39)	**1.00** (.900-1.20)	**2.50** (2.00-3.10)	**5.50** (4.00-8.30)	**13.9** (7.10-33.6)	702
	07-08	**1.19** (.989-1.44)	**1.10** (.800-1.40)	**2.60** (2.00-3.00)	**5.60** (3.10-10.8)	**11.6** (5.70-36.5)	401
	09-10	**.967** (.794-1.18)	**.800** (.700-.900)	**1.60** (1.40-2.70)	**5.80** (3.70-10.1)	**14.4** (7.10-24.8)	420
20 years and older	03-04	**1.01** (.874-1.17)	**.900** (.700-1.10)	**2.60** (2.20-3.00)	**8.50** (6.60-10.4)	**19.4** (12.2-27.0)	1489
	05-06	**.907** (.737-1.12)	**.800** (.600-1.00)	**2.00** (1.50-2.40)	**4.90** (3.70-6.40)	**11.1** (6.50-20.9)	1490
	07-08	**.932** (.820-1.06)	**.800** (.700-.900)	**1.70** (1.40-2.20)	**5.00** (3.80-7.60)	**13.2** (9.20-18.1)	1814
	09-10	**.764** (.699-.836)	**.700** (.600-.700)	**1.40** (1.30-1.60)	**3.60** (3.10-4.50)	**8.00** (5.60-13.9)	1914
Gender							
Males	03-04	**1.22** (1.02-1.45)	**1.10** (.800-1.50)	**3.00** (2.50-3.50)	**9.40** (6.80-13.9)	**22.7** (13.6-40.9)	1231
	05-06	**1.16** (.973-1.37)	**1.00** (.900-1.20)	**2.40** (2.00-2.80)	**5.50** (4.40-7.90)	**12.9** (7.30-25.3)	1270
	07-08	**1.06** (.943-1.19)	**.900** (.800-1.00)	**1.90** (1.60-2.20)	**5.40** (3.90-8.20)	**13.6** (10.1-18.1)	1294
	09-10	**.879** (.789-.979)	**.800** (.700-.800)	**1.60** (1.40-1.80)	**4.00** (3.20-5.70)	**10.4** (5.20-18.4)	1399
Females	03-04	**.896** (.754-1.07)	**.800** (.600-.900)	**2.30** (2.00-2.70)	**8.10** (5.70-11.1)	**19.8** (12.0-27.5)	1294
	05-06	**.779** (.637-.954)	**.700** (.500-.800)	**1.50** (1.30-2.10)	**4.30** (2.80-6.20)	**9.40** (5.40-19.6)	1278
	07-08	**.893** (.750-1.06)	**.700** (.600-.800)	**1.80** (1.20-2.50)	**4.70** (3.10-8.00)	**11.9** (7.60-18.6)	1310
	09-10	**.737** (.659-.824)	**.600** (.600-.700)	**1.40** (1.30-1.70)	**4.00** (3.00-5.50)	**7.80** (5.80-15.8)	1350
Race/ethnicity							
Mexican Americans	03-04	**1.94** (1.46-2.56)	**1.70** (1.20-2.10)	**4.50** (2.80-9.30)	**26.9** (12.7-52.1)	**66.0** (47.5-84.2)	617
	05-06	**1.97** (1.49-2.59)	**1.60** (1.20-2.10)	**5.00** (3.30-6.60)	**20.9** (8.80-39.7)	**46.5** (21.9-79.5)	637
	07-08	**1.59** (.969-2.60)	**1.20** (.600-2.60)	**4.20** (2.10-9.50)	**13.4** (7.90-29.6)	**38.0** (16.4-74.0)	531
	09-10	**1.25** (.860-1.81)	**.900** (.700-1.30)	**2.70** (1.60-4.30)	**11.3** (4.30-26.3)	**29.1** (7.60-76.3)	566
Non-Hispanic blacks	03-04	**2.42** (1.92-3.06)	**2.20** (1.70-2.70)	**7.40** (4.00-9.60)	**20.8** (11.2-38.3)	**49.2** (24.0-69.7)	636
	05-06	**2.45** (1.93-3.12)	**2.10** (1.70-2.40)	**5.20** (3.90-7.40)	**20.3** (10.6-36.9)	**42.6** (21.3-129)	678
	07-08	**1.73** (1.49-2.01)	**1.40** (1.10-1.60)	**3.70** (2.90-4.90)	**17.8** (9.70-25.8)	**37.7** (24.6-56.8)	597
	09-10	**1.54** (1.06-2.23)	**1.20** (.800-2.00)	**3.10** (2.10-4.80)	**12.4** (4.30-46.4)	**35.2** (7.80-107)	516
Non-Hispanic whites	03-04	**.837** (.698-1.00)	**.700** (.600-.900)	**2.10** (1.70-2.60)	**6.20** (4.00-8.80)	**13.4** (8.60-22.0)	1077
	05-06	**.734** (.610-.883)	**.700** (.500-.900)	**1.40** (1.20-1.80)	**3.10** (2.70-3.90)	**5.30** (4.30-7.90)	1038
	07-08	**.817** (.732-.911)	**.700** (.600-.800)	**1.50** (1.20-1.80)	**3.10** (2.60-4.40)	**6.40** (4.60-8.80)	1077
	09-10	**.651** (.594-.712)	**.600** (.500-.700)	**1.30** (1.10-1.40)	**2.80** (2.20-3.50)	**5.60** (3.80-7.40)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.17, 0.2, 0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/24D_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenol (2011 - 2012)

Metabolite of Other Chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.695** (.619-.781)	**.600** (.600-.700)	**1.30** (1.10-1.60)	**3.50** (2.80-4.40)	**9.00** (5.60-13.0)	2489
Age group							
6-11 years	11-12	**.672** (.558-.810)	**.600** (.400-.700)	**1.10** (1.00-1.40)	**3.60** (1.90-5.50)	**11.3** (4.10-23.2)	396
12-19 years	11-12	**.711** (.591-.857)	**.600** (.500-.800)	**1.30** (1.00-1.50)	**3.30** (2.10-5.80)	**9.00** (4.10-13.0)	388
20 years and older	11-12	**.695** (.613-.789)	**.600** (.500-.700)	**1.30** (1.10-1.60)	**3.50** (2.80-4.60)	**9.00** (5.20-13.1)	1705
Gender							
Males	11-12	**.717** (.641-.802)	**.600** (.600-.700)	**1.30** (1.10-1.60)	**3.20** (2.20-4.40)	**7.10** (4.60-10.6)	1259
Females	11-12	**.675** (.581-.784)	**.600** (.500-.700)	**1.20** (1.00-1.60)	**3.80** (2.80-6.00)	**11.1** (4.90-24.3)	1230
Race/ethnicity							
Mexican Americans	11-12	**.895** (.720-1.11)	**.800** (.600-1.00)	**1.80** (1.30-2.60)	**6.60** (3.50-10.5)	**14.5** (7.40-27.0)	316
Non-Hispanic blacks	11-12	**1.23** (.965-1.57)	**.900** (.800-1.20)	**2.20** (1.60-3.30)	**6.90** (4.20-14.8)	**25.0** (8.40-53.6)	665
Non-Hispanic whites	11-12	**.577** (.514-.647)	**.500** (.500-.600)	**1.00** (.900-1.20)	**2.50** (1.70-3.70)	**4.90** (3.30-9.40)	813
All Hispanics	11-12	**.981** (.760-1.27)	**.800** (.600-1.00)	**2.10** (1.30-3.10)	**6.10** (3.90-13.0)	**15.9** (7.00-42.0)	571
Asians	11-12	**.621** (.478-.807)	**.500** (.400-.700)	**1.10** (.800-1.60)	**3.60** (1.70-7.10)	**11.1** (3.50-17.7)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/24D_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenol (creatinine corrected) (2003 – 2010)

Metabolite of other chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.02** (.873-1.18)	**.880** (.770-1.00)	**2.19** (1.84-2.73)	**7.39** (5.00-9.83)	**15.4** (11.1-20.9)	2522
	05-06	**.922** (.798-1.06)	**.750** (.660-.880)	**1.58** (1.33-1.86)	**4.00** (3.00-5.71)	**8.90** (5.98-16.6)	2548
	07-08	**.978** (.867-1.10)	**.790** (.700-.880)	**1.63** (1.36-1.89)	**4.00** (3.14-5.63)	**11.7** (6.82-18.9)	2604
	09-10	**.838** (.757-.929)	**.680** (.630-.740)	**1.33** (1.18-1.58)	**3.48** (2.77-4.55)	**8.17** (5.44-14.3)	2749
Age group							
6-11 years	03-04	**1.23** (.965-1.56)	**1.03** (.750-1.45)	**2.39** (1.82-3.36)	**9.29** (3.98-16.5)	**20.9** (12.9-38.1)	314
	05-06	**1.11** (.950-1.29)	**.970** (.800-1.08)	**1.74** (1.38-2.19)	**4.38** (3.33-7.80)	**10.9** (5.12-23.3)	356
	07-08	**1.28** (1.00-1.63)	**1.06** (.750-1.40)	**2.06** (1.44-3.21)	**4.49** (3.13-9.27)	**11.2** (5.70-24.4)	389
	09-10	**1.27** (.986-1.64)	**.930** (.820-1.20)	**2.03** (1.54-2.94)	**5.89** (3.50-11.0)	**15.9** (5.71-121)	415
12-19 years	03-04	**.954** (.725-1.26)	**.790** (.660-1.00)	**2.08** (1.44-3.75)	**8.02** (4.72-12.5)	**14.8** (8.02-40.0)	720
	05-06	**.878** (.765-1.01)	**.700** (.600-.800)	**1.65** (1.22-1.93)	**3.92** (2.90-4.82)	**8.28** (4.82-15.9)	702
	07-08	**.927** (.776-1.11)	**.790** (.640-1.00)	**1.51** (1.14-2.22)	**3.81** (2.38-5.92)	**10.3** (4.28-21.8)	401
	09-10	**.778** (.656-.921)	**.580** (.510-.690)	**1.18** (.970-1.40)	**3.38** (2.11-6.27)	**7.38** (3.39-19.4)	420
20 years and older	03-04	**1.00** (.863-1.16)	**.870** (.770-1.00)	**2.17** (1.80-2.69)	**7.16** (4.88-9.01)	**15.0** (10.6-20.8)	1488
	05-06	**.909** (.774-1.07)	**.740** (.650-.870)	**1.55** (1.25-1.89)	**4.00** (2.84-6.19)	**8.80** (5.71-16.8)	1490
	07-08	**.958** (.847-1.08)	**.770** (.670-.880)	**1.60** (1.32-1.85)	**3.98** (3.14-5.59)	**12.1** (8.15-18.9)	1814
	09-10	**.810** (.735-.892)	**.670** (.620-.730)	**1.27** (1.11-1.56)	**3.33** (2.65-4.23)	**7.64** (5.16-12.3)	1914
Gender							
Males	03-04	**.995** (.850-1.17)	**.900** (.730-1.06)	**2.23** (1.82-2.82)	**6.84** (4.54-9.01)	**13.7** (9.29-21.8)	1230
	05-06	**.927** (.814-1.06)	**.770** (.670-.880)	**1.60** (1.36-1.86)	**4.12** (3.08-5.45)	**8.90** (5.19-16.6)	1270
	07-08	**.891** (.808-.984)	**.720** (.660-.790)	**1.44** (1.29-1.67)	**4.00** (2.97-5.30)	**9.96** (6.82-13.4)	1294
	09-10	**.788** (.706-.879)	**.620** (.580-.660)	**1.25** (1.06-1.48)	**3.66** (2.52-5.47)	**7.69** (4.84-16.9)	1399
Females	03-04	**1.03** (.845-1.27)	**.870** (.770-1.00)	**2.17** (1.73-2.73)	**8.00** (4.57-12.1)	**17.2** (11.1-23.7)	1292
	05-06	**.916** (.770-1.09)	**.740** (.640-.880)	**1.56** (1.19-1.96)	**3.91** (2.66-6.50)	**8.93** (5.53-23.7)	1278
	07-08	**1.07** (.910-1.26)	**.850** (.720-1.00)	**1.75** (1.43-2.29)	**4.07** (3.13-7.65)	**14.4** (6.50-26.8)	1310
	09-10	**.890** (.789-1.00)	**.740** (.660-.850)	**1.41** (1.24-1.67)	**3.39** (2.76-4.52)	**8.79** (5.16-14.8)	1350
Race/ethnicity							
Mexican Americans	03-04	**1.76** (1.30-2.38)	**1.33** (1.04-1.74)	**3.85** (2.29-8.81)	**23.8** (10.6-51.6)	**71.4** (30.8-88.8)	616
	05-06	**1.77** (1.38-2.27)	**1.25** (.990-1.73)	**3.79** (2.70-5.35)	**16.6** (6.75-31.8)	**38.1** (23.8-55.3)	637
	07-08	**1.55** (.925-2.60)	**1.18** (.630-2.28)	**3.33** (1.93-6.50)	**14.2** (5.65-30.6)	**33.1** (16.6-60.0)	531
	09-10	**1.24** (.860-1.78)	**.910** (.630-1.28)	**2.03** (1.43-3.90)	**11.0** (3.54-26.4)	**26.4** (10.2-93.5)	566
Non-Hispanic blacks	03-04	**1.66** (1.28-2.16)	**1.47** (1.06-1.96)	**4.14** (2.46-7.31)	**14.9** (7.93-20.1)	**22.9** (16.7-45.0)	635
	05-06	**1.72** (1.39-2.14)	**1.32** (1.11-1.56)	**3.28** (2.33-5.35)	**14.9** (7.40-28.1)	**37.0** (15.0-83.4)	678
	07-08	**1.34** (1.14-1.59)	**.990** (.800-1.17)	**2.36** (1.85-3.12)	**13.1** (5.70-23.3)	**33.8** (22.7-41.1)	597
	09-10	**1.11** (.739-1.67)	**.890** (.630-1.19)	**2.07** (1.25-3.87)	**8.37** (2.99-22.0)	**22.0** (7.05-83.1)	516
Non-Hispanic whites	03-04	**.864** (.721-1.03)	**.780** (.690-.890)	**1.86** (1.54-2.23)	**5.08** (3.58-8.00)	**10.8** (6.84-18.2)	1076
	05-06	**.772** (.660-.904)	**.670** (.580-.790)	**1.25** (1.07-1.56)	**2.78** (2.11-3.52)	**4.82** (3.33-8.62)	1038
	07-08	**.853** (.765-.950)	**.730** (.660-.810)	**1.36** (1.14-1.67)	**2.97** (2.53-3.33)	**5.16** (3.84-9.38)	1077
	09-10	**.731** (.674-.793)	**.630** (.580-.690)	**1.13** (1.01-1.25)	**2.76** (2.29-3.30)	**5.16** (3.79-6.46)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/24D_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenol (creatinine corrected) (2011 - 2012)

Metabolite of Other Chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.791** (.706-.886)	**.614** (.560-.690)	**1.29** (1.08-1.48)	**3.33** (2.67-4.57)	**8.10** (5.65-11.2)	2487
Age group							
6-11 years	11-12	**.964** (.807-1.15)	**.741** (.620-.851)	**1.38** (1.07-1.61)	**3.51** (2.22-7.36)	**12.4** (5.13-34.9)	395
12-19 years	11-12	**.693** (.582-.825)	**.545** (.465-.678)	**1.15** (.875-1.50)	**2.73** (1.96-4.00)	**4.82** (3.06-9.75)	388
20 years and older	11-12	**.790** (.694-.898)	**.610** (.556-.675)	**1.30** (1.07-1.54)	**3.33** (2.55-4.77)	**8.33** (5.75-11.3)	1704
Gender							
Males	11-12	**.670** (.594-.756)	**.538** (.462-.609)	**1.08** (.903-1.27)	**2.89** (2.10-3.46)	**5.65** (4.26-7.63)	1258
Females	11-12	**.928** (.816-1.06)	**.714** (.634-.833)	**1.45** (1.27-1.76)	**4.02** (3.06-6.37)	**11.2** (6.37-18.1)	1229
Race/ethnicity							
Mexican Americans	11-12	**1.01** (.856-1.19)	**.788** (.620-1.04)	**1.67** (1.50-2.14)	**5.94** (3.50-9.36)	**14.7** (6.16-33.3)	316
Non-Hispanic blacks	11-12	**.959** (.766-1.20)	**.737** (.588-.851)	**1.56** (1.18-2.34)	**5.26** (3.00-15.0)	**19.9** (6.61-40.7)	665
Non-Hispanic whites	11-12	**.700** (.609-.805)	**.563** (.519-.619)	**1.08** (.885-1.33)	**2.89** (1.79-3.78)	**5.75** (3.27-9.67)	811
All Hispanics	11-12	**1.10** (.919-1.31)	**.870** (.700-1.12)	**2.00** (1.54-2.72)	**5.70** (3.96-9.26)	**14.7** (6.37-43.5)	571
Asians	11-12	**.832** (.629-1.10)	**.667** (.513-.952)	**1.42** (1.01-2.12)	**3.50** (2.31-7.82)	**8.00** (3.50-17.0)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/24D_BiomonitoringSummary.html

Urinary 2,5-Dichlorophenol (2003 – 2010)

Metabolite of 1,4-Dichlorobenzene (Paradichlorobenzene) and other chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**12.9** (10.1-16.3)	**10.5** (8.00-14.2)	**40.9** (29.8-54.7)	**190** (133-282)	**705** (342-1330)	2525
	05-06	**9.55** (6.67-13.7)	**8.10** (5.60-11.5)	**26.4** (19.0-36.6)	**111** (69.9-166)	**332** (175-794)	2548
	07-08	**9.04** (7.22-11.3)	**6.60** (5.50-8.30)	**25.7** (19.2-34.7)	**131** (90.2-222)	**473** (296-753)	2604
	09-10	**6.10** (4.94-7.53)	**4.70** (3.70-5.90)	**18.4** (13.3-26.0)	**101** (68.0-146)	**301** (168-618)	2749
Age group							
6-11 years	03-04	**12.5** (8.22-18.9)	**9.10** (5.60-17.4)	**42.1** (21.7-83.9)	**161** (111-626)	**928** (249-1640)	314
	05-06	**10.5** (8.29-13.4)	**7.80** (5.90-10.6)	**28.1** (17.8-40.2)	**104** (55.4-226)	**336** (189-785)	356
	07-08	**9.31** (6.20-14.0)	**6.50** (4.60-10.9)	**23.3** (12.2-45.6)	**151** (61.1-306)	**464** (222-934)	389
	09-10	**7.19** (4.36-11.8)	**4.80** (2.70-9.90)	**30.4** (12.4-50.7)	**146** (63.7-368)	**503** (103-4940)	415
12-19 years	03-04	**16.9** (11.1-26.0)	**11.5** (8.20-20.6)	**49.9** (26.8-94.0)	**233** (94.5-1060)	**1080** (287-3970)	722
	05-06	**11.9** (8.47-16.8)	**9.60** (6.40-16.7)	**36.0** (22.3-54.4)	**127** (89.9-160)	**459** (160-894)	702
	07-08	**11.3** (8.78-14.5)	**7.40** (6.20-9.10)	**30.1** (18.5-52.6)	**193** (66.7-448)	**611** (254-1560)	401
	09-10	**8.01** (5.53-11.6)	**4.80** (3.50-8.80)	**24.9** (19.1-42.7)	**191** (61.2-368)	**526** (243-1140)	420
20 years and older	03-04	**12.3** (9.97-15.3)	**10.4** (8.00-14.0)	**40.5** (30.1-49.2)	**181** (141-250)	**583** (316-924)	1489
	05-06	**9.12** (6.15-13.5)	**7.80** (5.20-11.5)	**24.9** (17.3-35.3)	**110** (62.9-183)	**327** (159-852)	1490
	07-08	**8.71** (6.83-11.1)	**6.60** (5.10-8.70)	**24.6** (18.8-34.5)	**124** (95.9-186)	**452** (286-672)	1814
	09-10	**5.75** (4.77-6.92)	**4.60** (3.70-5.70)	**16.9** (12.7-23.1)	**88.4** (66.4-117)	**266** (156-450)	1914
Gender							
Males	03-04	**14.9** (11.8-18.8)	**12.5** (9.00-16.5)	**40.5** (30.7-54.5)	**152** (120-259)	**631** (259-1950)	1231
	05-06	**12.0** (8.55-16.7)	**9.90** (7.80-13.8)	**29.0** (21.8-40.5)	**114** (71.7-200)	**396** (175-916)	1270
	07-08	**10.9** (8.86-13.4)	**8.30** (6.30-9.90)	**29.4** (23.2-39.6)	**139** (100-248)	**546** (311-727)	1294
	09-10	**7.09** (5.68-8.85)	**5.30** (4.40-6.70)	**21.9** (15.2-33.5)	**103** (63.3-191)	**311** (133-736)	1399
Females	03-04	**11.2** (8.51-14.7)	**8.50** (6.30-12.0)	**42.8** (26.0-64.2)	**212** (141-364)	**732** (371-1100)	1294
	05-06	**7.69** (5.17-11.4)	**5.90** (3.90-9.40)	**21.1** (14.3-35.7)	**110** (60.5-183)	**317** (141-794)	1278
	07-08	**7.57** (5.70-10.1)	**5.50** (4.40-7.30)	**20.6** (13.9-31.8)	**118** (57.4-268)	**442** (213-838)	1310
	09-10	**5.28** (4.17-6.69)	**3.90** (3.00-5.10)	**16.7** (12.1-22.1)	**99.5** (58.2-156)	**287** (158-591)	1350
Race/ethnicity							
Mexican Americans	03-04	**30.1** (19.2-47.2)	**23.7** (14.7-39.8)	**103** (57.4-156)	**841** (282-2040)	**2370** (2040-3710)	617
	05-06	**32.2** (22.2-46.7)	**23.0** (14.9-37.1)	**120** (69.6-228)	**867** (298-1320)	**1630** (916-3650)	637
	07-08	**22.2** (9.88-49.8)	**16.4** (5.40-60.7)	**104** (35.2-364)	**566** (313-1710)	**1920** (672-3460)	531
	09-10	**13.0** (5.80-29.1)	**10.3** (3.30-26.2)	**53.6** (19.4-199)	**361** (124-900)	**998** (247-3700)	566
Non-Hispanic blacks	03-04	**54.0** (35.9-81.2)	**43.9** (26.2-65.6)	**159** (97.0-338)	**817** (342-2330)	**2330** (887-3730)	636
	05-06	**43.9** (33.2-58.1)	**33.2** (25.3-47.6)	**161** (79.9-255)	**722** (360-1370)	**1700** (886-6440)	678
	07-08	**27.4** (21.3-35.2)	**18.5** (13.2-26.7)	**102** (61.9-147)	**682** (364-943)	**1490** (933-1870)	597
	09-10	**23.0** (13.0-40.8)	**17.3** (8.00-42.7)	**82.7** (38.6-168)	**443** (119-2180)	**1240** (273-4940)	516
Non-Hispanic whites	03-04	**8.94** (7.15-11.2)	**7.80** (6.30-9.40)	**25.9** (19.3-36.6)	**115** (61.8-171)	**255** (148-522)	1077
	05-06	**6.19** (4.18-9.17)	**5.90** (3.80-9.20)	**15.7** (11.4-21.9)	**43.7** (31.2-73.1)	**105** (62.2-166)	1038
	07-08	**6.24** (5.04-7.74)	**5.10** (4.20-6.20)	**15.4** (12.2-19.9)	**49.8** (37.0-90.2)	**142** (103-294)	1077
	09-10	**4.10** (3.22-5.21)	**3.30** (2.60-4.40)	**10.9** (8.10-15.5)	**45.5** (29.0-82.7)	**124** (79.3-215)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.12, 0.2, 0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/25D_BiomonitoringSummary.html

Urinary 2,5-Dichlorophenol (2011 - 2012)

Metabolite of 1,4-Dichlorobenzene (Paradichlorobenzene) and Other Chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**4.21** (3.15-5.62)	**3.10** (2.30-3.90)	**13.4** (9.40-18.9)	**69.9** (40.9-117)	**213** (121-404)	2489
Age group							
6-11 years	11-12	**3.45** (2.11-5.64)	**2.30** (1.60-3.30)	**9.20** (4.40-21.2)	**69.1** (27.8-168)	**369** (99.9-986)	396
12-19 years	11-12	**4.15** (2.43-7.10)	**3.20** (1.60-8.00)	**14.0** (7.30-28.8)	**55.7** (28.6-209)	**236** (71.2-468)	388
20 years and older	11-12	**4.31** (3.21-5.78)	**3.20** (2.30-4.10)	**14.2** (9.40-19.2)	**71.4** (39.5-118)	**198** (118-408)	1705
Gender							
Males	11-12	**4.42** (3.38-5.78)	**3.30** (2.40-4.50)	**13.2** (9.40-20.8)	**55.5** (37.1-106)	**194** (99.8-341)	1259
Females	11-12	**4.01** (2.86-5.61)	**2.80** (2.00-3.70)	**13.9** (9.20-17.7)	**83.3** (42.4-124)	**352** (117-614)	1230
Race/ethnicity							
Mexican Americans	11-12	**5.92** (3.36-10.4)	**4.00** (2.20-8.40)	**21.2** (14.2-42.7)	**178** (58.4-341)	**362** (119-1130)	316
Non-Hispanic blacks	11-12	**16.6** (10.4-26.2)	**13.4** (8.80-19.4)	**47.9** (24.9-100)	**227** (108-569)	**759** (341-2480)	665
Non-Hispanic whites	11-12	**2.78** (2.13-3.63)	**2.00** (1.60-2.50)	**7.40** (5.40-9.70)	**34.4** (18.1-67.6)	**112** (52.1-178)	813
All Hispanics	11-12	**7.96** (4.50-14.1)	**6.30** (3.20-14.9)	**29.1** (16.0-66.7)	**196** (84.1-399)	**536** (194-1630)	571
Asians	11-12	**3.77** (2.17-6.53)	**2.40** (1.40-5.40)	**13.0** (5.40-43.4)	**86.8** (38.6-160)	**378** (86.8-810)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/25D_BiomonitoringSummary.html

Urinary 2,5-Dichlorophenol (creatinine corrected) (2003 – 2010)

Metabolite of 1,4-Dichlorobenzene (Paradichlorobenzene) and other chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**12.5** (10.1-15.6)	**9.29** (7.25-12.5)	**34.4** (26.8-45.4)	**141** (100-251)	**578** (313-851)	2522
	05-06	**9.31** (6.70-12.9)	**7.32** (5.33-10.2)	**20.4** (14.8-30.5)	**89.3** (54.9-176)	**292** (176-640)	2548
	07-08	**9.12** (7.35-11.3)	**6.24** (5.00-7.77)	**24.2** (17.2-30.3)	**109** (70.8-175)	**409** (234-745)	2604
	09-10	**6.36** (5.07-7.99)	**4.12** (3.31-5.16)	**16.2** (11.7-22.8)	**80.2** (59.5-127)	**269** (144-505)	2749
Age group							
6-11 years	03-04	**15.2** (9.93-23.1)	**10.6** (5.87-26.7)	**44.7** (28.9-80.0)	**183** (95.3-617)	**830** (330-2150)	314
	05-06	**11.6** (8.90-15.1)	**8.00** (5.95-12.6)	**24.7** (16.8-37.8)	**129** (55.8-242)	**419** (151-709)	356
	07-08	**11.5** (7.95-16.5)	**7.70** (5.41-11.7)	**29.5** (19.6-50.9)	**131** (59.9-239)	**420** (170-1110)	389
	09-10	**9.36** (5.65-15.5)	**6.25** (4.09-9.60)	**33.9** (12.6-65.0)	**177** (66.1-496)	**536** (111-5950)	415
12-19 years	03-04	**12.7** (8.50-18.9)	**9.05** (6.17-13.3)	**34.8** (18.6-67.0)	**177** (67.0-516)	**549** (187-2120)	720
	05-06	**8.88** (6.34-12.4)	**6.91** (4.15-11.1)	**23.4** (17.7-30.0)	**78.0** (58.5-112)	**279** (112-659)	702
	07-08	**8.79** (6.81-11.4)	**5.56** (4.42-7.50)	**20.9** (13.8-34.9)	**130** (41.8-251)	**353** (158-799)	401
	09-10	**6.44** (4.40-9.42)	**4.05** (2.34-8.69)	**19.4** (11.6-37.7)	**121** (49.3-218)	**257** (119-1180)	420
20 years and older	03-04	**12.2** (10.1-14.8)	**9.13** (7.25-12.4)	**32.7** (26.7-42.9)	**140** (103-203)	**552** (283-838)	1488
	05-06	**9.15** (6.43-13.0)	**7.29** (5.29-10.0)	**19.6** (14.2-30.4)	**90.7** (48.5-197)	**274** (163-701)	1490
	07-08	**8.94** (7.07-11.3)	**6.15** (4.93-8.00)	**24.3** (16.6-30.6)	**101** (70.0-162)	**422** (234-729)	1814
	09-10	**6.09** (4.97-7.45)	**3.97** (3.27-4.78)	**14.7** (11.0-20.5)	**72.5** (56.6-97.2)	**261** (141-446)	1914
Gender							
Males	03-04	**12.2** (9.73-15.3)	**9.65** (7.23-12.7)	**32.7** (25.3-39.1)	**108** (79.0-183)	**358** (161-1080)	1230
	05-06	**9.60** (7.17-12.9)	**8.11** (5.95-10.5)	**20.5** (15.9-28.2)	**74.9** (50.5-141)	**249** (137-534)	1270
	07-08	**9.17** (7.63-11.0)	**6.24** (5.22-7.81)	**25.5** (19.7-32.4)	**110** (70.7-167)	**353** (234-572)	1294
	09-10	**6.36** (5.04-8.02)	**4.21** (3.36-4.97)	**16.7** (11.7-24.0)	**83.2** (53.7-141)	**280** (111-727)	1399
Females	03-04	**12.9** (9.91-16.8)	**8.95** (6.98-13.2)	**37.1** (26.7-56.9)	**209** (124-362)	**660** (408-940)	1292
	05-06	**9.04** (6.18-13.2)	**6.60** (4.56-10.4)	**20.4** (14.1-33.8)	**104** (55.8-199)	**309** (149-933)	1278
	07-08	**9.07** (6.91-11.9)	**6.08** (4.71-8.04)	**22.4** (14.7-30.6)	**107** (59.2-216)	**509** (185-908)	1310
	09-10	**6.37** (4.92-8.25)	**4.10** (3.09-5.69)	**15.6** (11.3-22.1)	**77.1** (53.3-148)	**267** (151-481)	1350
Race/ethnicity							
Mexican Americans	03-04	**27.3** (17.4-42.9)	**17.8** (9.86-36.3)	**79.8** (45.8-138)	**809** (196-2110)	**2200** (1250-2480)	616
	05-06	**29.0** (20.5-41.0)	**18.6** (12.9-27.3)	**99.4** (61.6-165)	**675** (296-1400)	**1680** (718-2720)	637
	07-08	**21.6** (9.44-49.6)	**16.4** (5.09-58.9)	**83.9** (30.8-281)	**572** (182-1490)	**1490** (700-2220)	531
	09-10	**12.9** (5.78-28.8)	**9.12** (3.38-26.7)	**45.0** (17.3-236)	**460** (105-1000)	**1000** (380-2800)	566
Non-Hispanic blacks	03-04	**37.1** (24.3-56.7)	**27.4** (17.5-47.7)	**103** (63.8-216)	**609** (248-1210)	**1240** (627-2430)	635
	05-06	**30.9** (23.6-40.3)	**20.5** (17.3-29.1)	**104** (57.7-180)	**480** (294-1080)	**1480** (515-3100)	678
	07-08	**21.3** (16.2-27.9)	**14.6** (10.2-19.7)	**64.6** (48.0-101)	**529** (217-884)	**1130** (793-1560)	597
	09-10	**16.7** (9.19-30.2)	**12.5** (6.74-22.0)	**58.9** (22.3-106)	**349** (92.6-878)	**878** (277-3890)	516
Non-Hispanic whites	03-04	**9.24** (7.48-11.4)	**7.14** (5.67-8.76)	**24.8** (18.7-31.7)	**79.7** (50.2-141)	**216** (124-516)	1076
	05-06	**6.52** (4.51-9.43)	**5.60** (3.86-8.51)	**14.1** (10.7-19.7)	**40.2** (28.4-61.6)	**110** (47.3-224)	1038
	07-08	**6.52** (5.26-8.07)	**4.89** (3.95-6.20)	**14.4** (11.4-19.2)	**53.2** (40.1-75.9)	**131** (82.5-249)	1077
	09-10	**4.60** (3.59-5.90)	**3.27** (2.77-4.10)	**10.4** (7.22-15.2)	**41.3** (25.0-69.1)	**130** (73.4-180)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/25D_BiomonitoringSummary.html

Urinary 2,5-Dichlorophenol (creatinine corrected) (2011 - 2012)

Metabolite of 1,4-Dichlorobenzene (Paradichlorobenzene) and Other Chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**4.80** (3.65-6.32)	**3.19** (2.38-4.43)	**11.4** (7.97-17.9)	**66.4** (39.9-125)	**215** (145-342)	2487
Age group							
6-11 years	11-12	**5.01** (3.10-8.09)	**3.02** (2.00-5.00)	**10.6** (5.53-21.7)	**98.1** (32.9-166)	**377** (125-1180)	395
12-19 years	11-12	**4.04** (2.51-6.52)	**2.41** (1.54-5.34)	**12.1** (5.67-27.6)	**47.9** (26.3-99.5)	**157** (55.1-324)	388
20 years and older	11-12	**4.90** (3.67-6.56)	**3.33** (2.50-4.51)	**11.5** (8.04-18.0)	**70.3** (38.8-136)	**226** (145-342)	1704
Gender							
Males	11-12	**4.15** (3.14-5.49)	**2.87** (2.14-4.13)	**9.73** (6.88-16.1)	**52.8** (31.4-106)	**157** (125-233)	1258
Females	11-12	**5.53** (4.14-7.37)	**3.39** (2.57-5.00)	**13.1** (8.84-19.5)	**90.1** (45.2-147)	**331** (145-557)	1229
Race/ethnicity							
Mexican Americans	11-12	**6.67** (4.04-11.0)	**4.85** (2.25-8.69)	**22.4** (12.6-37.6)	**189** (49.2-249)	**383** (213-981)	316
Non-Hispanic blacks	11-12	**12.9** (8.32-19.9)	**9.41** (6.35-15.1)	**34.5** (18.1-75.0)	**174** (83.7-567)	**744** (236-1790)	665
Non-Hispanic whites	11-12	**3.40** (2.57-4.49)	**2.36** (1.76-3.19)	**6.96** (4.70-9.67)	**34.5** (16.4-80.1)	**126** (55.3-232)	811
All Hispanics	11-12	**8.92** (5.45-14.6)	**6.55** (3.50-13.8)	**28.8** (16.6-53.6)	**184** (97.2-266)	**383** (213-1240)	571
Asians	11-12	**5.05** (2.93-8.69)	**2.99** (1.74-7.04)	**15.3** (6.51-45.6)	**106** (58.7-177)	**236** (97.5-632)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/25D_BiomonitoringSummary.html

Urinary Acephate (2003 - 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2491
	05-06	*	< LOD	< LOD	< LOD	< LOD	2546
	07-08	*	< LOD	< LOD	< LOD	< LOD	2505
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	309
	05-06	*	< LOD	< LOD	< LOD	< LOD	343
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	715
	05-06	*	< LOD	< LOD	< LOD	< LOD	696
	07-08	*	< LOD	< LOD	< LOD	< LOD	375
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	939
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1134
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	528
	05-06	*	< LOD	< LOD	< LOD	< LOD	457
	07-08	*	< LOD	< LOD	< LOD	< LOD	622
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1221
	05-06	*	< LOD	< LOD	< LOD	< LOD	1205
	07-08	*	< LOD	< LOD	< LOD	< LOD	1250
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1270
	05-06	*	< LOD	< LOD	< LOD	< LOD	1341
	07-08	*	< LOD	< LOD	< LOD	< LOD	1255
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	608
	05-06	*	< LOD	< LOD	< LOD	< LOD	666
	07-08	*	< LOD	< LOD	< LOD	< LOD	476
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	647
	05-06	*	< LOD	< LOD	< LOD	< LOD	698
	07-08	*	< LOD	< LOD	< LOD	< LOD	551
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1077
	05-06	*	< LOD	< LOD	< LOD	< LOD	979
	07-08	*	< LOD	< LOD	< LOD	< LOD	1062

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.25, and 0.27 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acephate_BiomonitoringSummary.html

Urinary Acephate (creatinine corrected) (2003 - 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2489
	05-06	*	< LOD	< LOD	< LOD	< LOD	2546
	07-08	*	< LOD	< LOD	< LOD	< LOD	2503
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	309
	05-06	*	< LOD	< LOD	< LOD	< LOD	343
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	714
	05-06	*	< LOD	< LOD	< LOD	< LOD	696
	07-08	*	< LOD	< LOD	< LOD	< LOD	373
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	938
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1134
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	528
	05-06	*	< LOD	< LOD	< LOD	< LOD	457
	07-08	*	< LOD	< LOD	< LOD	< LOD	622
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1220
	05-06	*	< LOD	< LOD	< LOD	< LOD	1205
	07-08	*	< LOD	< LOD	< LOD	< LOD	1249
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1269
	05-06	*	< LOD	< LOD	< LOD	< LOD	1341
	07-08	*	< LOD	< LOD	< LOD	< LOD	1254
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	607
	05-06	*	< LOD	< LOD	< LOD	< LOD	666
	07-08	*	< LOD	< LOD	< LOD	< LOD	475
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	647
	05-06	*	< LOD	< LOD	< LOD	< LOD	698
	07-08	*	< LOD	< LOD	< LOD	< LOD	550
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1076
	05-06	*	< LOD	< LOD	< LOD	< LOD	979
	07-08	*	< LOD	< LOD	< LOD	< LOD	1062

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acephate_BiomonitoringSummary.html

Urinary Dimethoate (2003 - 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2455
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
	07-08	*	< LOD	< LOD	< LOD	< LOD	2573
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	306
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
	07-08	*	< LOD	< LOD	< LOD	< LOD	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	708
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	388
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	922
	05-06	*	< LOD	< LOD	< LOD	< LOD	1087
	07-08	*	< LOD	< LOD	< LOD	< LOD	1170
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	519
	05-06	*	< LOD	< LOD	< LOD	< LOD	474
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1197
	05-06	*	< LOD	< LOD	< LOD	< LOD	1245
	07-08	*	< LOD	< LOD	< LOD	< LOD	1290
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1258
	05-06	*	< LOD	< LOD	< LOD	< LOD	1383
	07-08	*	< LOD	< LOD	< LOD	< LOD	1283
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	605
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	493
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	629
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	570
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1068
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.25, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DimethoateOmethoate_BiomonitoringSummary.html

Urinary Dimethoate (creatinine corrected) (2003 - 2008)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2453
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
	07-08	*	< LOD	< LOD	< LOD	< LOD	2571
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	306
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
	07-08	*	< LOD	< LOD	< LOD	< LOD	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	707
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	386
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	921
	05-06	*	< LOD	< LOD	< LOD	< LOD	1087
	07-08	*	< LOD	< LOD	< LOD	< LOD	1170
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	519
	05-06	*	< LOD	< LOD	< LOD	< LOD	474
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1196
	05-06	*	< LOD	< LOD	< LOD	< LOD	1245
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1257
	05-06	*	< LOD	< LOD	< LOD	< LOD	1383
	07-08	*	< LOD	< LOD	< LOD	< LOD	1282
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	604
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	492
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	629
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	569
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1067
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DimethoateOmethoate_BiomonitoringSummary.html

Urinary Methamidophos (2003 - 2008)

Also a metabolite of Acephate

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2379
	05-06	*	< LOD	< LOD	< LOD	< LOD	2591
	07-08	*	< LOD	< LOD	< LOD	< LOD	2573
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	295
	05-06	*	< LOD	< LOD	< LOD	< LOD	346
	07-08	*	< LOD	< LOD	< LOD	< LOD	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	683
	05-06	*	< LOD	< LOD	< LOD	< LOD	710
	07-08	*	< LOD	< LOD	< LOD	< LOD	388
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	893
	05-06	*	< LOD	< LOD	< LOD	< LOD	1070
	07-08	*	< LOD	< LOD	< LOD	< LOD	1169
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	508
	05-06	*	< LOD	< LOD	< LOD	< LOD	465
	07-08	*	< LOD	< LOD	< LOD	< LOD	634
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1171
	05-06	*	< LOD	< LOD	< LOD	< LOD	1232
	07-08	*	< LOD	< LOD	< LOD	< LOD	1290
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1208
	05-06	*	< LOD	< LOD	< LOD	< LOD	1359
	07-08	*	< LOD	< LOD	< LOD	< LOD	1283
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	564
	05-06	*	< LOD	< LOD	< LOD	< LOD	688
	07-08	*	< LOD	< LOD	< LOD	< LOD	492
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	631
	05-06	*	< LOD	< LOD	< LOD	< LOD	717
	07-08	*	< LOD	< LOD	< LOD	< LOD	571
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1034
	05-06	*	< LOD	< LOD	< LOD	< LOD	979
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.37, and 0.41 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Methamidophos_BiomonitoringSummary.html

Urinary Methamidophos (creatinine corrected) (2003 - 2008)

Also a metabolite of Acephate

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2377
	05-06	*	< LOD	< LOD	< LOD	< LOD	2591
	07-08	*	< LOD	< LOD	< LOD	< LOD	2571
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	295
	05-06	*	< LOD	< LOD	< LOD	< LOD	346
	07-08	*	< LOD	< LOD	< LOD	< LOD	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	682
	05-06	*	< LOD	< LOD	< LOD	< LOD	710
	07-08	*	< LOD	< LOD	< LOD	< LOD	386
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	892
	05-06	*	< LOD	< LOD	< LOD	< LOD	1070
	07-08	*	< LOD	< LOD	< LOD	< LOD	1169
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	508
	05-06	*	< LOD	< LOD	< LOD	< LOD	465
	07-08	*	< LOD	< LOD	< LOD	< LOD	634
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1170
	05-06	*	< LOD	< LOD	< LOD	< LOD	1232
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1207
	05-06	*	< LOD	< LOD	< LOD	< LOD	1359
	07-08	*	< LOD	< LOD	< LOD	< LOD	1282
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	563
	05-06	*	< LOD	< LOD	< LOD	< LOD	688
	07-08	*	< LOD	< LOD	< LOD	< LOD	491
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	631
	05-06	*	< LOD	< LOD	< LOD	< LOD	717
	07-08	*	< LOD	< LOD	< LOD	< LOD	570
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1033
	05-06	*	< LOD	< LOD	< LOD	< LOD	979
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Methamidophos_BiomonitoringSummary.html

Urinary Omethoate (2003 - 2008)

Metabolite of Dimethoate

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2455
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
	07-08	*	< LOD	< LOD	< LOD	< LOD	2574
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	303
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
	07-08	*	< LOD	< LOD	< LOD	< LOD	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	707
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	388
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	923
	05-06	*	< LOD	< LOD	< LOD	< LOD	1086
	07-08	*	< LOD	< LOD	< LOD	< LOD	1170
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	522
	05-06	*	< LOD	< LOD	< LOD	< LOD	475
	07-08	*	< LOD	< LOD	< LOD	< LOD	634
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1207
	05-06	*	< LOD	< LOD	< LOD	< LOD	1245
	07-08	*	< LOD	< LOD	< LOD	< LOD	1290
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1248
	05-06	*	< LOD	< LOD	< LOD	< LOD	1383
	07-08	*	< LOD	< LOD	< LOD	< LOD	1284
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	606
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	493
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	637
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	571
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1055
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.14, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DimethoateOmethoate_BiomonitoringSummary.html

Urinary Omethoate (creatinine corrected) (2003 - 2008)

Metabolite of Dimethoate

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2453
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
	07-08	*	< LOD	< LOD	< LOD	< LOD	2572
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	303
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
	07-08	*	< LOD	< LOD	< LOD	< LOD	382
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	706
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	386
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	922
	05-06	*	< LOD	< LOD	< LOD	< LOD	1086
	07-08	*	< LOD	< LOD	< LOD	< LOD	1170
60 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	522
	05-06	*	< LOD	< LOD	< LOD	< LOD	475
	07-08	*	< LOD	< LOD	< LOD	< LOD	634
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1206
	05-06	*	< LOD	< LOD	< LOD	< LOD	1245
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1247
	05-06	*	< LOD	< LOD	< LOD	< LOD	1383
	07-08	*	< LOD	< LOD	< LOD	< LOD	1283
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	605
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	492
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	637
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	570
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1054
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DimethoateOmethoate_BiomonitoringSummary.html

Urinary Malathion dicarboxylic acid (1999 - 2010)

Metabolite of Malathion

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1920
	07-08	*	< LOD	< LOD	**.980** (.900-1.08)	**1.65** (1.44-1.94)	2581
	09-10	*	< LOD	< LOD	**.990** (.830-1.09)	**2.05** (1.64-2.33)	2742
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	**2.80** (<LOD-5.50)	453
	07-08	*	< LOD	**.510** (<LOD-.640)	**1.26** (.810-2.13)	**2.32** (1.43-3.55)	383
	09-10	*	< LOD	< LOD	**1.10** (.580-1.59)	**1.80** (1.15-3.73)	385
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	660
	07-08	*	< LOD	< LOD	**1.09** (.740-1.40)	**1.59** (1.14-1.94)	390
	09-10	*	< LOD	< LOD	**1.08** (.520-1.41)	**1.60** (1.00-3.37)	400
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	807
	07-08	*	< LOD	< LOD	**.900** (.770-1.01)	**1.41** (1.14-1.65)	1177
	09-10	*	< LOD	< LOD	**.910** (.710-1.10)	**2.23** (1.65-2.57)	1307
60 years and older	07-08	*	< LOD	**.500** (<LOD-.580)	**1.37** (.980-1.73)	**3.29** (1.48-7.45)	631
	09-10	*	< LOD	< LOD	**1.03** (.830-1.25)	**1.63** (1.34-3.34)	650
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	937
	07-08	*	< LOD	< LOD	**1.05** (.930-1.23)	**1.90** (1.55-2.46)	1290
	09-10	*	< LOD	< LOD	**.950** (.720-1.19)	**1.85** (1.22-2.86)	1341
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	983
	07-08	*	< LOD	< LOD	**.860** (.660-1.13)	**1.52** (1.13-1.91)	1291
	09-10	*	< LOD	< LOD	**1.00** (.720-1.29)	**2.19** (1.64-2.63)	1401
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	680
	07-08	*	< LOD	< LOD	**.740** (.550-1.01)	**1.12** (.900-1.52)	500
	09-10	*	< LOD	< LOD	**.790** (.540-1.05)	**1.29** (.920-1.94)	600
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	498
	07-08	*	< LOD	< LOD	**.670** (.540-.810)	**1.06** (.860-1.34)	573
	09-10	*	< LOD	< LOD	**.630** (<LOD-.880)	**1.33** (.880-1.80)	504
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	580
	07-08	*	< LOD	< LOD	**1.08** (.900-1.29)	**1.84** (1.55-2.47)	1079
	09-10	*	< LOD	< LOD	**1.09** (.910-1.30)	**2.33** (1.81-2.87)	1197

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 07-08, and 09-10 are 2.64, 0.5, and 0.5 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Malathion_BiomonitoringSummary.html

Urinary Malathion dicarboxylic acid (creatinine corrected) (1999 - 2010)

Metabolite of Malathion

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1920
	07-08	*	< LOD	< LOD	**1.46** (1.30-1.71)	**2.19** (1.85-2.72)	2579
	09-10	*	< LOD	< LOD	**1.52** (1.40-1.65)	**2.50** (2.13-2.94)	2742
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	**3.74** (<LOD-5.50)	453
	07-08	*	< LOD	**.946** (<LOD-1.14)	**1.85** (1.55-2.27)	**2.84** (1.85-5.11)	383
	09-10	*	< LOD	< LOD	**1.75** (1.25-2.19)	**2.25** (1.94-6.25)	385
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	660
	07-08	*	< LOD	< LOD	**.982** (.761-1.21)	**1.46** (1.06-1.80)	388
	09-10	*	< LOD	< LOD	**.946** (.833-1.25)	**1.49** (.946-3.41)	400
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	807
	07-08	*	< LOD	< LOD	**1.35** (1.21-1.52)	**1.96** (1.71-2.69)	1177
	09-10	*	< LOD	< LOD	**1.53** (1.40-1.67)	**2.56** (2.06-3.26)	1307
60 years and older	07-08	*	< LOD	**1.06** (<LOD-1.17)	**2.06** (1.64-2.72)	**3.58** (2.19-8.63)	631
	09-10	*	< LOD	< LOD	**1.62** (1.40-1.94)	**2.52** (2.19-3.28)	650
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	937
	07-08	*	< LOD	< LOD	**1.13** (1.00-1.31)	**1.73** (1.40-2.09)	1289
	09-10	*	< LOD	< LOD	**1.25** (1.06-1.52)	**2.06** (1.59-2.52)	1341
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	983
	07-08	*	< LOD	< LOD	**1.82** (1.46-2.06)	**2.72** (2.19-3.08)	1290
	09-10	*	< LOD	< LOD	**1.67** (1.46-2.06)	**2.94** (2.33-3.97)	1401
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	680
	07-08	*	< LOD	< LOD	**1.13** (.946-1.46)	**1.84** (1.21-2.69)	499
	09-10	*	< LOD	< LOD	**1.30** (1.13-1.56)	**1.84** (1.52-2.10)	600
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	498
	07-08	*	< LOD	< LOD	**.946** (.756-1.09)	**1.35** (1.03-1.67)	572
	09-10	*	< LOD	< LOD	**.875** (<LOD-1.06)	**1.46** (1.09-1.75)	504
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	580
	07-08	*	< LOD	< LOD	**1.63** (1.32-1.84)	**2.47** (1.94-3.06)	1079
	09-10	*	< LOD	< LOD	**1.63** (1.46-1.89)	**2.99** (2.33-3.69)	1197

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Malathion_BiomonitoringSummary.html

Urinary 2-Isopropyl-4-methyl-6-hydroxypyrimidine (1999 - 2010)

Metabolite of Diazinon

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1842
	01-02	*	< LOD	< LOD	< LOD	< LOD	3044
	07-08	*	< LOD	< LOD	**.350** (.260-.470)	**.720** (.530-.890)	2588
	09-10	*	< LOD	< LOD	**.180** (.100-.280)	**.440** (.310-.660)	2747
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	454
	01-02	*	< LOD	< LOD	< LOD	**1.45** (<LOD-3.11)	580
	07-08	*	< LOD	< LOD	**.260** (.160-.510)	**.580** (.380-1.29)	385
	09-10	*	< LOD	< LOD	**.180** (<LOD-.260)	**.410** (.210-.480)	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	632
	01-02	*	< LOD	< LOD	< LOD	< LOD	829
	07-08	*	< LOD	< LOD	**.320** (.180-.510)	**.660** (.350-1.24)	390
	09-10	*	< LOD	< LOD	< LOD	**.260** (<LOD-.390)	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	756
	01-02	*	< LOD	< LOD	< LOD	< LOD	1126
	07-08	*	< LOD	< LOD	**.310** (.220-.500)	**.670** (.490-.890)	1180
	09-10	*	< LOD	< LOD	**.160** (<LOD-.280)	**.450** (.280-.810)	1309
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	509
	07-08	*	< LOD	< LOD	**.470** (.320-.670)	**1.02** (.600-1.27)	633
	09-10	*	< LOD	< LOD	**.290** (.200-.430)	**.640** (.350-.860)	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	894
	01-02	*	< LOD	< LOD	< LOD	< LOD	1427
	07-08	*	< LOD	< LOD	**.390** (.300-.500)	**.760** (.530-1.02)	1293
	09-10	*	< LOD	< LOD	**.160** (<LOD-.240)	**.450** (.270-.710)	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	948
	01-02	*	< LOD	< LOD	< LOD	< LOD	1617
	07-08	*	< LOD	< LOD	**.300** (.210-.450)	**.670** (.510-.830)	1295
	09-10	*	< LOD	< LOD	**.210** (.130-.290)	**.440** (.310-.600)	1404
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	644
	01-02	*	< LOD	< LOD	< LOD	< LOD	765
	07-08	*	< LOD	**.110** (<LOD-.160)	**.350** (.260-.440)	**.540** (.400-.790)	500
	09-10	*	< LOD	< LOD	**.140** (<LOD-.210)	**.360** (.210-.570)	602
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	484
	01-02	*	< LOD	< LOD	< LOD	**1.49** (<LOD-2.36)	775
	07-08	*	< LOD	**.230** (.140-.300)	**.680** (.460-.990)	**1.26** (.880-1.77)	574
	09-10	*	< LOD	< LOD	**.430** (.310-.510)	**.760** (.460-1.21)	504
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	554
	01-02	*	< LOD	< LOD	< LOD	< LOD	1280
	07-08	*	< LOD	< LOD	**.270** (.190-.400)	**.650** (.440-.880)	1084
	09-10	*	< LOD	< LOD	**.120** (<LOD-.260)	**.410** (.280-.660)	1200

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 07-08, and 09-10 are 7.2, 0.7, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Diazinon_BiomonitoringSummary.html

Urinary 2-Isopropyl-4-methyl-6-hydroxypyrimidine (creatinine corrected) (1999 - 2010)

Metabolite of Diazinon

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1842
	01-02	*	< LOD	< LOD	< LOD	< LOD	3042
	07-08	*	< LOD	< LOD	**.412** (.333-.508)	**.731** (.538-1.00)	2586
	09-10	*	< LOD	< LOD	**.313** (.269-.350)	**.526** (.429-.636)	2747
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	454
	01-02	*	< LOD	< LOD	< LOD	**2.72** (<LOD-4.46)	580
	07-08	*	< LOD	< LOD	**.412** (.304-.658)	**1.00** (.412-1.59)	385
	09-10	*	< LOD	< LOD	**.333** (<LOD-.438)	**.438** (.323-.900)	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	632
	01-02	*	< LOD	< LOD	< LOD	< LOD	828
	07-08	*	< LOD	< LOD	**.278** (.175-.452)	**.460** (.276-1.17)	388
	09-10	*	< LOD	< LOD	< LOD	**.228** (<LOD-.365)	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	756
	01-02	*	< LOD	< LOD	< LOD	< LOD	1126
	07-08	*	< LOD	< LOD	**.383** (.304-.508)	**.645** (.500-.846)	1180
	09-10	*	< LOD	< LOD	**.304** (<LOD-.350)	**.526** (.364-.700)	1309
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	508
	07-08	*	< LOD	< LOD	**.594** (.414-.822)	**1.05** (.708-1.80)	633
	09-10	*	< LOD	< LOD	**.438** (.333-.551)	**.773** (.550-1.09)	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	894
	01-02	*	< LOD	< LOD	< LOD	< LOD	1427
	07-08	*	< LOD	< LOD	**.333** (.286-.457)	**.677** (.500-.795)	1292
	09-10	*	< LOD	< LOD	**.259** (<LOD-.318)	**.438** (.318-.613)	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	948
	01-02	*	< LOD	< LOD	< LOD	< LOD	1615
	07-08	*	< LOD	< LOD	**.438** (.368-.632)	**.822** (.562-1.35)	1294
	09-10	*	< LOD	< LOD	**.347** (.304-.407)	**.583** (.500-.710)	1404
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	644
	01-02	*	< LOD	< LOD	< LOD	< LOD	765
	07-08	*	< LOD	**.172** (<LOD-.203)	**.385** (.260-.483)	**.636** (.401-.990)	499
	09-10	*	< LOD	< LOD	**.271** (<LOD-.333)	**.412** (.350-.538)	602
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	484
	01-02	*	< LOD	< LOD	< LOD	**1.89** (<LOD-3.06)	774
	07-08	*	< LOD	**.202** (.152-.256)	**.571** (.333-.800)	**1.01** (.728-1.47)	573
	09-10	*	< LOD	< LOD	**.318** (.269-.374)	**.619** (.352-.933)	504
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	554
	01-02	*	< LOD	< LOD	< LOD	< LOD	1279
	07-08	*	< LOD	< LOD	**.368** (.292-.484)	**.700** (.418-1.06)	1084
	09-10	*	< LOD	< LOD	**.304** (<LOD-.368)	**.525** (.412-.691)	1200

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Diazinon_BiomonitoringSummary.html

Urinary *para*-Nitrophenol (1999 - 2010)

Metabolite of Ethyl Parathion, Methyl Parathion, and Nitrobenzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**2.50** (1.40-4.50)	**5.00** (2.90-11.0)	1989
	01-02	*	< LOD	**1.33** (1.20-1.46)	**2.69** (2.39-3.01)	**3.72** (3.46-4.15)	2975
	07-08	**.673** (.595-.761)	**.740** (.660-.830)	**1.49** (1.32-1.66)	**2.77** (2.19-3.45)	**4.50** (3.50-5.42)	2564
	09-10	**.454** (.407-.506)	**.510** (.440-.580)	**1.09** (1.00-1.19)	**2.18** (1.99-2.34)	**3.14** (2.85-3.55)	2744
Age group							
6-11 years	99-00	*	< LOD	**.940** (<LOD-2.40)	**2.67** (1.70-3.80)	**4.30** (2.70-6.40)	479
	01-02	*	**.790** (<LOD-.910)	**1.49** (1.36-1.61)	**2.89** (2.22-3.58)	**4.10** (3.01-4.74)	565
	07-08	**.803** (.678-.952)	**.890** (.760-1.01)	**1.66** (1.26-1.99)	**2.85** (2.10-3.94)	**4.37** (2.91-6.75)	383
	09-10	**.506** (.426-.601)	**.600** (.500-.720)	**1.20** (.980-1.43)	**2.21** (1.74-2.73)	**2.85** (2.28-3.81)	386
12-19 years	99-00	*	< LOD	< LOD	**3.40** (1.60-5.70)	**5.70** (2.60-19.0)	680
	01-02	*	**.730** (<LOD-.910)	**1.45** (1.32-1.61)	**2.66** (2.15-3.11)	**3.34** (3.11-4.01)	813
	07-08	**.769** (.614-.962)	**.850** (.680-1.02)	**1.49** (1.28-1.74)	**2.79** (1.94-3.45)	**3.47** (2.97-4.48)	387
	09-10	**.430** (.375-.493)	**.520** (.460-.590)	**.950** (.870-1.09)	**1.84** (1.43-2.03)	**2.37** (1.84-2.98)	401
20-59 years	99-00	*	< LOD	< LOD	**2.30** (1.20-5.70)	**4.50** (2.30-16.0)	830
	01-02	*	< LOD	**1.28** (1.09-1.47)	**2.69** (2.32-3.10)	**3.72** (3.37-4.24)	1099
	07-08	**.658** (.574-.754)	**.720** (.640-.840)	**1.49** (1.31-1.65)	**2.77** (2.10-3.70)	**4.68** (3.37-5.56)	1173
	09-10	**.452** (.400-.511)	**.510** (.420-.590)	**1.12** (1.00-1.24)	**2.16** (1.91-2.39)	**3.27** (2.84-3.58)	1308
60 years and older	01-02	*	< LOD	**1.29** (1.07-1.49)	**2.66** (2.11-3.39)	**4.01** (3.17-7.19)	498
	07-08	**.607** (.512-.720)	**.610** (.550-.710)	**1.41** (1.14-1.76)	**2.81** (2.19-3.90)	**4.70** (2.90-6.91)	621
	09-10	**.453** (.386-.530)	**.460** (.380-.580)	**1.06** (.970-1.33)	**2.42** (1.87-3.00)	**3.65** (3.00-4.36)	649
Gender							
Males	99-00	*	< LOD	< LOD	**2.50** (1.40-4.50)	**4.50** (2.50-14.0)	971
	01-02	*	**.760** (.450-.880)	**1.49** (1.32-1.63)	**3.01** (2.66-3.33)	**4.13** (3.61-4.92)	1395
	07-08	**.782** (.690-.887)	**.850** (.740-.980)	**1.59** (1.43-1.73)	**2.85** (2.19-3.53)	**4.52** (3.47-5.01)	1282
	09-10	**.524** (.472-.581)	**.590** (.490-.670)	**1.30** (1.14-1.42)	**2.29** (2.07-2.54)	**3.29** (2.90-3.73)	1342
Females	99-00	*	< LOD	< LOD	**2.50** (1.30-5.70)	**5.70** (2.90-9.50)	1018
	01-02	*	< LOD	**1.18** (1.01-1.37)	**2.29** (1.95-2.69)	**3.52** (3.16-3.77)	1580
	07-08	**.582** (.510-.664)	**.640** (.550-.720)	**1.32** (1.10-1.59)	**2.72** (2.16-3.35)	**4.37** (3.09-5.64)	1282
	09-10	**.396** (.352-.446)	**.440** (.380-.510)	**.960** (.860-1.06)	**2.01** (1.70-2.26)	**3.07** (2.62-3.55)	1402
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	**1.70** (<LOD-3.50)	**5.80** (2.60-24.0)	**22.0** (3.60-36.0)	695
	01-02	*	**.680** (<LOD-.840)	**1.33** (1.08-1.58)	**2.61** (1.91-3.41)	**3.64** (2.70-5.73)	744
	07-08	**.624** (.542-.720)	**.700** (.560-.810)	**1.37** (1.16-1.52)	**2.58** (2.03-3.33)	**4.46** (2.79-6.91)	494
	09-10	**.484** (.392-.599)	**.560** (.440-.710)	**1.30** (1.03-1.46)	**2.21** (1.78-2.46)	**3.07** (2.39-3.73)	602
Non-Hispanic blacks	99-00	*	< LOD	**1.20** (<LOD-2.60)	**2.90** (1.70-6.00)	**4.80** (2.50-9.20)	518
	01-02	*	**.850** (<LOD-1.10)	**1.76** (1.36-2.15)	**3.13** (2.47-4.26)	**4.92** (3.75-6.36)	752
	07-08	**.826** (.716-.952)	**.860** (.760-1.01)	**1.71** (1.45-1.92)	**3.15** (2.56-3.90)	**4.72** (3.91-5.68)	568
	09-10	**.505** (.381-.670)	**.570** (.400-.820)	**1.30** (1.01-1.50)	**2.19** (1.80-2.63)	**3.49** (2.57-4.28)	504
Non-Hispanic whites	99-00	*	< LOD	< LOD	**2.10** (<LOD-6.33)	**4.20** (2.10-11.0)	603
	01-02	*	< LOD	**1.29** (1.14-1.42)	**2.70** (2.38-3.10)	**3.71** (3.38-4.00)	1259
	07-08	**.623** (.531-.730)	**.690** (.610-.790)	**1.36** (1.19-1.59)	**2.51** (1.89-3.08)	**3.63** (2.82-5.48)	1075
	09-10	**.440** (.388-.499)	**.490** (.410-.580)	**1.03** (.930-1.12)	**2.18** (1.89-2.48)	**3.14** (2.67-3.62)	1197

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 07-08, and 09-10 are 0.8, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Nitrobenzene_BiomonitoringSummary.html

Urinary *para*-Nitrophenol (creatinine corrected) (1999 - 2010)

Metabolite of Ethyl Parathion, Methyl Parathion, and Nitrobenzene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**2.08** (1.33-3.91)	**4.25** (2.15-10.2)	1989
	01-02	*	< LOD	**.987** (.868-1.10)	**1.97** (1.86-2.13)	**2.98** (2.60-3.33)	2973
	07-08	**.692** (.632-.757)	**.673** (.624-.737)	**1.28** (1.15-1.40)	**2.38** (2.11-2.66)	**3.57** (2.94-4.39)	2562
	09-10	**.473** (.430-.521)	**.490** (.438-.531)	**.923** (.851-1.01)	**1.87** (1.60-2.06)	**2.62** (2.32-2.91)	2744
Age group							
6-11 years	99-00	*	< LOD	**.938** (<LOD-1.95)	**2.80** (1.94-4.00)	**4.20** (3.33-6.70)	479
	01-02	*	**.715** (<LOD-.870)	**1.60** (1.30-1.82)	**2.78** (2.31-3.11)	**3.67** (3.11-4.61)	565
	07-08	**1.02** (.892-1.17)	**1.02** (.920-1.12)	**1.67** (1.46-1.90)	**3.13** (2.51-3.64)	**3.76** (3.31-4.89)	383
	09-10	**.684** (.598-.784)	**.717** (.650-.826)	**1.30** (1.10-1.54)	**2.19** (2.00-2.59)	**3.16** (2.33-3.67)	386
12-19 years	99-00	*	< LOD	< LOD	**1.80** (1.08-3.04)	**4.00** (1.57-7.29)	680
	01-02	*	**.373** (<LOD-.503)	**.840** (.790-.951)	**1.59** (1.37-1.78)	**2.10** (1.78-2.43)	812
	07-08	**.597** (.511-.698)	**.581** (.497-.697)	**1.02** (.891-1.14)	**1.64** (1.29-2.17)	**2.92** (1.55-4.54)	385
	09-10	**.368** (.319-.426)	**.413** (.350-.488)	**.684** (.615-.732)	**1.09** (.930-1.48)	**1.73** (1.47-2.09)	401
20-59 years	99-00	*	< LOD	< LOD	**2.00** (1.17-4.25)	**4.29** (2.13-12.3)	830
	01-02	*	< LOD	**.875** (.693-1.07)	**1.79** (1.56-2.05)	**2.89** (2.35-3.33)	1099
	07-08	**.656** (.595-.724)	**.635** (.585-.706)	**1.22** (1.09-1.34)	**2.19** (1.94-2.51)	**3.04** (2.56-4.07)	1173
	09-10	**.452** (.410-.498)	**.453** (.405-.521)	**.868** (.805-.981)	**1.61** (1.48-1.87)	**2.34** (2.08-2.67)	1308
60 years and older	01-02	*	< LOD	**1.21** (.920-1.56)	**2.29** (1.99-2.83)	**4.29** (2.51-5.67)	497
	07-08	**.755** (.643-.886)	**.763** (.638-.909)	**1.59** (1.40-1.73)	**3.26** (2.46-4.47)	**5.43** (3.33-7.09)	621
	09-10	**.537** (.450-.641)	**.520** (.451-.636)	**1.15** (.899-1.59)	**2.53** (2.03-3.39)	**4.27** (2.98-5.26)	649
Gender							
Males	99-00	*	< LOD	< LOD	**1.90** (1.01-3.39)	**3.39** (1.77-7.55)	971
	01-02	*	**.433** (.333-.534)	**.984** (.869-1.07)	**1.89** (1.66-2.09)	**2.98** (2.29-3.57)	1395
	07-08	**.650** (.595-.712)	**.641** (.594-.697)	**1.20** (1.08-1.33)	**2.11** (1.63-2.49)	**3.02** (2.51-3.71)	1281
	09-10	**.466** (.424-.512)	**.495** (.432-.538)	**.922** (.843-.985)	**1.84** (1.48-2.05)	**2.36** (2.21-2.68)	1342
Females	99-00	*	< LOD	< LOD	**2.26** (1.48-4.88)	**6.92** (2.76-14.1)	1018
	01-02	*	< LOD	**.995** (.801-1.23)	**2.08** (1.85-2.32)	**3.04** (2.58-3.44)	1578
	07-08	**.735** (.660-.818)	**.707** (.644-.779)	**1.37** (1.21-1.63)	**2.67** (2.20-3.25)	**4.11** (3.11-5.06)	1281
	09-10	**.480** (.430-.536)	**.488** (.426-.538)	**.923** (.824-1.08)	**1.93** (1.62-2.17)	**2.72** (2.32-3.46)	1402
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	**1.55** (<LOD-3.17)	**4.86** (2.21-21.9)	**17.4** (3.94-47.7)	695
	01-02	*	**.389** (<LOD-.546)	**.935** (.716-1.22)	**1.89** (1.43-2.63)	**3.23** (2.49-3.84)	744
	07-08	**.638** (.538-.757)	**.604** (.554-.708)	**1.14** (.938-1.40)	**2.03** (1.45-3.57)	**3.63** (2.05-4.71)	493
	09-10	**.506** (.419-.612)	**.541** (.480-.621)	**1.02** (.854-1.19)	**1.73** (1.39-2.15)	**2.35** (1.84-3.02)	602
Non-Hispanic blacks	99-00	*	< LOD	**.683** (<LOD-1.79)	**2.07** (1.33-3.71)	**3.71** (1.98-7.20)	518
	01-02	*	**.438** (<LOD-.640)	**1.04** (.847-1.27)	**1.84** (1.59-2.30)	**2.81** (2.14-4.30)	751
	07-08	**.633** (.565-.708)	**.634** (.553-.743)	**1.07** (.973-1.23)	**2.04** (1.64-2.32)	**2.66** (2.11-3.54)	567
	09-10	**.382** (.289-.505)	**.431** (.312-.554)	**.785** (.671-.874)	**1.36** (1.03-1.99)	**2.52** (1.73-3.22)	504
Non-Hispanic whites	99-00	*	< LOD	< LOD	**1.97** (<LOD-4.29)	**3.83** (1.97-10.2)	603
	01-02	*	< LOD	**.984** (.827-1.16)	**2.06** (1.89-2.29)	**3.11** (2.49-3.57)	1258
	07-08	**.677** (.604-.759)	**.664** (.604-.761)	**1.25** (1.10-1.38)	**2.28** (2.00-2.56)	**3.23** (2.60-4.00)	1075
	09-10	**.479** (.433-.530)	**.490** (.433-.538)	**.923** (.849-1.03)	**1.92** (1.60-2.13)	**2.62** (2.24-3.04)	1197

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Nitrobenzene_BiomonitoringSummary.html

Urinary 3,5,6-Trichloro-2-pyridinol (1999 - 2010)

Metabolite of Chlorpyrifos and Chlorpyrifos-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.77** (1.46-2.14)	**1.70** (1.40-2.20)	**3.50** (2.50-5.20)	**7.30** (4.80-10.0)	**10.0** (7.70-15.0)	1994
	01-02	**1.72** (1.50-1.97)	**2.17** (1.81-2.51)	**4.87** (4.45-5.24)	**8.80** (7.80-9.77)	**12.4** (10.7-15.2)	3011
	07-08	**1.29** (1.20-1.39)	**1.48** (1.31-1.65)	**2.63** (2.39-2.94)	**4.55** (4.03-5.14)	**6.11** (5.60-6.93)	2588
	09-10	**.779** (.706-.859)	**1.03** (.920-1.16)	**1.96** (1.80-2.20)	**3.34** (2.96-3.68)	**4.47** (4.04-5.15)	2747
Age group							
6-11 years	99-00	**2.88** (1.99-4.16)	**2.80** (1.60-4.90)	**7.09** (3.40-10.0)	**12.0** (7.70-17.0)	**16.0** (10.0-28.0)	481
	01-02	**2.67** (2.13-3.35)	**3.09** (2.50-4.22)	**6.36** (4.97-7.97)	**10.9** (7.98-15.3)	**15.3** (11.5-24.0)	573
	07-08	**1.72** (1.48-2.01)	**1.85** (1.49-2.22)	**3.18** (2.58-3.68)	**4.69** (3.90-5.74)	**6.04** (5.12-7.63)	385
	09-10	**1.12** (.899-1.39)	**1.46** (1.27-1.64)	**2.38** (1.96-2.75)	**4.29** (2.67-6.07)	**5.81** (4.14-7.16)	386
12-19 years	99-00	**2.37** (1.89-2.97)	**2.10** (1.60-3.00)	**4.50** (2.90-7.10)	**8.10** (5.50-14.0)	**12.5** (8.00-24.0)	681
	01-02	**2.71** (2.19-3.35)	**3.57** (2.66-4.34)	**6.60** (5.61-7.59)	**11.3** (8.66-15.1)	**18.0** (13.7-23.7)	823
	07-08	**1.54** (1.27-1.86)	**1.81** (1.39-2.20)	**2.75** (2.34-3.29)	**4.70** (3.66-5.72)	**6.33** (4.98-7.96)	390
	09-10	**.884** (.793-.985)	**1.08** (.960-1.30)	**1.89** (1.64-2.28)	**3.04** (2.28-4.21)	**4.30** (3.14-5.60)	401
20-59 years	99-00	**1.53** (1.29-1.83)	**1.50** (1.30-1.80)	**2.90** (2.20-4.30)	**5.90** (3.90-8.90)	**8.90** (6.70-11.0)	832
	01-02	**1.51** (1.32-1.72)	**1.91** (1.44-2.26)	**4.44** (3.90-4.80)	**7.78** (7.00-8.91)	**10.9** (9.52-12.4)	1113
	07-08	**1.19** (1.07-1.33)	**1.36** (1.22-1.53)	**2.55** (2.21-2.98)	**4.46** (3.82-5.30)	**5.85** (5.40-6.93)	1180
	09-10	**.710** (.634-.795)	**.970** (.860-1.12)	**1.89** (1.70-2.07)	**3.14** (2.81-3.49)	**4.18** (3.66-4.73)	1309
60 years and older	01-02	**1.51** (1.21-1.89)	**1.76** (1.22-2.33)	**4.36** (3.54-5.08)	**9.11** (6.67-13.0)	**13.5** (11.2-15.5)	502
	07-08	**1.31** (1.17-1.47)	**1.51** (1.27-1.70)	**2.51** (2.34-2.78)	**4.64** (3.97-5.81)	**6.69** (5.14-8.14)	633
	09-10	**.812** (.710-.929)	**.990** (.870-1.15)	**2.30** (1.73-2.58)	**3.90** (3.16-4.67)	**5.32** (4.23-6.85)	651
Gender							
Males	99-00	**1.92** (1.60-2.32)	**1.90** (1.50-2.40)	**3.60** (2.70-5.60)	**7.40** (5.04-10.0)	**10.0** (7.70-16.0)	972
	01-02	**2.13** (1.82-2.49)	**2.67** (2.24-3.16)	**5.33** (4.81-6.05)	**9.69** (8.45-11.5)	**15.0** (11.7-17.7)	1416
	07-08	**1.49** (1.36-1.64)	**1.70** (1.49-1.92)	**2.85** (2.50-3.17)	**4.87** (4.17-5.52)	**6.01** (5.56-6.67)	1293
	09-10	**.865** (.775-.965)	**1.16** (1.03-1.27)	**2.10** (1.87-2.35)	**3.50** (2.97-3.93)	**4.66** (3.96-5.84)	1343
Females	99-00	**1.63** (1.31-2.02)	**1.50** (1.20-2.00)	**3.30** (2.30-5.30)	**7.20** (4.30-12.0)	**11.0** (7.20-16.0)	1022
	01-02	**1.40** (1.21-1.62)	**1.63** (1.32-2.01)	**4.31** (3.57-4.84)	**7.78** (6.52-9.20)	**10.9** (8.62-13.2)	1595
	07-08	**1.13** (1.04-1.22)	**1.26** (1.13-1.40)	**2.41** (2.15-2.79)	**4.32** (3.76-4.98)	**6.30** (5.27-7.59)	1295
	09-10	**.704** (.631-.786)	**.940** (.830-1.04)	**1.88** (1.63-2.11)	**3.22** (2.78-3.72)	**4.40** (4.09-4.73)	1404
Race/ethnicity							
Mexican Americans	99-00	**1.61** (1.31-2.00)	**1.67** (1.30-2.20)	**3.20** (2.60-3.80)	**5.10** (3.80-8.40)	**7.40** (5.10-17.0)	697
	01-02	**1.98** (1.77-2.21)	**2.54** (2.21-2.89)	**4.55** (4.09-5.22)	**8.94** (7.06-10.4)	**11.9** (10.0-15.7)	744
	07-08	**1.13** (.926-1.38)	**1.26** (1.06-1.53)	**2.34** (1.89-2.94)	**4.04** (3.13-4.92)	**5.36** (4.37-7.16)	500
	09-10	**.761** (.650-.892)	**.950** (.850-1.18)	**1.90** (1.66-2.11)	**3.31** (2.76-4.19)	**4.64** (4.19-5.46)	602
Non-Hispanic blacks	99-00	**2.17** (1.59-2.97)	**1.90** (1.43-2.80)	**4.30** (2.50-8.30)	**9.40** (6.40-13.7)	**13.0** (9.40-26.0)	521
	01-02	**2.14** (1.61-2.84)	**2.85** (2.16-3.38)	**5.45** (4.57-6.96)	**9.27** (7.21-11.7)	**12.9** (9.57-17.5)	776
	07-08	**1.64** (1.36-1.97)	**1.86** (1.47-2.24)	**3.22** (2.65-4.17)	**5.79** (4.85-7.17)	**7.97** (6.49-9.58)	574
	09-10	**.918** (.823-1.02)	**1.22** (1.06-1.38)	**2.24** (2.00-2.52)	**3.49** (2.99-4.14)	**4.99** (3.93-6.17)	504
Non-Hispanic whites	99-00	**1.76** (1.51-2.05)	**1.70** (1.50-2.10)	**3.50** (2.50-4.86)	**7.10** (4.30-11.0)	**10.0** (7.20-14.0)	602
	01-02	**1.67** (1.44-1.94)	**2.11** (1.64-2.47)	**4.85** (4.38-5.29)	**8.91** (7.63-9.97)	**12.9** (10.4-15.7)	1267
	07-08	**1.23** (1.16-1.30)	**1.44** (1.27-1.58)	**2.57** (2.35-2.83)	**4.41** (3.89-4.87)	**5.69** (5.40-6.14)	1084
	09-10	**.768** (.667-.885)	**1.03** (.890-1.18)	**1.96** (1.71-2.31)	**3.42** (2.93-3.86)	**4.46** (3.93-5.32)	1200

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 07-08, and 09-10 are 0.4, 0.4, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorpyrifos_BiomonitoringSummary.html

Urinary 3,5,6-Trichloro-2-pyridinol (creatinine corrected) (1999 - 2010)

Metabolite of Chlorpyrifos and Chlorpyrifos-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.58** (1.35-1.85)	**1.47** (1.24-1.74)	**2.85** (2.12-3.59)	**5.43** (4.22-6.68)	**8.42** (6.25-11.6)	1994
	01-02	**1.75** (1.53-2.00)	**1.94** (1.66-2.25)	**3.80** (3.13-4.48)	**6.53** (5.24-8.23)	**9.27** (7.46-12.1)	3009
	07-08	**1.33** (1.22-1.44)	**1.34** (1.25-1.48)	**2.29** (2.06-2.48)	**3.80** (3.44-4.15)	**4.91** (4.47-5.83)	2586
	09-10	**.812** (.748-.881)	**.979** (.917-1.05)	**1.66** (1.52-1.80)	**2.67** (2.40-2.94)	**3.53** (3.15-4.02)	2747
Age group							
6-11 years	99-00	**3.11** (2.31-4.19)	**3.20** (2.05-4.80)	**6.39** (4.14-8.19)	**10.1** (7.26-14.0)	**14.1** (10.1-21.0)	481
	01-02	**3.48** (2.80-4.32)	**3.76** (3.17-4.36)	**6.22** (4.88-8.57)	**12.2** (7.24-24.4)	**16.9** (12.1-38.0)	573
	07-08	**2.18** (1.89-2.53)	**2.21** (1.86-2.66)	**3.23** (2.86-3.89)	**4.67** (4.23-5.00)	**5.94** (4.76-6.58)	385
	09-10	**1.51** (1.28-1.78)	**1.77** (1.49-1.95)	**2.62** (2.26-2.90)	**3.67** (2.93-4.42)	**4.42** (3.76-5.95)	386
12-19 years	99-00	**1.60** (1.34-1.91)	**1.45** (1.21-1.81)	**2.58** (1.98-3.92)	**4.83** (3.44-6.16)	**6.16** (4.43-10.6)	681
	01-02	**2.09** (1.72-2.55)	**2.24** (1.92-2.66)	**3.97** (3.30-4.72)	**6.33** (5.62-7.89)	**10.3** (7.65-15.2)	822
	07-08	**1.19** (1.05-1.34)	**1.20** (1.05-1.33)	**1.85** (1.61-2.22)	**2.66** (2.32-3.62)	**4.00** (2.70-5.77)	388
	09-10	**.757** (.675-.850)	**.861** (.766-.935)	**1.34** (1.15-1.55)	**2.27** (1.55-2.68)	**2.67** (2.13-4.21)	401
20-59 years	99-00	**1.41** (1.23-1.62)	**1.33** (1.12-1.58)	**2.37** (1.87-3.01)	**4.29** (3.53-5.56)	**6.42** (5.11-9.02)	832
	01-02	**1.49** (1.30-1.71)	**1.64** (1.39-1.88)	**3.11** (2.60-3.91)	**5.51** (4.33-7.23)	**7.44** (5.80-11.0)	1113
	07-08	**1.19** (1.09-1.30)	**1.22** (1.10-1.33)	**2.04** (1.78-2.32)	**3.42** (2.93-3.96)	**4.84** (3.96-6.31)	1180
	09-10	**.710** (.644-.784)	**.875** (.813-.943)	**1.47** (1.35-1.62)	**2.27** (1.99-2.66)	**3.20** (2.75-3.64)	1309
60 years and older	01-02	**1.84** (1.55-2.18)	**2.15** (1.71-2.60)	**4.08** (3.61-4.84)	**7.43** (6.50-8.50)	**11.2** (7.95-13.5)	501
	07-08	**1.61** (1.43-1.81)	**1.68** (1.48-1.92)	**2.88** (2.38-3.46)	**4.46** (3.87-4.91)	**5.59** (4.64-7.03)	633
	09-10	**.963** (.838-1.11)	**1.18** (1.01-1.34)	**2.03** (1.87-2.19)	**3.14** (2.73-4.02)	**4.36** (3.47-5.36)	651
Gender							
Males	99-00	**1.48** (1.27-1.72)	**1.44** (1.19-1.68)	**2.54** (2.05-3.38)	**4.95** (3.84-6.54)	**7.63** (5.65-11.0)	972
	01-02	**1.75** (1.51-2.02)	**1.93** (1.66-2.24)	**3.61** (3.01-4.22)	**6.33** (5.08-8.88)	**11.3** (7.54-13.5)	1416
	07-08	**1.24** (1.13-1.35)	**1.29** (1.15-1.46)	**2.12** (1.87-2.34)	**3.44** (3.03-3.78)	**4.41** (3.82-4.97)	1292
	09-10	**.769** (.712-.831)	**.930** (.863-.988)	**1.55** (1.39-1.70)	**2.54** (2.18-2.80)	**3.41** (3.01-3.93)	1343
Females	99-00	**1.69** (1.42-2.01)	**1.51** (1.25-1.85)	**2.97** (2.25-4.02)	**5.63** (4.27-7.39)	**8.44** (5.79-13.3)	1022
	01-02	**1.75** (1.52-2.02)	**1.96** (1.61-2.30)	**3.96** (3.16-4.78)	**6.58** (5.37-7.95)	**8.98** (7.07-11.8)	1593
	07-08	**1.42** (1.30-1.55)	**1.40** (1.29-1.53)	**2.43** (2.22-2.70)	**4.18** (3.73-4.74)	**5.77** (4.76-7.03)	1294
	09-10	**.855** (.765-.954)	**1.04** (.951-1.14)	**1.76** (1.60-1.96)	**2.79** (2.40-3.18)	**3.68** (3.18-4.10)	1404
Race/ethnicity							
Mexican Americans	99-00	**1.46** (1.20-1.77)	**1.44** (1.05-1.93)	**2.39** (2.09-2.96)	**3.86** (3.24-5.09)	**5.85** (3.88-9.57)	697
	01-02	**1.86** (1.64-2.10)	**2.06** (1.85-2.30)	**3.79** (3.23-4.46)	**6.52** (5.73-7.58)	**8.71** (7.68-11.0)	744
	07-08	**1.15** (.895-1.46)	**1.18** (.941-1.50)	**1.97** (1.55-2.38)	**3.04** (2.31-4.41)	**4.41** (2.92-7.11)	499
	09-10	**.796** (.680-.930)	**.959** (.821-1.07)	**1.58** (1.39-1.76)	**2.61** (2.25-2.99)	**3.46** (3.16-4.01)	602
Non-Hispanic blacks	99-00	**1.47** (1.09-1.99)	**1.33** (.936-1.94)	**2.86** (1.58-5.05)	**5.91** (4.05-8.93)	**9.02** (5.91-13.7)	521
	01-02	**1.58** (1.19-2.08)	**1.95** (1.56-2.48)	**3.53** (2.84-4.28)	**5.60** (4.68-6.40)	**7.21** (5.83-9.11)	775
	07-08	**1.25** (1.05-1.49)	**1.24** (1.03-1.47)	**2.25** (1.86-2.86)	**3.91** (3.13-4.68)	**5.39** (4.12-8.30)	573
	09-10	**.694** (.613-.786)	**.813** (.698-.981)	**1.41** (1.28-1.62)	**2.28** (2.00-2.55)	**2.93** (2.55-3.50)	504
Non-Hispanic whites	99-00	**1.66** (1.45-1.91)	**1.55** (1.31-1.83)	**2.93** (2.09-3.97)	**5.56** (4.21-6.75)	**8.44** (6.25-12.3)	602
	01-02	**1.81** (1.55-2.11)	**2.00** (1.65-2.35)	**3.91** (3.03-4.91)	**6.94** (5.24-9.22)	**10.6** (7.76-12.6)	1266
	07-08	**1.33** (1.22-1.45)	**1.37** (1.26-1.53)	**2.31** (2.02-2.54)	**3.76** (3.40-4.03)	**4.73** (4.35-5.68)	1084
	09-10	**.837** (.750-.934)	**1.01** (.919-1.12)	**1.73** (1.55-1.93)	**2.75** (2.40-3.14)	**3.64** (3.10-4.36)	1200

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorpyrifos_BiomonitoringSummary.html

Urinary Diethylphosphate (DEP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.03** (.670-1.58)	**1.20** (.750-1.70)	**3.20** (2.30-4.80)	**7.60** (5.00-12.0)	**13.0** (7.70-23.0)	1949
	01-02	*	**< LOD**	**2.90** (2.50-3.26)	**6.68** (5.78-7.52)	**10.6** (9.14-12.0)	3018
	03-04	*	**< LOD**	**4.56** (3.57-5.83)	**10.2** (9.00-11.5)	**15.5** (13.5-16.8)	2453
	05-06	*	**< LOD**	**1.46** (.780-2.17)	**7.01** (5.67-8.94)	**13.3** (10.2-16.0)	2635
	07-08	*	**< LOD**	**2.48** (1.44-3.33)	**8.74** (7.51-10.3)	**15.3** (13.1-17.8)	2591
Age group							
6-11 years	99-00	**1.32** (.757-2.29)	**1.50** (.860-2.60)	**4.50** (2.10-7.90)	**11.0** (4.80-24.0)	**16.0** (8.50-36.0)	471
	01-02	*	**.290** (<LOD-1.04)	**3.45** (2.36-4.47)	**9.56** (6.33-18.0)	**20.0** (9.44-38.2)	576
	03-04	*	**< LOD**	**5.13** (2.48-7.94)	**10.9** (8.08-15.9)	**16.1** (10.9-18.5)	308
	05-06	*	**< LOD**	**1.45** (<LOD-4.51)	**8.21** (4.85-13.4)	**13.5** (8.36-20.4)	350
	07-08	*	**< LOD**	**4.31** (.420-6.49)	**12.9** (9.14-17.7)	**20.2** (11.9-37.5)	385
12-19 years	99-00	**1.21** (.758-1.94)	**1.40** (.970-2.10)	**3.70** (2.40-5.50)	**8.00** (4.70-19.0)	**20.0** (8.00-27.0)	664
	01-02	*	**< LOD**	**2.86** (1.96-3.95)	**7.58** (5.71-9.15)	**11.0** (9.35-12.4)	822
	03-04	*	**.530** (<LOD-2.32)	**5.80** (4.34-7.67)	**14.8** (9.12-19.8)	**20.8** (14.8-32.7)	701
	05-06	*	**< LOD**	**.460** (<LOD-3.69)	**9.47** (4.67-14.1)	**14.4** (10.2-22.4)	718
	07-08	*	**< LOD**	**3.81** (<LOD-5.42)	**10.7** (7.76-14.2)	**23.3** (11.3-35.6)	391
20-59 years	99-00	**.955** (.623-1.47)	**1.10** (.700-1.60)	**3.00** (1.80-4.80)	**7.30** (4.70-11.0)	**11.0** (6.80-22.0)	814
	01-02	*	**< LOD**	**2.71** (2.34-3.12)	**5.79** (5.05-7.21)	**10.4** (7.43-12.3)	1122
	03-04	*	**< LOD**	**4.37** (3.02-5.81)	**9.74** (8.35-11.3)	**14.2** (11.5-16.2)	922
	05-06	*	**< LOD**	**1.13** (<LOD-2.17)	**6.15** (4.51-8.24)	**11.5** (8.23-15.5)	1092
	07-08	*	**< LOD**	**1.55** (.470-2.48)	**7.54** (6.10-8.98)	**14.0** (9.62-15.7)	1178
60 years and older	01-02	*	**.440** (<LOD-1.63)	**3.30** (2.63-4.51)	**7.06** (5.17-8.69)	**9.41** (8.31-10.6)	498
	03-04	*	**1.80** (<LOD-2.98)	**4.73** (3.98-5.91)	**10.0** (8.09-11.3)	**13.6** (10.6-16.7)	522
	05-06	*	**< LOD**	**2.69** (1.71-3.95)	**8.33** (6.60-12.0)	**16.3** (12.0-18.7)	475
	07-08	*	**< LOD**	**3.55** (2.80-5.31)	**9.86** (7.53-14.2)	**17.1** (12.6-22.1)	637
Gender							
Males	99-00	**1.11** (.717-1.73)	**1.20** (.810-1.70)	**3.80** (2.50-5.00)	**8.00** (5.00-19.0)	**19.0** (7.20-30.0)	952
	01-02	*	**< LOD**	**3.21** (2.72-3.56)	**6.99** (5.83-7.71)	**11.5** (9.36-12.1)	1420
	03-04	*	**< LOD**	**5.01** (3.90-6.50)	**11.0** (10.1-12.7)	**16.2** (14.3-18.8)	1198
	05-06	*	**< LOD**	**.770** (<LOD-1.71)	**6.82** (5.14-9.54)	**13.4** (9.36-16.1)	1246
	07-08	*	**< LOD**	**1.95** (<LOD-3.34)	**9.39** (7.90-11.8)	**17.0** (13.7-21.5)	1295
Females	99-00	**.954** (.599-1.52)	**1.20** (.620-1.70)	**2.90** (1.90-4.80)	**7.50** (4.60-11.0)	**11.0** (7.40-16.0)	997
	01-02	*	**.290** (<LOD-.790)	**2.63** (2.22-3.03)	**6.21** (4.59-8.64)	**10.2** (7.52-14.7)	1598
	03-04	*	**.110** (<LOD-2.29)	**4.29** (3.21-5.80)	**9.38** (7.95-10.7)	**13.3** (11.2-15.9)	1255
	05-06	*	**< LOD**	**2.15** (1.27-2.76)	**7.23** (5.79-9.32)	**12.9** (9.64-16.0)	1389
	07-08	*	**< LOD**	**2.76** (1.69-3.62)	**7.76** (6.23-10.7)	**14.5** (10.7-18.8)	1296

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.2, 0.2, 0.1, 0.37,and 0.37 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylphosphate (DEP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.22** (.740-2.01)	**1.20** (.840-1.80)	**4.10** (2.20-7.00)	**11.0** (6.40-19.0)	**18.0** (12.0-27.0)	672
	01-02	*	**.600** (<LOD-1.49)	**3.07** (2.22-3.83)	**6.26** (5.00-7.82)	**11.2** (7.82-12.3)	763
	03-04	*	**1.18** (<LOD-2.97)	**5.81** (3.99-7.59)	**11.0** (8.48-16.1)	**16.9** (12.1-24.0)	581
	05-06	*	**< LOD**	**< LOD**	**6.30** (1.57-11.6)	**14.9** (5.72-33.5)	695
	07-08	*	**< LOD**	**1.63** (<LOD-3.88)	**8.36** (6.44-9.61)	**14.8** (8.85-25.1)	501
Non-Hispanic blacks	99-00	**1.56** (1.13-2.14)	**1.60** (1.40-1.80)	**4.30** (2.90-5.80)	**10.0** (5.60-18.0)	**18.0** (8.00-27.0)	509
	01-02	*	**1.03** (<LOD-2.33)	**4.81** (3.48-6.52)	**9.98** (7.39-13.3)	**15.1** (9.81-23.4)	756
	03-04	*	**1.04** (<LOD-3.28)	**6.29** (5.05-8.44)	**11.9** (9.92-15.5)	**16.2** (14.1-22.5)	628
	05-06	*	**< LOD**	**2.10** (<LOD-4.57)	**8.87** (6.52-12.0)	**14.3** (11.2-19.1)	723
	07-08	*	**< LOD**	**3.92** (2.67-5.19)	**11.3** (9.44-14.0)	**19.5** (14.1-22.0)	574
Non-Hispanic whites	99-00	**.981** (.579-1.66)	**1.10** (.490-2.10)	**3.30** (2.20-4.90)	**7.70** (4.70-14.0)	**14.0** (7.60-25.0)	595
	01-02	*	**< LOD**	**2.63** (2.21-3.13)	**5.79** (5.05-7.35)	**9.90** (8.38-11.7)	1253
	03-04	*	**< LOD**	**4.25** (3.12-5.77)	**9.74** (8.37-11.3)	**14.4** (12.4-16.0)	1055
	05-06	*	**< LOD**	**1.50** (.900-2.27)	**6.82** (5.08-9.74)	**13.3** (8.37-16.9)	1007
	07-08	*	**< LOD**	**2.14** (1.27-3.03)	**7.57** (6.57-8.97)	**14.5** (11.4-16.5)	1086

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.2, 0.2, 0.1, 0.37,and 0.37 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylphosphate (DEP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.924** (.608-1.41)	**.920** (.570-1.40)	**2.73** (1.68-4.60)	**7.94** (4.40-12.2)	**12.2** (8.00-19.6)	1949
	01-02	*	**< LOD**	**2.56** (2.17-2.85)	**5.36** (4.75-6.06)	**8.72** (7.19-10.3)	3017
	03-04	*	**< LOD**	**4.64** (3.82-5.79)	**9.18** (7.85-10.8)	**13.1** (10.5-16.1)	2450
	05-06	*	**< LOD**	**2.23** (1.49-3.09)	**7.72** (6.26-9.36)	**13.5** (11.0-19.0)	2634
	07-08	*	**< LOD**	**3.20** (2.37-4.12)	**8.86** (7.52-10.7)	**15.7** (11.9-19.8)	2589
Age group							
6-11 years	99-00	**1.43** (.870-2.34)	**1.47** (1.02-2.41)	**3.94** (2.20-8.57)	**10.5** (4.55-20.8)	**16.6** (10.5-32.7)	471
	01-02	*	**.886** (<LOD-1.76)	**4.02** (2.87-5.25)	**8.85** (6.88-15.6)	**18.4** (9.40-28.8)	576
	03-04	*	**< LOD**	**6.10** (3.79-9.03)	**11.9** (9.54-15.2)	**16.1** (11.9-28.3)	308
	05-06	*	**< LOD**	**3.09** (<LOD-6.77)	**9.50** (5.67-17.6)	**20.7** (9.50-26.5)	350
	07-08	*	**< LOD**	**4.67** (2.01-6.96)	**17.2** (13.1-20.3)	**28.2** (19.3-34.8)	385
12-19 years	99-00	**.818** (.533-1.26)	**.790** (.560-1.25)	**2.35** (1.37-3.75)	**5.44** (2.82-14.4)	**12.4** (4.66-34.2)	664
	01-02	*	**< LOD**	**2.05** (1.54-2.67)	**4.40** (3.40-5.28)	**7.28** (5.28-9.75)	821
	03-04	*	**.438** (<LOD-2.05)	**4.47** (3.90-5.43)	**10.1** (7.10-13.5)	**14.7** (9.82-26.4)	699
	05-06	*	**< LOD**	**1.27** (<LOD-2.81)	**6.74** (4.24-9.87)	**11.7** (6.98-16.6)	718
	07-08	*	**< LOD**	**2.86** (<LOD-4.53)	**8.56** (5.70-17.0)	**17.0** (8.05-23.0)	389
20-59 years	99-00	**.883** (.574-1.36)	**.860** (.500-1.35)	**2.66** (1.54-4.95)	**7.37** (4.32-12.1)	**12.1** (8.00-17.5)	814
	01-02	*	**< LOD**	**2.28** (2.01-2.56)	**4.75** (3.92-5.83)	**7.37** (5.93-9.72)	1122
	03-04	*	**< LOD**	**4.29** (2.98-5.71)	**8.35** (6.09-11.3)	**11.9** (9.02-14.7)	921
	05-06	*	**< LOD**	**1.92** (<LOD-2.95)	**6.64** (5.22-9.25)	**12.3** (9.25-19.4)	1091
	07-08	*	**< LOD**	**2.38** (1.81-3.27)	**7.45** (6.11-9.43)	**11.4** (9.22-15.8)	1178
60+ years	01-02	*	**1.00** (<LOD-1.88)	**3.29** (2.74-4.14)	**6.52** (4.92-8.21)	**9.82** (7.05-14.4)	498
	03-04	*	**2.39** (<LOD-3.35)	**5.65** (4.36-7.50)	**9.44** (8.38-10.5)	**13.3** (10.5-18.2)	522
	05-06	*	**< LOD**	**3.75** (2.30-5.14)	**9.88** (7.72-12.6)	**19.3** (12.6-26.6)	475
	07-08	*	**< LOD**	**5.28** (4.03-6.23)	**11.8** (9.36-14.4)	**17.7** (13.2-21.9)	637
Gender							
Males	99-00	**.855** (.566-1.29)	**.820** (.510-1.34)	**2.61** (1.76-4.03)	**7.69** (4.41-12.1)	**12.2** (6.94-23.8)	952
	01-02	*	**< LOD**	**2.20** (1.86-2.64)	**4.49** (3.92-5.31)	**7.50** (5.79-9.10)	1420
	03-04	*	**< LOD**	**4.20** (3.28-5.30)	**8.35** (7.10-10.1)	**12.0** (9.33-14.7)	1197
	05-06	*	**< LOD**	**1.16** (<LOD-2.25)	**6.24** (4.58-7.63)	**10.0** (7.60-17.8)	1246
	07-08	*	**< LOD**	**2.17** (<LOD-3.23)	**8.14** (6.35-10.7)	**13.6** (9.79-18.6)	1294
Females	99-00	**.996** (.620-1.60)	**.960** (.540-1.62)	**2.81** (1.45-5.85)	**8.00** (4.00-13.0)	**12.1** (6.67-19.6)	997
	01-02	*	**.778** (<LOD-1.31)	**2.81** (2.44-3.33)	**6.49** (4.95-7.76)	**9.61** (7.12-13.6)	1597
	03-04	*	**.636** (<LOD-2.84)	**5.06** (4.03-6.86)	**9.85** (8.25-11.8)	**13.8** (10.9-20.3)	1253
	05-06	*	**< LOD**	**3.50** (2.43-4.11)	**9.36** (6.91-11.8)	**16.5** (12.4-22.3)	1388
	07-08	*	**< LOD**	**4.09** (2.80-4.91)	**9.46** (8.43-11.5)	**16.5** (13.1-20.9)	1295

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylphosphate (DEP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.09** (.633-1.89)	**1.05** (.650-1.98)	**3.78** (2.11-6.46)	**9.84** (5.66-15.7)	**15.7** (8.61-29.0)	672
	01-02	*	**.891** (<LOD-1.41)	**2.39** (1.77-3.14)	**5.17** (4.10-6.53)	**8.04** (6.40-10.9)	763
	03-04	*	**1.07** (<LOD-2.79)	**4.94** (3.30-7.01)	**9.94** (7.89-13.3)	**16.6** (10.1-22.4)	580
	05-06	*	**< LOD**	**< LOD**	**6.26** (3.71-10.1)	**14.9** (5.75-37.3)	695
	07-08	*	**< LOD**	**3.19** (<LOD-4.27)	**8.56** (6.00-10.3)	**13.3** (9.77-15.9)	500
Non-Hispanic blacks	99-00	**1.07** (.773-1.47)	**1.18** (.830-1.54)	**2.61** (1.89-3.47)	**5.98** (3.94-9.56)	**11.9** (5.98-22.2)	509
	01-02	*	**.797** (<LOD-1.62)	**2.98** (2.57-3.61)	**6.91** (5.17-8.69)	**9.58** (7.82-12.1)	755
	03-04	*	**.741** (<LOD-2.21)	**4.25** (3.46-5.36)	**8.30** (6.57-10.7)	**11.7** (10.5-13.2)	627
	05-06	*	**< LOD**	**1.92** (<LOD-3.58)	**7.08** (5.16-9.35)	**11.4** (8.91-12.3)	722
	07-08	*	**< LOD**	**3.33** (2.33-4.15)	**8.72** (7.27-10.2)	**16.7** (11.5-19.4)	573
Non-Hispanic whites	99-00	**.932** (.549-1.58)	**.900** (.430-1.68)	**2.87** (1.51-5.88)	**8.57** (4.40-14.4)	**13.0** (8.21-23.8)	595
	01-02	*	**< LOD**	**2.52** (2.08-2.95)	**5.26** (4.57-5.93)	**8.26** (6.61-10.8)	1253
	03-04	*	**< LOD**	**4.65** (3.73-5.87)	**9.12** (7.79-11.2)	**12.7** (10.1-15.7)	1054
	05-06	*	**< LOD**	**2.50** (1.74-3.30)	**7.72** (6.24-9.25)	**13.9** (10.0-19.5)	1007
	07-08	*	**< LOD**	**3.10** (2.19-4.18)	**8.44** (6.84-9.74)	**13.6** (10.9-17.5)	1086

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylphosphate (DMP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.740** (<LOD-1.40)	**2.90** (2.10-4.00)	**7.90** (6.20-8.90)	**14.0** (10.0-19.0)	1949
	01-02	*	**< LOD**	**3.32** (2.90-3.74)	**8.40** (7.11-9.23)	**13.4** (11.4-14.9)	3017
	03-04	*	**< LOD**	**4.15** (3.39-4.94)	**9.54** (7.46-11.9)	**15.1** (12.8-18.2)	2494
	05-06	*	**< LOD**	**5.21** (4.15-6.56)	**17.2** (13.8-20.5)	**29.6** (24.3-35.2)	2635
	07-08	*	**< LOD**	**7.91** (6.64-9.07)	**20.8** (18.2-24.4)	**35.6** (30.3-39.4)	2593
Age group							
6-11 years	99-00	**1.58** (1.15-2.18)	**1.10** (.580-2.20)	**4.40** (2.80-6.80)	**10.0** (7.80-21.0)	**22.0** (15.0-33.0)	471
	01-02	*	**.970** (<LOD-2.00)	**5.04** (3.31-7.66)	**12.2** (9.10-15.1)	**18.3** (12.6-41.7)	576
	03-04	*	**< LOD**	**4.53** (3.34-5.96)	**11.0** (5.62-17.9)	**16.2** (7.46-28.3)	310
	05-06	*	**< LOD**	**9.92** (3.24-20.0)	**27.1** (16.5-46.6)	**46.6** (27.1-63.0)	350
	07-08	*	**< LOD**	**12.5** (7.22-16.4)	**29.7** (20.3-39.1)	**43.3** (29.7-62.7)	385
12-19 years	99-00	*	**.670** (<LOD-1.80)	**3.80** (2.50-4.90)	**9.90** (6.20-18.0)	**22.0** (13.0-29.0)	664
	01-02	*	**.670** (<LOD-1.31)	**4.27** (3.41-5.35)	**9.27** (7.80-12.3)	**14.7** (11.8-21.3)	822
	03-04	*	**1.20** (<LOD-2.27)	**4.61** (3.47-6.72)	**10.9** (7.90-15.0)	**20.9** (12.5-26.8)	717
	05-06	*	**< LOD**	**7.32** (1.35-12.4)	**22.6** (16.1-36.1)	**44.0** (27.6-54.0)	718
	07-08	*	**< LOD**	**10.0** (7.22-14.5)	**25.5** (16.8-35.6)	**36.2** (25.5-49.6)	391
20-59 years	99-00	*	**.680** (<LOD-1.30)	**2.70** (1.80-3.70)	**6.60** (5.70-8.10)	**9.70** (8.80-14.0)	814
	01-02	*	**< LOD**	**2.95** (2.35-3.41)	**6.95** (5.80-8.82)	**11.5** (9.66-13.7)	1121
	03-04	*	**< LOD**	**3.75** (2.84-4.88)	**8.52** (6.86-10.7)	**14.1** (10.8-17.5)	938
	05-06	*	**< LOD**	**4.09** (2.45-6.03)	**13.8** (9.82-19.8)	**24.6** (19.8-32.8)	1092
	07-08	*	**< LOD**	**6.07** (4.26-7.69)	**18.0** (13.6-22.6)	**30.3** (23.2-37.9)	1180
60 years and older	01-02	*	**.700** (<LOD-1.50)	**3.68** (2.91-4.56)	**8.93** (6.79-10.7)	**14.4** (9.60-19.1)	498
	03-04	*	**2.04** (<LOD-2.63)	**4.60** (3.83-5.15)	**11.3** (7.68-13.4)	**16.3** (12.4-19.4)	529
	05-06	*	**< LOD**	**6.75** (4.75-9.32)	**16.8** (11.7-22.1)	**26.3** (18.9-38.8)	475
	07-08	*	**< LOD**	**10.8** (8.64-13.0)	**24.9** (19.2-32.4)	**40.5** (32.5-47.4)	637
Gender							
Males	99-00	*	**.670** (<LOD-1.30)	**2.90** (2.20-4.00)	**7.90** (6.00-9.30)	**18.0** (10.0-24.0)	952
	01-02	*	**< LOD**	**3.49** (2.90-4.15)	**8.40** (6.95-10.3)	**12.8** (11.3-14.7)	1420
	03-04	*	**< LOD**	**4.03** (3.30-4.91)	**8.49** (6.82-11.9)	**15.1** (11.3-20.0)	1221
	05-06	*	**< LOD**	**4.10** (2.37-6.40)	**15.9** (12.4-20.9)	**28.1** (22.3-36.7)	1246
	07-08	*	**< LOD**	**7.75** (6.50-9.63)	**20.8** (17.6-26.6)	**36.1** (27.0-47.4)	1295
Females	99-00	*	**.790** (<LOD-1.60)	**2.90** (2.00-4.20)	**7.80** (5.70-9.00)	**11.0** (9.00-18.0)	997
	01-02	*	**< LOD**	**3.06** (2.63-3.63)	**8.38** (6.56-9.63)	**13.7** (10.9-17.6)	1597
	03-04	*	**1.08** (<LOD-1.92)	**4.29** (3.31-5.28)	**10.4** (7.64-12.9)	**14.8** (13.3-18.0)	1273
	05-06	*	**< LOD**	**6.40** (5.04-7.21)	**18.7** (14.6-20.8)	**30.9** (24.6-41.1)	1389
	07-08	*	**< LOD**	**7.91** (6.18-9.36)	**20.6** (16.5-25.5)	**34.2** (26.6-41.5)	1298

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.58, 0.5, 0.5, 0.47,and 0.47 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylphosphate (DMP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**1.10** (<LOD-1.80)	**3.80** (2.70-5.30)	**9.60** (6.00-16.0)	**16.0** (8.90-31.0)	672
	01-02	*	**.710** (<LOD-1.52)	**3.34** (2.45-4.42)	**9.13** (7.29-10.7)	**14.4** (11.0-20.6)	763
	03-04	*	**< LOD**	**4.37** (3.12-6.86)	**10.3** (7.85-17.4)	**22.3** (9.61-31.6)	610
	05-06	*	**< LOD**	**2.65** (<LOD-6.47)	**18.9** (13.3-27.9)	**39.0** (30.0-47.2)	695
	07-08	*	**< LOD**	**6.85** (3.69-8.82)	**20.9** (14.1-26.4)	**35.6** (26.3-49.4)	501
Non-Hispanic blacks	99-00	**1.42** (1.16-1.74)	**1.00** (.650-1.50)	**3.60** (2.50-5.50)	**8.90** (6.90-15.0)	**21.0** (14.0-24.0)	509
	01-02	*	**.890** (<LOD-2.20)	**4.71** (3.68-6.62)	**10.7** (8.54-13.9)	**19.4** (14.7-22.8)	755
	03-04	*	**< LOD**	**5.28** (4.18-6.37)	**10.8** (8.33-12.5)	**15.8** (12.2-23.4)	631
	05-06	*	**< LOD**	**9.16** (2.74-15.1)	**22.7** (18.2-33.7)	**42.5** (27.3-61.9)	723
	07-08	*	**< LOD**	**8.67** (6.43-11.1)	**23.7** (18.3-28.6)	**38.0** (27.7-48.1)	574
Non-Hispanic whites	99-00	*	**< LOD**	**2.90** (1.80-4.20)	**7.90** (5.90-9.00)	**11.0** (9.00-18.0)	595
	01-02	*	**< LOD**	**3.13** (2.49-3.58)	**7.79** (6.67-9.22)	**12.5** (10.3-14.7)	1253
	03-04	*	**< LOD**	**3.95** (3.23-4.91)	**8.83** (6.56-12.5)	**14.8** (11.9-20.0)	1061
	05-06	*	**< LOD**	**5.04** (3.60-6.75)	**15.3** (11.8-20.5)	**27.8** (20.8-36.7)	1007
	07-08	*	**< LOD**	**7.46** (6.27-9.03)	**20.7** (17.5-25.5)	**35.6** (28.7-39.1)	1088

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.58, 0.5, 0.5, 0.47,and 0.47 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylphosphate (DMP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.810** (<LOD-1.15)	**2.93** (2.11-3.92)	**8.50** (6.96-10.4)	**16.1** (13.3-17.6)	1949
	01-02	*	**< LOD**	**3.16** (2.69-3.59)	**8.00** (7.12-9.28)	**12.9** (11.5-15.0)	3016
	03-04	*	**< LOD**	**4.05** (3.50-5.15)	**9.96** (8.78-11.2)	**15.0** (13.0-18.1)	2491
	05-06	*	**< LOD**	**5.97** (4.75-7.43)	**18.0** (15.9-20.5)	**27.9** (24.0-32.7)	2634
	07-08	*	**< LOD**	**9.10** (8.08-10.2)	**20.0** (18.0-24.2)	**33.6** (28.8-40.2)	2591
Age group							
6-11 years	99-00	**1.71** (1.29-2.27)	**1.38** (.890-2.38)	**4.48** (2.88-7.89)	**16.7** (8.21-21.2)	**22.1** (19.2-30.1)	471
	01-02	*	**1.93** (<LOD-2.97)	**5.99** (4.32-8.28)	**12.9** (9.34-18.5)	**20.6** (13.3-34.8)	576
	03-04	*	**< LOD**	**6.87** (3.80-9.00)	**13.9** (9.68-19.3)	**19.6** (13.9-25.9)	310
	05-06	*	**< LOD**	**12.4** (6.71-21.9)	**41.2** (23.4-62.2)	**71.5** (37.9-107)	350
	07-08	*	**< LOD**	**15.6** (10.8-21.6)	**35.3** (27.6-39.2)	**54.3** (36.5-67.1)	385
12-19 years	99-00	*	**.590** (<LOD-.950)	**2.28** (1.70-2.80)	**7.78** (4.16-14.4)	**16.0** (8.70-35.3)	664
	01-02	*	**.913** (<LOD-1.27)	**3.29** (2.76-3.78)	**6.29** (5.51-7.30)	**9.83** (7.94-14.2)	821
	03-04	*	**1.00** (<LOD-1.68)	**4.16** (3.37-5.07)	**8.81** (7.78-10.2)	**12.7** (10.3-17.7)	715
	05-06	*	**< LOD**	**5.89** (2.00-10.1)	**18.1** (13.9-24.0)	**28.9** (19.9-37.9)	718
	07-08	*	**< LOD**	**9.10** (5.62-10.9)	**19.9** (15.5-22.5)	**26.1** (19.8-27.2)	389
20-59 years	99-00	*	**.760** (<LOD-1.12)	**2.88** (1.89-3.99)	**8.11** (5.89-10.3)	**14.6** (10.4-16.8)	814
	01-02	*	**< LOD**	**2.55** (2.05-3.03)	**6.92** (5.85-8.00)	**11.5** (9.38-13.6)	1121
	03-04	*	**< LOD**	**3.77** (2.72-4.55)	**8.78** (6.68-10.5)	**13.5** (11.2-15.6)	937
	05-06	*	**< LOD**	**4.71** (3.22-6.50)	**16.3** (13.3-18.7)	**24.0** (19.9-27.6)	1091
	07-08	*	**< LOD**	**7.32** (6.02-8.62)	**17.2** (13.0-20.0)	**28.2** (19.3-40.7)	1180
60+ years	01-02	*	**1.46** (<LOD-2.00)	**4.31** (3.44-5.39)	**10.6** (7.92-12.0)	**14.3** (11.8-18.5)	498
	03-04	*	**2.19** (<LOD-2.69)	**5.88** (4.65-7.51)	**12.3** (9.79-14.8)	**17.4** (13.0-24.2)	529
	05-06	*	**< LOD**	**9.16** (6.36-11.1)	**19.7** (13.7-26.4)	**30.5** (22.0-46.2)	475
	07-08	*	**< LOD**	**12.9** (10.5-15.3)	**29.9** (20.9-38.5)	**45.5** (30.5-80.3)	637
Gender							
Males	99-00	*	**.620** (<LOD-.940)	**2.38** (1.86-3.18)	**7.58** (4.64-11.6)	**15.2** (9.74-19.5)	952
	01-02	*	**< LOD**	**2.77** (2.32-3.19)	**7.06** (5.44-8.80)	**11.2** (9.70-12.7)	1420
	03-04	*	**< LOD**	**3.27** (2.55-3.94)	**8.58** (6.79-10.4)	**12.5** (10.5-15.4)	1220
	05-06	*	**< LOD**	**4.15** (2.16-5.95)	**14.7** (11.1-18.0)	**21.9** (18.9-26.9)	1246
	07-08	*	**< LOD**	**7.08** (5.54-8.54)	**17.5** (15.1-20.4)	**28.0** (21.2-35.4)	1294
Females	99-00	*	**1.00** (<LOD-1.71)	**3.63** (2.30-5.19)	**9.12** (7.82-11.7)	**16.4** (11.7-19.7)	997
	01-02	*	**< LOD**	**3.50** (2.86-4.49)	**9.09** (7.83-10.8)	**15.0** (12.5-17.8)	1596
	03-04	*	**1.67** (<LOD-2.25)	**5.28** (4.05-6.49)	**11.2** (9.65-13.8)	**18.1** (14.8-20.6)	1271
	05-06	*	**< LOD**	**8.22** (6.99-9.20)	**22.0** (17.7-24.9)	**37.9** (27.0-47.2)	1388
	07-08	*	**< LOD**	**10.7** (9.10-12.4)	**24.3** (19.5-28.2)	**38.6** (27.2-54.6)	1297

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylphosphate (DMP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**1.06** (<LOD-1.55)	**3.89** (2.54-5.45)	**9.41** (7.69-11.5)	**16.7** (11.7-23.6)	672
	01-02	*	**.947** (<LOD-1.35)	**3.18** (2.54-3.80)	**8.44** (6.24-10.9)	**14.3** (11.4-16.2)	763
	03-04	*	**< LOD**	**4.16** (2.57-6.30)	**12.3** (7.50-16.5)	**18.8** (15.3-21.5)	609
	05-06	*	**< LOD**	**4.27** (<LOD-8.50)	**19.1** (14.9-22.7)	**29.9** (23.8-39.0)	695
	07-08	*	**< LOD**	**7.47** (5.57-9.46)	**19.9** (16.8-24.7)	**29.8** (24.7-33.4)	500
Non-Hispanic blacks	99-00	**.973** (.780-1.21)	**.690** (.530-1.06)	**2.67** (1.89-3.77)	**7.07** (5.09-11.4)	**14.0** (10.6-19.1)	509
	01-02	*	**.851** (<LOD-1.34)	**3.36** (2.68-4.22)	**7.63** (6.35-9.18)	**13.2** (10.1-14.9)	754
	03-04	*	**< LOD**	**3.70** (2.84-4.48)	**7.52** (6.59-8.89)	**12.7** (8.89-19.3)	630
	05-06	*	**< LOD**	**5.89** (2.56-8.89)	**18.7** (13.1-26.4)	**29.9** (24.0-38.7)	722
	07-08	*	**< LOD**	**6.75** (4.80-8.65)	**20.1** (15.5-25.1)	**30.7** (24.2-37.7)	573
Non-Hispanic whites	99-00	*	**< LOD**	**3.15** (1.97-4.32)	**8.73** (5.89-13.3)	**15.8** (10.0-21.2)	595
	01-02	*	**< LOD**	**3.12** (2.50-3.76)	**8.30** (6.91-10.0)	**13.6** (11.2-16.9)	1253
	03-04	*	**< LOD**	**4.05** (3.49-5.64)	**10.2** (8.83-11.8)	**14.8** (12.1-19.2)	1060
	05-06	*	**< LOD**	**5.97** (4.53-8.08)	**17.7** (15.2-20.6)	**26.3** (23.3-29.3)	1007
	07-08	*	**< LOD**	**9.33** (7.92-10.8)	**20.0** (17.5-24.2)	**35.1** (27.2-43.9)	1088

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylthiophosphate (DETP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.500** (<LOD-.690)	**.760** (.620-1.10)	**1.40** (1.10-1.80)	**2.20** (1.70-2.80)	1949
	01-02	**.484** (.381-.615)	**.630** (.450-.930)	**1.53** (1.33-1.80)	**2.57** (2.28-3.01)	**3.94** (3.26-4.94)	3016
	03-04	*	**< LOD**	**.830** (.710-.960)	**1.83** (1.51-2.30)	**3.00** (2.39-3.78)	2422
	05-06	*	**< LOD**	**.620** (<LOD-.710)	**1.43** (1.17-1.84)	**2.55** (1.94-3.37)	2634
	07-08	*	**< LOD**	**1.00** (.880-1.16)	**2.18** (1.75-2.75)	**4.35** (2.95-6.01)	2590
Age group							
6-11 years	99-00	*	**.600** (<LOD-.810)	**.910** (.720-1.30)	**1.70** (1.20-3.20)	**3.20** (1.70-7.30)	471
	01-02	**.453** (.350-.585)	**.550** (.350-.850)	**1.58** (1.33-2.04)	**2.75** (2.22-3.38)	**4.08** (2.95-5.16)	575
	03-04	*	**< LOD**	**.820** (.580-.970)	**1.45** (1.05-2.16)	**2.18** (1.45-4.13)	296
	05-06	*	**< LOD**	**.700** (<LOD-.950)	**1.38** (1.03-2.05)	**2.15** (1.37-4.06)	350
	07-08	*	**< LOD**	**1.18** (.990-1.42)	**2.93** (2.06-5.58)	**6.44** (2.87-13.2)	385
12-19 years	99-00	*	**.210** (<LOD-.710)	**.780** (.600-1.20)	**1.50** (1.20-2.30)	**2.30** (1.60-4.30)	664
	01-02	**.505** (.388-.657)	**.690** (.440-.960)	**1.61** (1.32-1.94)	**2.57** (2.23-3.39)	**4.08** (2.73-5.86)	822
	03-04	*	**.260** (<LOD-.400)	**.930** (.750-1.13)	**2.14** (1.75-2.89)	**3.27** (2.69-4.83)	690
	05-06	*	**< LOD**	**.700** (<LOD-.920)	**1.42** (1.07-1.94)	**2.46** (1.47-4.42)	717
	07-08	*	**< LOD**	**1.04** (.880-1.45)	**2.20** (1.58-3.11)	**4.02** (2.16-7.07)	390
20-59 years	99-00	*	**.490** (<LOD-.670)	**.740** (.600-.930)	**1.30** (.990-1.80)	**2.00** (1.50-2.60)	814
	01-02	**.449** (.340-.592)	**.540** (.380-.880)	**1.45** (1.19-1.79)	**2.46** (2.11-3.17)	**3.83** (2.96-5.34)	1122
	03-04	*	**< LOD**	**.800** (.650-.960)	**1.76** (1.37-2.32)	**2.65** (2.31-3.89)	919
	05-06	*	**< LOD**	**.600** (<LOD-.680)	**1.42** (1.12-1.77)	**2.45** (1.82-3.31)	1092
	07-08	*	**< LOD**	**.930** (.780-1.22)	**2.16** (1.68-2.76)	**4.20** (2.76-5.92)	1179
60 years and older	01-02	**.662** (.571-.768)	**1.00** (.740-1.14)	**1.77** (1.50-2.10)	**2.81** (2.44-3.46)	**4.45** (2.93-8.31)	497
	03-04	*	**.310** (<LOD-.520)	**.890** (.740-1.05)	**1.99** (1.52-2.67)	**3.72** (2.19-6.81)	517
	05-06	*	**< LOD**	**.660** (<LOD-.840)	**1.62** (1.25-2.31)	**3.20** (2.04-4.18)	475
	07-08	*	**< LOD**	**.980** (.860-1.16)	**2.04** (1.60-3.01)	**4.25** (2.76-5.40)	636
Gender							
Males	99-00	*	**.510** (<LOD-.700)	**.790** (.680-1.10)	**1.50** (1.20-2.20)	**2.70** (1.90-4.10)	952
	01-02	**.495** (.393-.623)	**.660** (.470-.900)	**1.53** (1.37-1.82)	**2.68** (2.28-3.34)	**3.96** (3.07-5.85)	1419
	03-04	*	**.250** (<LOD-.380)	**.890** (.780-1.04)	**2.20** (1.65-2.41)	**3.15** (2.42-4.29)	1174
	05-06	*	**< LOD**	**.590** (<LOD-.720)	**1.48** (1.15-1.97)	**2.61** (1.89-3.58)	1246
	07-08	*	**< LOD**	**1.03** (.890-1.25)	**2.49** (1.82-3.29)	**4.79** (3.44-5.92)	1293
Females	99-00	*	**< LOD**	**.720** (.570-1.00)	**1.30** (.910-1.60)	**1.70** (1.30-3.20)	997
	01-02	**.474** (.360-.624)	**.620** (.410-.960)	**1.51** (1.22-1.86)	**2.49** (2.15-3.04)	**3.94** (2.82-5.27)	1597
	03-04	*	**< LOD**	**.770** (.600-.930)	**1.59** (1.24-2.08)	**2.67** (2.07-3.81)	1248
	05-06	*	**< LOD**	**.630** (.580-.710)	**1.43** (1.14-1.77)	**2.42** (1.78-3.52)	1388
	07-08	*	**< LOD**	**.960** (.840-1.14)	**2.00** (1.60-2.50)	**4.01** (2.41-6.59)	1297

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.09, 0.1, 0.2, 0.56,and 0.56 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylthiophosphate (DETP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**.570** (<LOD-.780)	**.840** (.740-.980)	**1.50** (1.20-1.90)	**2.20** (2.00-2.90)	672
	01-02	**.549** (.403-.749)	**.710** (.470-.960)	**1.40** (1.04-1.97)	**2.63** (2.06-3.14)	**3.98** (2.75-5.21)	763
	03-04	*	**.250** (<LOD-.380)	**.970** (.720-1.52)	**2.35** (1.69-3.83)	**4.19** (2.38-8.80)	584
	05-06	*	**< LOD**	**.700** (<LOD-.900)	**1.42** (.980-2.48)	**2.72** (1.42-4.48)	695
	07-08	*	**< LOD**	**.970** (.830-1.15)	**1.98** (1.60-2.65)	**3.46** (2.78-4.46)	500
Non-Hispanic blacks	99-00	**.343** (.201-.584)	**.570** (<LOD-.750)	**.820** (.690-1.20)	**1.80** (1.30-3.20)	**3.60** (2.00-4.80)	509
	01-02	**.755** (.589-.966)	**1.17** (.740-1.46)	**1.85** (1.73-1.99)	**3.54** (2.95-3.87)	**5.27** (3.89-6.74)	755
	03-04	**.466** (.384-.564)	**.430** (.210-.710)	**1.08** (.930-1.29)	**2.32** (1.74-2.70)	**3.25** (2.55-4.83)	605
	05-06	*	**< LOD**	**.850** (.640-1.18)	**1.74** (1.43-2.27)	**2.96** (2.09-4.20)	722
	07-08	*	**< LOD**	**1.23** (.890-1.40)	**2.85** (2.05-4.12)	**4.81** (4.00-6.59)	574
Non-Hispanic whites	99-00	*	**.160** (<LOD-.700)	**.740** (.580-1.10)	**1.30** (.960-1.90)	**1.90** (1.50-2.80)	595
	01-02	**.464** (.344-.626)	**.600** (.410-.950)	**1.53** (1.27-1.83)	**2.46** (2.15-3.17)	**3.75** (2.82-5.54)	1252
	03-04	*	**< LOD**	**.750** (.610-.890)	**1.75** (1.33-2.20)	**2.68** (2.20-3.78)	1044
	05-06	*	**< LOD**	**.600** (<LOD-.690)	**1.42** (1.04-1.99)	**2.56** (1.82-3.70)	1007
	07-08	*	**< LOD**	**.910** (.820-1.04)	**1.80** (1.56-2.46)	**3.52** (2.20-5.61)	1087

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.09, 0.1, 0.2, 0.56,and 0.56 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylthiophosphate (DETP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.250** (<LOD-.480)	**.710** (.460-1.07)	**1.72** (1.17-2.32)	**2.64** (2.08-3.06)	1949
	01-02	**.496** (.388-.636)	**.569** (.403-.789)	**1.42** (1.16-1.79)	**3.11** (2.58-3.82)	**4.88** (3.78-6.65)	3015
	03-04	*	**< LOD**	**.740** (.667-.839)	**1.59** (1.32-2.05)	**2.87** (2.22-3.77)	2420
	05-06	*	**< LOD**	**.956** (<LOD-1.09)	**1.88** (1.67-2.21)	**2.89** (2.35-3.37)	2633
	07-08	*	**< LOD**	**1.24** (1.15-1.37)	**2.46** (1.98-3.11)	**3.92** (3.05-5.12)	2588
Age group							
6-11 years	99-00	*	**.470** (<LOD-.870)	**1.08** (.800-1.32)	**1.75** (1.44-2.36)	**2.45** (2.04-5.32)	471
	01-02	**.591** (.471-.742)	**.636** (.397-1.05)	**1.63** (1.31-1.94)	**3.22** (2.72-4.16)	**5.70** (3.84-6.80)	575
	03-04	*	**< LOD**	**.869** (.592-1.09)	**1.57** (1.08-2.67)	**2.67** (1.57-4.05)	296
	05-06	*	**< LOD**	**1.23** (<LOD-1.33)	**1.95** (1.60-2.86)	**3.97** (1.95-5.88)	350
	07-08	*	**< LOD**	**1.89** (1.32-2.09)	**3.74** (2.46-5.55)	**6.54** (3.49-16.0)	385
12-19 years	99-00	*	**.180** (<LOD-.400)	**.510** (.320-.820)	**1.07** (.720-1.61)	**1.97** (1.07-3.92)	664
	01-02	**.393** (.300-.515)	**.534** (.313-.735)	**1.23** (.978-1.53)	**2.19** (1.61-3.07)	**3.14** (2.25-3.97)	821
	03-04	*	**.300** (<LOD-.354)	**.645** (.559-.734)	**1.49** (1.16-1.60)	**1.97** (1.57-2.43)	689
	05-06	*	**< LOD**	**.710** (<LOD-.889)	**1.35** (1.00-2.03)	**2.21** (1.35-3.33)	717
	07-08	*	**< LOD**	**.902** (.692-1.15)	**1.78** (1.15-3.32)	**3.32** (1.68-5.48)	388
20-59 years	99-00	*	**.250** (<LOD-.460)	**.680** (.440-1.08)	**1.79** (1.08-2.39)	**2.75** (2.02-3.22)	814
	01-02	**.447** (.335-.597)	**.494** (.316-.742)	**1.32** (.986-1.71)	**2.87** (2.08-3.95)	**4.69** (3.20-7.81)	1122
	03-04	*	**< LOD**	**.700** (.550-.875)	**1.47** (1.11-2.23)	**2.82** (2.02-3.81)	918
	05-06	*	**< LOD**	**.913** (<LOD-1.13)	**1.84** (1.65-2.11)	**2.86** (2.25-3.33)	1091
	07-08	*	**< LOD**	**1.24** (1.09-1.40)	**2.27** (1.79-3.07)	**3.51** (2.59-4.78)	1179
60+ years	01-02	**.821** (.708-.952)	**.971** (.849-1.10)	**2.25** (1.81-2.66)	**3.97** (3.33-5.06)	**5.51** (4.79-8.07)	497
	03-04	*	**.491** (<LOD-.560)	**.933** (.814-1.17)	**2.14** (1.46-3.00)	**3.92** (2.28-8.15)	517
	05-06	*	**< LOD**	**1.11** (<LOD-1.38)	**2.50** (1.67-3.11)	**3.80** (2.86-8.71)	475
	07-08	*	**< LOD**	**1.32** (1.20-1.58)	**2.91** (2.25-3.38)	**4.49** (3.05-9.80)	636
Gender							
Males	99-00	*	**.270** (<LOD-.470)	**.670** (.520-.840)	**1.34** (1.08-2.17)	**2.67** (1.67-3.23)	952
	01-02	**.410** (.319-.526)	**.517** (.342-.721)	**1.22** (1.02-1.41)	**2.46** (1.71-3.18)	**3.67** (2.70-4.71)	1419
	03-04	*	**.276** (<LOD-.326)	**.667** (.560-.804)	**1.49** (1.15-1.91)	**2.87** (1.74-3.72)	1173
	05-06	*	**< LOD**	**.773** (<LOD-.907)	**1.42** (1.21-2.00)	**2.35** (1.90-3.27)	1246
	07-08	*	**< LOD**	**1.02** (.943-1.09)	**1.94** (1.60-2.39)	**3.22** (2.50-4.42)	1292
Females	99-00	*	**< LOD**	**.790** (.380-1.50)	**1.89** (1.07-2.52)	**2.52** (1.89-3.75)	997
	01-02	**.597** (.457-.779)	**.647** (.423-.961)	**1.77** (1.34-2.50)	**3.82** (2.93-5.14)	**6.57** (4.34-9.28)	1596
	03-04	*	**< LOD**	**.821** (.700-.946)	**1.76** (1.34-2.29)	**3.02** (2.25-4.33)	1247
	05-06	*	**< LOD**	**1.17** (1.03-1.38)	**2.21** (1.83-2.50)	**3.18** (2.50-4.47)	1387
	07-08	*	**< LOD**	**1.47** (1.28-1.72)	**2.86** (2.29-3.51)	**4.48** (3.30-5.73)	1296

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylthiophosphate (DETP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**.330** (<LOD-.790)	**.830** (.550-1.20)	**1.69** (1.20-2.43)	**2.71** (1.75-3.78)	672
	01-02	**.520** (.390-.693)	**.570** (.416-.824)	**1.30** (1.05-1.74)	**2.58** (1.82-3.72)	**3.82** (2.77-6.43)	763
	03-04	*	**.329** (<LOD-.414)	**.824** (.555-1.22)	**2.03** (1.26-3.63)	**3.74** (2.47-6.18)	584
	05-06	*	**< LOD**	**.907** (<LOD-1.10)	**1.74** (1.35-2.07)	**2.86** (2.02-4.00)	695
	07-08	*	**< LOD**	**1.20** (.989-1.32)	**2.20** (1.83-2.86)	**3.32** (2.59-5.11)	499
Non-Hispanic blacks	99-00	**.234** (.136-.403)	**.310** (<LOD-.580)	**.720** (.510-.850)	**1.39** (1.03-2.10)	**2.91** (1.49-4.24)	509
	01-02	**.556** (.457-.676)	**.726** (.565-.938)	**1.50** (1.34-1.70)	**2.80** (2.35-3.30)	**4.00** (3.29-4.99)	754
	03-04	**.321** (.270-.381)	**.313** (.231-.407)	**.699** (.561-.831)	**1.45** (1.09-1.75)	**2.64** (1.71-3.64)	604
	05-06	*	**< LOD**	**.720** (.606-.824)	**1.48** (1.24-1.73)	**2.45** (1.76-3.19)	721
	07-08	*	**< LOD**	**1.07** (.880-1.21)	**2.40** (1.85-2.89)	**4.12** (3.19-5.67)	573
Non-Hispanic whites	99-00	*	**.230** (<LOD-.550)	**.710** (.390-1.22)	**1.88** (1.05-2.58)	**2.64** (2.08-3.07)	595
	01-02	**.506** (.373-.687)	**.579** (.368-.850)	**1.51** (1.18-2.00)	**3.38** (2.64-4.35)	**5.83** (3.95-7.81)	1252
	03-04	*	**< LOD**	**.735** (.636-.848)	**1.52** (1.20-2.07)	**2.69** (2.07-3.97)	1043
	05-06	*	**< LOD**	**1.00** (<LOD-1.21)	**2.00** (1.73-2.27)	**3.08** (2.50-3.74)	1007
	07-08	*	**< LOD**	**1.24** (1.07-1.39)	**2.28** (1.71-3.30)	**3.49** (2.56-4.60)	1087

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylthiophosphate (DMTP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.82** (1.36-2.44)	**2.70** (1.40-4.10)	**11.0** (8.40-16.0)	**38.0** (25.0-41.0)	**48.0** (38.0-62.0)	1948
	01-02	*	**.580** (<LOD-1.45)	**4.23** (3.10-5.88)	**17.5** (13.0-22.7)	**32.9** (27.2-45.3)	3016
	03-04	**2.25** (1.98-2.56)	**2.03** (1.73-2.37)	**6.36** (5.11-7.34)	**19.6** (16.2-21.5)	**35.3** (27.4-45.3)	2494
	05-06	**1.96** (1.74-2.20)	**1.71** (1.43-1.94)	**5.34** (4.49-6.08)	**14.2** (10.5-20.8)	**28.2** (22.1-36.0)	2631
	07-08	**2.28** (1.97-2.64)	**2.10** (1.77-2.44)	**5.90** (4.94-7.01)	**18.3** (13.5-23.0)	**36.8** (27.8-45.7)	2591
Age group							
6-11 years	99-00	**2.72** (1.93-3.85)	**4.20** (2.50-7.20)	**20.0** (13.0-29.0)	**40.0** (38.0-52.0)	**62.0** (40.0-92.0)	471
	01-02	*	**1.46** (.600-2.69)	**8.33** (5.75-14.0)	**28.4** (19.7-41.4)	**45.7** (28.5-74.5)	575
	03-04	**2.79** (2.25-3.45)	**2.67** (1.81-3.88)	**6.95** (5.64-8.58)	**19.4** (10.5-27.4)	**30.9** (19.4-76.5)	310
	05-06	**2.70** (2.25-3.26)	**2.38** (1.76-3.33)	**8.21** (4.96-11.8)	**21.4** (12.7-40.7)	**40.7** (18.3-90.4)	349
	07-08	**3.43** (2.88-4.09)	**3.50** (2.69-4.10)	**9.90** (7.14-13.9)	**32.0** (19.1-45.7)	**52.5** (36.7-67.4)	385
12-19 years	99-00	**2.53** (1.64-3.92)	**3.70** (1.70-6.80)	**16.0** (11.0-31.0)	**38.0** (33.0-58.0)	**69.0** (38.0-260)	664
	01-02	*	**1.04** (<LOD-2.12)	**4.83** (3.35-6.48)	**20.8** (12.2-27.9)	**34.9** (23.6-54.7)	822
	03-04	**2.21** (1.81-2.70)	**1.83** (1.46-2.16)	**5.91** (4.04-8.78)	**18.7** (12.2-33.9)	**47.1** (22.2-80.8)	717
	05-06	**2.51** (2.00-3.16)	**2.53** (1.90-3.02)	**6.44** (4.91-8.77)	**21.7** (13.1-28.2)	**38.5** (25.3-79.2)	717
	07-08	**2.10** (1.68-2.61)	**1.82** (1.53-2.31)	**5.18** (3.55-7.48)	**13.6** (8.16-27.9)	**31.5** (12.4-54.5)	391
20-59 years	99-00	**1.59** (1.17-2.16)	**2.30** (.830-3.80)	**9.10** (7.10-13.0)	**38.0** (19.0-39.0)	**39.0** (38.0-58.0)	813
	01-02	*	**< LOD**	**3.32** (2.29-4.96)	**13.6** (9.50-20.0)	**30.0** (20.5-45.3)	1121
	03-04	**1.98** (1.71-2.30)	**1.78** (1.48-2.18)	**5.11** (4.31-6.53)	**16.7** (12.1-20.8)	**28.5** (24.1-40.0)	938
	05-06	**1.72** (1.50-1.97)	**1.37** (1.20-1.73)	**4.25** (3.68-5.22)	**12.4** (8.37-19.6)	**26.6** (16.4-37.9)	1092
	07-08	**2.03** (1.68-2.46)	**1.90** (1.46-2.39)	**5.18** (4.24-6.09)	**13.3** (10.4-19.2)	**30.6** (21.4-44.6)	1179
60 years and older	01-02	*	**.860** (<LOD-2.16)	**5.85** (3.33-9.56)	**19.6** (13.0-27.9)	**32.9** (22.7-51.0)	498
	03-04	**3.18** (2.47-4.08)	**2.64** (2.16-3.81)	**9.63** (6.32-15.5)	**25.0** (15.5-45.3)	**45.3** (20.9-119)	529
	05-06	**2.18** (1.81-2.63)	**2.03** (1.46-2.68)	**6.38** (4.62-8.23)	**14.0** (9.72-20.9)	**25.2** (18.2-37.6)	473
	07-08	**2.91** (2.37-3.58)	**2.57** (1.99-3.18)	**9.19** (5.54-13.0)	**26.2** (19.4-32.5)	**42.7** (30.5-54.1)	636
Gender							
Males	99-00	**2.10** (1.48-2.98)	**3.50** (2.20-4.80)	**14.0** (8.00-24.0)	**38.0** (21.0-49.0)	**42.0** (38.0-53.0)	952
	01-02	*	**.690** (<LOD-1.52)	**4.44** (3.32-6.48)	**18.3** (12.7-25.6)	**31.1** (25.0-43.3)	1420
	03-04	**2.30** (1.95-2.70)	**2.15** (1.70-2.53)	**6.42** (4.90-7.75)	**18.8** (13.3-22.5)	**30.0** (23.3-45.3)	1221
	05-06	**1.88** (1.64-2.14)	**1.61** (1.28-1.94)	**5.38** (3.96-6.38)	**13.1** (9.59-20.9)	**28.7** (19.5-41.7)	1243
	07-08	**2.33** (2.00-2.71)	**2.15** (1.85-2.50)	**5.98** (4.78-7.26)	**16.7** (11.8-24.7)	**31.5** (21.2-48.9)	1293
Females	99-00	**1.59** (1.23-2.06)	**2.00** (.690-3.60)	**9.70** (7.30-14.0)	**38.0** (26.0-39.0)	**52.0** (38.0-110)	996
	01-02	*	**.430** (<LOD-1.45)	**3.81** (2.68-5.85)	**16.0** (10.9-22.7)	**35.2** (25.0-46.1)	1596
	03-04	**2.21** (1.92-2.55)	**1.95** (1.68-2.29)	**6.27** (4.93-7.39)	**20.4** (16.4-24.0)	**36.7** (27.7-47.8)	1273
	05-06	**2.04** (1.79-2.33)	**1.75** (1.46-2.13)	**5.23** (4.49-6.10)	**15.6** (10.9-20.8)	**28.1** (20.8-37.9)	1388
	07-08	**2.24** (1.88-2.66)	**1.99** (1.57-2.52)	**5.85** (4.92-7.31)	**18.7** (13.4-26.0)	**37.7** (27.0-50.1)	1298

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.18, 0.4, 0.5, 0.55,and 0.55 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

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Urinary Dimethylthiophosphate (DMTP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.79** (1.05-3.05)	**2.00** (.530-4.40)	**11.0** (6.70-17.0)	**39.0** (32.0-62.0)	**140** (46.0-230)	671
	01-02	*	**< LOD**	**3.93** (3.05-5.06)	**15.1** (11.1-19.1)	**35.6** (22.7-46.0)	763
	03-04	**2.41** (1.88-3.09)	**2.54** (1.41-3.98)	**6.43** (4.90-8.02)	**17.2** (12.0-22.3)	**28.9** (19.2-39.8)	610
	05-06	**2.37** (2.07-2.71)	**2.26** (1.95-2.68)	**5.65** (4.86-6.44)	**16.4** (12.9-21.4)	**28.3** (23.3-41.4)	693
	07-08	**2.10** (1.83-2.42)	**1.98** (1.63-2.31)	**5.18** (4.17-6.61)	**13.6** (11.5-20.0)	**31.0** (20.0-43.5)	501
Non-Hispanic blacks	99-00	**2.13** (1.57-2.88)	**3.60** (2.10-4.70)	**12.0** (8.80-18.0)	**38.0** (20.0-41.0)	**41.0** (37.0-110)	509
	01-02	**1.54** (1.15-2.07)	**1.18** (.580-1.97)	**5.21** (3.11-8.25)	**20.0** (13.4-27.2)	**39.1** (25.9-62.8)	755
	03-04	**2.13** (1.83-2.48)	**1.85** (1.65-2.20)	**5.44** (3.87-8.28)	**20.4** (15.8-24.9)	**31.1** (24.9-51.9)	631
	05-06	**1.94** (1.63-2.31)	**1.63** (1.23-2.02)	**5.21** (3.93-7.18)	**16.8** (13.3-21.6)	**28.4** (21.5-40.6)	723
	07-08	**2.12** (1.89-2.38)	**1.97** (1.64-2.26)	**5.63** (4.15-6.94)	**20.8** (12.9-23.9)	**33.5** (26.3-47.6)	573
Non-Hispanic whites	99-00	**1.77** (1.23-2.53)	**2.70** (.830-4.40)	**11.0** (7.50-17.0)	**38.0** (17.0-53.0)	**48.0** (38.0-69.0)	595
	01-02	*	**.540** (<LOD-1.71)	**4.21** (2.77-6.48)	**18.8** (10.9-25.4)	**33.1** (26.6-46.5)	1252
	03-04	**2.31** (2.00-2.66)	**2.07** (1.73-2.41)	**6.51** (5.12-7.85)	**19.8** (15.4-23.3)	**36.7** (27.4-47.8)	1061
	05-06	**1.94** (1.67-2.26)	**1.76** (1.40-1.99)	**5.33** (4.32-6.19)	**13.6** (9.80-22.1)	**28.9** (20.2-42.8)	1005
	07-08	**2.22** (1.83-2.69)	**1.96** (1.57-2.48)	**5.84** (4.70-7.68)	**17.1** (12.4-24.3)	**37.3** (25.9-48.7)	1088

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.18, 0.4, 0.5, 0.55,and 0.55 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylthiophosphate (DMTP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.64** (1.22-2.20)	**2.12** (1.22-3.35)	**9.57** (6.59-15.8)	**32.0** (23.9-41.1)	**51.0** (39.0-70.1)	1948
	01-02	*	**.933** (<LOD-1.40)	**4.08** (2.65-6.06)	**14.6** (11.5-20.5)	**28.9** (24.7-39.4)	3015
	03-04	**2.21** (1.92-2.55)	**1.98** (1.69-2.38)	**5.96** (5.07-7.16)	**19.1** (14.8-22.4)	**32.6** (25.8-41.9)	2491
	05-06	**1.99** (1.76-2.26)	**1.75** (1.56-1.90)	**5.00** (4.16-6.24)	**16.8** (11.8-22.1)	**30.0** (24.1-38.3)	2630
	07-08	**2.34** (2.05-2.66)	**2.00** (1.77-2.31)	**5.91** (4.88-7.09)	**17.5** (13.9-23.2)	**33.7** (25.7-45.9)	2589
Age group							
6-11 years	99-00	**2.95** (2.25-3.86)	**5.32** (3.75-6.33)	**19.1** (12.2-28.0)	**47.0** (32.1-60.3)	**66.1** (50.9-95.0)	471
	01-02	*	**2.16** (1.32-3.12)	**10.6** (7.84-13.6)	**28.7** (18.8-45.0)	**48.1** (33.4-71.1)	575
	03-04	**3.40** (2.70-4.28)	**3.41** (2.40-4.17)	**7.91** (6.43-12.2)	**25.2** (16.7-34.2)	**36.1** (25.4-67.7)	310
	05-06	**3.35** (2.67-4.21)	**2.78** (2.03-3.66)	**9.26** (5.67-15.1)	**33.4** (16.8-54.3)	**71.5** (28.7-161)	349
	07-08	**4.35** (3.78-5.01)	**4.26** (3.36-4.75)	**14.1** (9.35-16.6)	**32.8** (23.8-45.4)	**51.3** (41.1-77.9)	385
12-19 years	99-00	**1.71** (1.07-2.75)	**2.14** (.890-4.83)	**13.5** (6.46-22.6)	**36.0** (25.6-51.4)	**61.5** (41.7-109)	664
	01-02	*	**.933** (<LOD-1.57)	**3.56** (2.38-5.57)	**12.2** (8.96-16.0)	**22.5** (13.2-34.7)	821
	03-04	**1.66** (1.37-2.03)	**1.52** (1.19-1.82)	**4.38** (3.29-5.66)	**13.3** (9.94-20.5)	**26.5** (15.5-36.0)	715
	05-06	**1.89** (1.54-2.33)	**1.81** (1.38-2.33)	**4.55** (3.47-6.17)	**14.3** (8.75-27.5)	**32.9** (14.3-51.4)	717
	07-08	**1.62** (1.27-2.06)	**1.46** (1.19-1.74)	**4.14** (3.12-5.52)	**11.1** (5.52-20.5)	**20.5** (9.61-32.2)	389
20-59 years	99-00	**1.47** (1.07-2.02)	**1.90** (.870-3.11)	**8.09** (5.19-14.6)	**27.0** (19.8-37.6)	**47.5** (34.2-70.1)	813
	01-02	*	**< LOD**	**3.16** (1.99-4.62)	**11.9** (7.79-17.2)	**25.2** (15.9-37.0)	1121
	03-04	**1.88** (1.61-2.19)	**1.67** (1.45-1.94)	**4.88** (4.20-5.68)	**13.9** (10.3-19.7)	**30.3** (19.7-38.2)	937
	05-06	**1.72** (1.52-1.96)	**1.46** (1.28-1.65)	**4.18** (3.14-4.99)	**13.2** (9.30-21.9)	**25.4** (21.4-30.3)	1091
	07-08	**2.02** (1.73-2.36)	**1.79** (1.52-2.05)	**4.53** (3.90-5.90)	**13.2** (9.47-17.2)	**26.7** (17.1-41.8)	1179
60+ years	01-02	*	**1.39** (<LOD-2.40)	**6.38** (3.68-9.97)	**24.0** (14.9-35.2)	**45.5** (26.5-69.7)	498
	03-04	**3.86** (2.99-4.97)	**3.18** (2.46-4.84)	**11.2** (7.10-18.6)	**29.2** (18.6-47.9)	**48.2** (24.9-113)	529
	05-06	**2.61** (2.12-3.20)	**2.40** (1.75-2.75)	**7.66** (5.71-11.3)	**19.2** (12.1-31.1)	**35.3** (20.5-56.4)	473
	07-08	**3.56** (2.79-4.55)	**3.05** (2.31-4.13)	**10.6** (6.86-14.8)	**31.8** (17.7-50.2)	**54.2** (34.1-87.5)	636
Gender							
Males	99-00	**1.61** (1.11-2.34)	**2.39** (1.27-3.51)	**9.27** (6.00-16.9)	**28.9** (19.0-40.4)	**41.1** (34.9-52.9)	952
	01-02	*	**.778** (<LOD-1.14)	**3.82** (2.65-4.98)	**13.6** (10.0-17.8)	**25.2** (17.2-37.6)	1420
	03-04	**1.88** (1.58-2.23)	**1.76** (1.51-2.12)	**4.87** (3.87-6.31)	**14.4** (9.18-20.4)	**25.7** (17.7-36.9)	1220
	05-06	**1.59** (1.37-1.86)	**1.33** (1.14-1.57)	**4.06** (2.85-5.27)	**13.1** (8.56-20.5)	**26.0** (17.2-34.2)	1243
	07-08	**1.93** (1.68-2.21)	**1.62** (1.42-1.94)	**4.36** (3.77-5.50)	**14.2** (10.4-17.7)	**25.9** (18.2-39.7)	1292
Females	99-00	**1.66** (1.26-2.18)	**2.01** (.870-3.33)	**10.0** (6.67-16.2)	**34.9** (26.2-47.1)	**70.1** (39.0-118)	996
	01-02	*	**1.08** (<LOD-1.65)	**4.44** (2.55-7.02)	**17.4** (11.9-24.8)	**38.0** (27.4-51.6)	1595
	03-04	**2.60** (2.23-3.02)	**2.24** (1.83-2.63)	**7.11** (5.54-10.2)	**22.8** (18.9-28.7)	**41.6** (29.2-58.9)	1271
	05-06	**2.47** (2.16-2.83)	**2.19** (1.83-2.44)	**6.07** (4.74-8.34)	**20.7** (13.8-25.6)	**36.7** (26.1-46.2)	1387
	07-08	**2.81** (2.40-3.29)	**2.50** (2.07-2.93)	**7.40** (5.83-8.83)	**21.9** (16.7-27.4)	**41.2** (27.4-60.8)	1297

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylthiophosphate (DMTP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.60** (.899-2.86)	**1.83** (.680-4.23)	**10.4** (5.95-16.9)	**37.0** (23.1-63.1)	**112** (40.5-190)	671
	01-02	*	**< LOD**	**3.55** (2.65-4.68)	**13.8** (9.88-22.9)	**30.4** (22.9-47.2)	763
	03-04	**2.20** (1.65-2.94)	**2.24** (1.70-3.00)	**5.95** (4.14-8.68)	**15.7** (10.7-20.1)	**24.5** (18.9-36.9)	609
	05-06	**2.24** (1.96-2.55)	**2.14** (1.89-2.40)	**5.19** (4.33-6.18)	**14.7** (10.9-20.0)	**28.4** (21.5-36.3)	693
	07-08	**2.14** (1.92-2.38)	**1.88** (1.61-2.22)	**4.84** (4.08-6.48)	**13.2** (10.0-18.6)	**26.2** (18.6-34.1)	500
Non-Hispanic blacks	99-00	**1.45** (1.03-2.06)	**1.75** (1.17-3.06)	**8.48** (4.36-13.4)	**25.5** (15.4-39.3)	**54.4** (25.5-97.6)	509
	01-02	**1.13** (.889-1.44)	**1.00** (.693-1.23)	**3.62** (2.29-5.41)	**12.4** (9.17-17.5)	**23.3** (17.4-43.1)	754
	03-04	**1.46** (1.28-1.67)	**1.22** (1.06-1.37)	**3.90** (2.77-5.34)	**12.7** (8.09-18.7)	**26.0** (14.6-38.7)	630
	05-06	**1.40** (1.14-1.71)	**1.12** (.938-1.37)	**3.58** (2.63-5.06)	**12.0** (8.44-19.3)	**25.6** (17.4-31.2)	722
	07-08	**1.61** (1.45-1.80)	**1.38** (1.22-1.61)	**4.26** (3.41-5.20)	**14.7** (10.7-18.8)	**27.5** (20.9-37.4)	572
Non-Hispanic whites	99-00	**1.68** (1.16-2.43)	**2.22** (.870-3.51)	**9.40** (5.58-17.0)	**33.3** (20.6-49.4)	**52.9** (39.0-71.1)	595
	01-02	*	**.966** (<LOD-1.61)	**4.22** (2.41-7.00)	**15.9** (11.6-24.1)	**33.1** (24.8-45.4)	1252
	03-04	**2.40** (2.05-2.81)	**2.12** (1.75-2.53)	**6.27** (5.10-8.10)	**20.0** (15.3-25.7)	**36.2** (25.7-52.7)	1060
	05-06	**2.09** (1.80-2.42)	**1.78** (1.56-2.06)	**5.14** (4.02-6.91)	**16.8** (11.3-23.4)	**30.0** (23.4-38.3)	1005
	07-08	**2.40** (1.99-2.90)	**2.04** (1.67-2.57)	**6.00** (4.64-7.49)	**16.9** (13.0-25.3)	**37.6** (23.1-54.2)	1088

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethyldithiophosphate (DEDTP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.090** (<LOD-.140)	**.210** (.140-.290)	**.470** (.380-.640)	**.870** (.640-1.10)	1949
	01-02	*	**< LOD**	**< LOD**	**.610** (.410-.780)	**.890** (.710-1.32)	3013
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.290** (.160-.510)	2494
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2420
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2585
Age group							
6-11 years	99-00	*	**.090** (<LOD-.160)	**.190** (.130-.280)	**.430** (.300-.650)	**.850** (.470-1.00)	471
	01-02	*	**< LOD**	**< LOD**	**.630** (.380-.870)	**.940** (.690-1.42)	576
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.540** (<LOD-.650)	310
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	317
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	383
12-19 years	99-00	*	**.080** (<LOD-.180)	**.260** (.120-.350)	**.640** (.420-.840)	**.930** (.720-1.30)	664
	01-02	*	**< LOD**	**< LOD**	**.560** (.330-.730)	**.820** (.610-.990)	822
	03-04	*	**< LOD**	**< LOD**	**.150** (<LOD-.350)	**.450** (.370-.570)	717
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	660
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	390
20-59 years	99-00	*	**.090** (<LOD-.130)	**.210** (.130-.290)	**.450** (.360-.640)	**.900** (.610-1.10)	814
	01-02	*	**< LOD**	**< LOD**	**.620** (.430-.760)	**.830** (.700-1.32)	1118
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.220** (<LOD-.580)	938
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1006
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1176
60 years and older	01-02	*	**< LOD**	**< LOD**	**.630** (.360-1.08)	**1.11** (.610-1.41)	497
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.150** (<LOD-.550)	529
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	437
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	636
Gender							
Males	99-00	*	**.090** (<LOD-.150)	**.220** (.140-.310)	**.490** (.380-.680)	**.870** (.680-1.10)	952
	01-02	*	**< LOD**	**< LOD**	**.600** (.380-.740)	**.780** (.700-1.03)	1420
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.390** (.160-.540)	1221
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1142
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1290
Females	99-00	*	**.090** (<LOD-.130)	**.190** (.110-.310)	**.460** (.320-.840)	**.870** (.440-1.40)	997
	01-02	*	**< LOD**	**< LOD**	**.660** (.460-.880)	**1.03** (.700-1.47)	1593
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.230** (<LOD-.600)	1273
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1278
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1295

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.05, 0.1, 0.1, 0.39,and 0.39 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethyldithiophosphate (DEDTP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.130** (.099-.171)	**.100** (.050-.200)	**.310** (.230-.390)	**.650** (.530-.860)	**1.10** (.860-1.60)	672
	01-02	*	**< LOD**	**.200** (<LOD-.520)	**.720** (.410-1.12)	**1.12** (.700-1.58)	763
	03-04	*	**< LOD**	**< LOD**	**.110** (<LOD-.680)	**.680** (.180-1.15)	610
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	665
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	495
Non-Hispanic blacks	99-00	**.117** (.084-.162)	**.090** (<LOD-.230)	**.270** (.140-.410)	**.560** (.400-.830)	**.870** (.650-1.20)	509
	01-02	*	**< LOD**	**< LOD**	**.620** (.440-.800)	**.810** (.670-.930)	754
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.250** (.110-.540)	631
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	660
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	574
Non-Hispanic whites	99-00	*	**.080** (<LOD-.160)	**.190** (.120-.290)	**.450** (.310-.720)	**.870** (.510-1.30)	595
	01-02	*	**< LOD**	**< LOD**	**.610** (.350-.800)	**.910** (.660-1.41)	1252
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.240** (.120-.540)	1061
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	917
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1087

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.05, 0.1, 0.1, 0.39,and 0.39 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethyldithiophosphate (DEDTP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.070** (<LOD-.110)	**.200** (.140-.290)	**.550** (.390-.700)	**.860** (.670-1.14)	1949
	01-02	*	**< LOD**	**< LOD**	**.604** (.389-.783)	**1.08** (.768-1.52)	3012
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.412** (.350-.507)	2491
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2419
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2583
Age group							
6-11 years	99-00	*	**.100** (<LOD-.140)	**.190** (.150-.270)	**.570** (.410-.760)	**1.03** (.570-1.58)	471
	01-02	*	**< LOD**	**< LOD**	**.778** (.606-1.12)	**1.36** (1.02-1.86)	576
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.475** (<LOD-.967)	310
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	317
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	383
12-19 years	99-00	*	**.050** (<LOD-.080)	**.170** (.100-.220)	**.440** (.230-.730)	**.730** (.380-1.09)	664
	01-02	*	**< LOD**	**< LOD**	**.359** (.250-.537)	**.667** (.375-.987)	821
	03-04	*	**< LOD**	**< LOD**	**.226** (<LOD-.259)	**.333** (.241-.600)	715
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	660
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	388
20-59 years	99-00	*	**.080** (<LOD-.110)	**.210** (.140-.310)	**.550** (.360-.730)	**.860** (.650-1.20)	814
	01-02	*	**< LOD**	**< LOD**	**.583** (.379-.740)	**1.03** (.699-1.60)	1118
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.400** (<LOD-.537)	937
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1005
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1176
60+ years	01-02	*	**< LOD**	**< LOD**	**.833** (.368-1.28)	**1.44** (.853-2.61)	497
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.438** (<LOD-.700)	529
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	437
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	636
Gender							
Males	99-00	*	**.070** (<LOD-.110)	**.190** (.140-.230)	**.410** (.340-.500)	**.720** (.520-.940)	952
	01-02	*	**< LOD**	**< LOD**	**.389** (.309-.658)	**.768** (.637-1.01)	1420
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.339** (.269-.412)	1220
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1142
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1289
Females	99-00	*	**.090** (<LOD-.120)	**.220** (.140-.360)	**.670** (.410-.870)	**.890** (.660-1.62)	997
	01-02	*	**< LOD**	**< LOD**	**.733** (.527-1.03)	**1.27** (.868-2.37)	1592
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.604)	1271
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1277
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1294

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethyldithiophosphate (DEDTP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.116** (.084-.161)	**.090** (.060-.170)	**.300** (.190-.410)	**.810** (.570-.990)	**1.19** (.860-2.66)	672
	01-02	*	**< LOD**	**.292** (<LOD-.444)	**.845** (.487-1.24)	**1.29** (.901-1.67)	763
	03-04	*	**< LOD**	**< LOD**	**.318** (<LOD-.467)	**.579** (.404-.940)	609
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	665
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	494
Non-Hispanic blacks	99-00	**.080** (.057-.111)	**.070** (<LOD-.110)	**.170** (.110-.280)	**.450** (.300-.580)	**.700** (.500-1.02)	509
	01-02	*	**< LOD**	**< LOD**	**.456** (.362-.593)	**.769** (.541-1.07)	753
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.269** (.196-.368)	630
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	659
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	573
Non-Hispanic whites	99-00	*	**.070** (<LOD-.120)	**.200** (.140-.310)	**.560** (.380-.730)	**.880** (.600-1.38)	595
	01-02	*	**< LOD**	**< LOD**	**.583** (.368-.868)	**1.14** (.682-1.70)	1252
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.389** (.333-.523)	1060
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	917
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1087

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethyldithiophosphate (DMDTP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	**2.30** (1.30-3.90)	**13.0** (5.00-17.0)	**19.0** (17.0-38.0)	1949
	01-02	*	< LOD	**.920** (.330-1.30)	**2.61** (2.04-3.45)	**5.96** (4.41-7.90)	3015
	03-04	*	< LOD	**.700** (.570-.920)	**2.54** (1.64-3.87)	**5.74** (3.63-9.85)	2458
	05-06	*	< LOD	< LOD	**1.96** (1.41-2.59)	**3.87** (2.77-6.09)	2635
	07-08	*	< LOD	< LOD	**2.37** (1.93-2.93)	**5.60** (4.62-6.79)	2571
Age group							
6-11 years	99-00	**.691** (.425-1.12)	**.740** (.080-1.80)	**4.30** (2.40-8.60)	**17.0** (6.90-37.0)	**32.0** (17.0-44.0)	471
	01-02	*	< LOD	**1.30** (.750-2.11)	**3.53** (2.20-4.50)	**7.33** (4.32-9.74)	575
	03-04	*	< LOD	**.900** (.620-1.14)	**2.94** (1.14-5.48)	**5.48** (2.94-8.53)	306
	05-06	*	< LOD	< LOD	**1.84** (.540-3.35)	**3.69** (2.67-9.95)	350
	07-08	*	< LOD	**.950** (<LOD-1.48)	**3.80** (2.45-5.70)	**6.66** (5.11-9.64)	379
12-19 years	99-00	*	< LOD	**2.30** (1.40-4.50)	**13.0** (5.40-20.0)	**20.0** (17.0-38.0)	664
	01-02	*	< LOD	**.830** (.400-1.14)	**2.52** (1.85-3.07)	**4.63** (3.59-5.83)	821
	03-04	*	< LOD	**.580** (.350-.770)	**1.46** (1.12-1.99)	**2.67** (1.82-4.49)	699
	05-06	*	< LOD	< LOD	**2.78** (1.51-3.76)	**5.98** (3.03-11.5)	718
	07-08	*	< LOD	< LOD	**1.45** (.810-2.03)	**2.45** (1.65-3.93)	384
20-59 years	99-00	*	< LOD	**2.10** (.840-3.60)	**11.0** (4.00-17.0)	**17.0** (7.70-50.0)	814
	01-02	*	< LOD	**.840** (<LOD-1.31)	**2.32** (1.70-3.40)	**4.90** (2.90-9.52)	1122
	03-04	*	< LOD	**.610** (.350-.800)	**2.00** (1.36-3.63)	**5.07** (3.62-8.62)	925
	05-06	*	< LOD	< LOD	**1.71** (.880-2.36)	**3.60** (2.40-5.18)	1092
	07-08	*	< LOD	< LOD	**1.84** (1.34-2.32)	**4.27** (2.84-6.79)	1172
60 years and older	01-02	*	< LOD	**1.02** (.540-1.37)	**3.57** (2.58-5.96)	**8.16** (5.04-16.1)	497
	03-04	*	< LOD	**1.39** (.720-2.34)	**4.09** (2.35-13.4)	**13.4** (3.36-33.3)	528
	05-06	*	< LOD	< LOD	**2.13** (1.67-3.34)	**5.12** (2.62-8.17)	475
	07-08	*	< LOD	**1.03** (<LOD-1.99)	**5.47** (4.31-6.33)	**8.89** (6.33-12.2)	636
Gender							
Males	99-00	*	**.110** (<LOD-.610)	**2.30** (1.20-4.90)	**16.0** (5.70-17.0)	**19.0** (17.0-38.0)	952
	01-02	*	< LOD	**.890** (.370-1.28)	**2.59** (1.88-3.41)	**5.96** (4.47-7.86)	1420
	03-04	*	< LOD	**.680** (.360-1.01)	**2.26** (1.14-4.45)	**5.30** (3.20-10.2)	1209
	05-06	*	< LOD	< LOD	**1.96** (.980-3.04)	**4.33** (2.42-7.65)	1246
	07-08	*	< LOD	< LOD	**2.38** (1.76-3.70)	**5.70** (3.80-10.0)	1278
Females	99-00	*	< LOD	**2.20** (1.10-3.90)	**11.0** (4.20-17.0)	**20.0** (13.0-40.0)	997
	01-02	*	< LOD	**.960** (.250-1.37)	**2.61** (1.96-3.68)	**5.72** (3.79-9.87)	1595
	03-04	*	< LOD	**.730** (.590-.970)	**2.83** (1.99-3.96)	**6.15** (3.91-11.3)	1249
	05-06	*	< LOD	< LOD	**1.96** (1.49-2.59)	**3.75** (2.90-4.60)	1389
	07-08	*	< LOD	< LOD	**2.34** (1.79-3.12)	**5.54** (4.06-6.69)	1293

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.08, 0.1, 0.1, 0.51,and 0.51 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethyldithiophosphate (DMDTP) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**.250** (<LOD-.870)	**1.90** (1.10-3.00)	**5.80** (4.10-9.70)	**12.0** (5.90-28.0)	672
	01-02	*	**< LOD**	**1.08** (.780-1.38)	**2.80** (2.19-3.54)	**4.93** (3.73-7.42)	763
	03-04	*	**< LOD**	**.730** (.360-1.21)	**2.11** (1.38-3.15)	**5.26** (2.31-6.94)	610
	05-06	*	**< LOD**	**< LOD**	**2.04** (1.62-2.96)	**5.12** (2.98-10.7)	695
	07-08	*	**< LOD**	**< LOD**	**1.63** (1.18-2.12)	**3.88** (2.12-6.07)	491
Non-Hispanic blacks	99-00	*	**.330** (<LOD-1.20)	**3.20** (1.40-7.00)	**14.0** (5.70-30.0)	**19.0** (17.0-39.0)	509
	01-02	*	**< LOD**	**.640** (<LOD-1.41)	**1.96** (1.36-4.15)	**4.42** (2.68-8.38)	755
	03-04	*	**< LOD**	**.590** (.310-.730)	**1.77** (1.05-3.33)	**4.77** (2.75-7.80)	604
	05-06	*	**< LOD**	**< LOD**	**2.15** (1.66-2.82)	**5.45** (2.82-8.39)	723
	07-08	*	**< LOD**	**< LOD**	**2.04** (1.54-2.65)	**4.27** (2.66-7.79)	568
Non-Hispanic whites	99-00	*	**< LOD**	**2.00** (.800-4.00)	**13.0** (3.90-20.0)	**20.0** (16.0-40.0)	595
	01-02	*	**< LOD**	**1.01** (.180-1.43)	**2.74** (1.94-4.18)	**6.72** (4.88-8.54)	1252
	03-04	*	**< LOD**	**.740** (.540-1.04)	**2.66** (1.55-4.56)	**5.89** (3.63-11.6)	1056
	05-06	*	**< LOD**	**< LOD**	**1.93** (1.23-2.65)	**3.60** (2.71-5.51)	1007
	07-08	*	**< LOD**	**< LOD**	**2.32** (1.75-3.28)	**5.60** (4.46-6.88)	1087

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.08, 0.1, 0.1, 0.51,and 0.51 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethyldithiophosphate (DMDTP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	**1.88** (.970-3.86)	**10.1** (5.31-18.3)	**21.7** (12.8-33.7)	1949
	01-02	*	< LOD	**.717** (.389-1.12)	**2.80** (2.21-3.96)	**6.84** (4.96-8.09)	3014
	03-04	*	< LOD	**.572** (.411-.772)	**2.62** (1.72-4.12)	**6.40** (3.85-9.75)	2455
	05-06	*	< LOD	< LOD	**2.18** (1.64-3.00)	**4.62** (3.23-7.12)	2634
	07-08	*	< LOD	< LOD	**2.63** (2.17-3.08)	**6.12** (4.15-8.24)	2569
Age group							
6-11 years	99-00	**.748** (.474-1.18)	**.790** (.190-1.60)	**4.07** (2.31-7.18)	**16.2** (8.22-27.0)	**30.8** (20.2-38.9)	471
	01-02	*	< LOD	**1.36** (.805-2.31)	**4.10** (2.67-6.24)	**6.98** (4.40-12.8)	575
	03-04	*	< LOD	**.962** (.584-1.57)	**3.39** (2.29-6.15)	**7.12** (4.48-7.55)	306
	05-06	*	< LOD	< LOD	**2.57** (1.39-4.14)	**4.50** (3.17-9.35)	350
	07-08	*	< LOD	**1.50** (<LOD-1.95)	**4.35** (3.05-6.59)	**8.01** (4.75-12.9)	379
12-19 years	99-00	*	< LOD	**1.52** (.620-3.47)	**9.48** (4.04-16.8)	**21.5** (9.48-42.3)	664
	01-02	*	< LOD	**.543** (.306-.773)	**2.02** (1.49-2.40)	**3.13** (2.51-4.67)	820
	03-04	*	< LOD	**.361** (.241-.584)	**1.02** (.628-1.57)	**2.46** (1.33-3.39)	697
	05-06	*	< LOD	< LOD	**2.05** (1.16-3.56)	**4.27** (2.30-8.66)	718
	07-08	*	< LOD	< LOD	**1.16** (.782-1.85)	**1.94** (1.39-3.79)	382
20-59 years	99-00	*	< LOD	**1.71** (.850-3.56)	**8.50** (4.00-19.1)	**20.5** (8.57-40.7)	814
	01-02	*	< LOD	**.605** (<LOD-1.05)	**2.56** (1.64-4.03)	**6.33** (3.96-8.17)	1122
	03-04	*	< LOD	**.451** (.340-.583)	**2.17** (1.10-3.64)	**5.71** (2.47-10.1)	924
	05-06	*	< LOD	< LOD	**1.90** (1.44-2.57)	**3.69** (2.37-7.07)	1091
	07-08	*	< LOD	< LOD	**1.99** (1.80-2.32)	**4.15** (2.77-6.77)	1172
60+ years	01-02	*	< LOD	**1.10** (.631-1.86)	**4.89** (3.36-7.82)	**13.4** (6.98-19.8)	497
	03-04	*	< LOD	**1.55** (.765-2.48)	**6.52** (2.73-13.3)	**13.3** (5.44-23.0)	528
	05-06	*	< LOD	< LOD	**3.22** (2.25-4.54)	**6.53** (3.70-10.4)	475
	07-08	*	< LOD	**1.72** (<LOD-2.58)	**5.92** (3.29-8.44)	**10.3** (7.25-18.4)	636
Gender							
Males	99-00	*	**.150** (<LOD-.370)	**1.79** (.840-3.97)	**11.0** (4.62-17.4)	**18.1** (7.51-44.7)	952
	01-02	*	< LOD	**.628** (.333-.850)	**2.39** (1.75-3.13)	**5.37** (4.23-7.29)	1420
	03-04	*	< LOD	**.467** (.280-.743)	**2.03** (.990-3.56)	**5.38** (2.29-8.25)	1208
	05-06	*	< LOD	< LOD	**1.80** (1.14-3.17)	**4.14** (2.18-7.15)	1246
	07-08	*	< LOD	< LOD	**1.89** (1.44-2.71)	**4.92** (2.77-8.44)	1277
Females	99-00	*	< LOD	**2.06** (.940-4.00)	**9.30** (4.96-25.5)	**27.0** (9.66-47.5)	997
	01-02	*	< LOD	**.831** (.412-1.50)	**3.35** (2.50-4.96)	**7.81** (5.29-11.9)	1594
	03-04	*	< LOD	**.680** (.538-.887)	**3.59** (2.41-5.18)	**7.12** (4.13-13.1)	1247
	05-06	*	< LOD	< LOD	**2.40** (2.00-3.18)	**5.25** (3.18-7.60)	1388
	07-08	*	< LOD	< LOD	**3.05** (2.44-4.00)	**7.18** (4.22-11.1)	1292

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethyldithiophosphate (DMDTP) (creatinine corrected) (1999 – 2008)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**.270** (<LOD-.660)	**1.35** (.860-2.53)	**6.55** (3.83-11.8)	**16.7** (6.25-38.8)	672
	01-02	*	**< LOD**	**.833** (.589-1.15)	**2.72** (2.05-3.32)	**5.16** (3.69-7.83)	763
	03-04	*	**< LOD**	**.651** (.318-1.09)	**2.04** (1.10-3.74)	**4.50** (2.17-5.88)	609
	05-06	*	**< LOD**	**< LOD**	**2.40** (1.29-4.00)	**5.14** (3.45-10.5)	695
	07-08	*	**< LOD**	**< LOD**	**1.97** (1.50-2.77)	**4.30** (2.77-6.92)	490
Non-Hispanic blacks	99-00	*	**.250** (<LOD-.700)	**2.40** (.690-5.44)	**9.41** (4.81-17.8)	**17.9** (11.5-40.7)	509
	01-02	*	**< LOD**	**.403** (<LOD-.847)	**1.69** (.793-3.50)	**3.50** (2.19-5.91)	754
	03-04	*	**< LOD**	**.343** (.242-.477)	**1.07** (.727-1.84)	**3.21** (1.45-6.07)	603
	05-06	*	**< LOD**	**< LOD**	**1.80** (.990-3.89)	**4.95** (2.93-5.59)	722
	07-08	*	**< LOD**	**< LOD**	**1.79** (1.38-2.31)	**4.27** (2.44-6.16)	567
Non-Hispanic whites	99-00	*	**< LOD**	**1.77** (.780-4.02)	**11.4** (4.07-21.5)	**21.5** (11.4-34.8)	595
	01-02	*	**< LOD**	**.787** (.389-1.37)	**3.42** (2.48-5.24)	**7.75** (5.80-9.47)	1252
	03-04	*	**< LOD**	**.631** (.412-.897)	**3.06** (1.75-5.84)	**6.74** (4.42-12.0)	1055
	05-06	*	**< LOD**	**< LOD**	**2.16** (1.64-3.00)	**4.14** (2.91-7.59)	1007
	07-08	*	**< LOD**	**< LOD**	**2.74** (2.12-3.58)	**5.92** (4.00-9.71)	1087

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary *trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (1999 - 2010)

Metabolite of Cyfluthrin, trans-Cypermethrin, and trans-Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	**.560** (.480-.700)	**1.40** (1.17-1.77)	**3.42** (2.39-5.56)	1976
	01-02	*	< LOD	**.430** (<LOD-.560)	**1.18** (.930-1.64)	**2.60** (1.85-3.58)	3033
	07-08	*	< LOD	< LOD	**2.23** (1.58-3.30)	**5.23** (3.87-7.05)	2576
	09-10	*	< LOD	< LOD	**1.29** (.810-1.70)	**5.42** (3.26-6.80)	2747
Age group							
6-11 years	99-00	*	< LOD	**.970** (.700-1.66)	**2.91** (1.76-4.19)	**4.19** (2.97-11.7)	478
	01-02	*	< LOD	**.470** (<LOD-.760)	**1.39** (1.03-1.68)	**2.50** (1.55-3.54)	576
	07-08	*	< LOD	< LOD	**1.50** (.740-3.01)	**4.01** (1.81-10.4)	384
	09-10	*	< LOD	< LOD	**2.27** (<LOD-5.65)	**8.64** (2.27-26.8)	386
12-19 years	99-00	*	< LOD	**.710** (.520-.860)	**2.07** (1.25-3.42)	**4.28** (2.12-6.23)	675
	01-02	*	< LOD	**.490** (<LOD-.670)	**1.20** (.800-1.60)	**2.01** (1.49-3.77)	826
	07-08	*	< LOD	< LOD	**2.30** (1.13-3.73)	**5.08** (2.36-7.61)	388
	09-10	*	< LOD	< LOD	< LOD	**1.78** (1.05-2.50)	401
20-59 years	99-00	*	< LOD	**.500** (.400-.620)	**1.17** (.910-1.68)	**2.94** (1.49-5.56)	823
	01-02	*	< LOD	< LOD	**1.17** (.850-1.85)	**2.56** (1.64-4.66)	1123
	07-08	*	< LOD	< LOD	**2.15** (1.38-3.55)	**5.36** (3.51-7.28)	1174
	09-10	*	< LOD	< LOD	**1.13** (<LOD-1.83)	**5.88** (3.24-7.71)	1309
60 years and older	01-02	*	< LOD	**.460** (<LOD-.630)	**1.13** (.760-2.44)	**4.27** (1.20-6.49)	508
	07-08	*	< LOD	< LOD	**2.33** (.850-4.26)	**4.87** (2.75-9.01)	630
	09-10	*	< LOD	< LOD	**1.66** (1.02-2.68)	**6.09** (3.05-10.4)	651
Gender							
Males	99-00	*	< LOD	**.560** (.500-.670)	**1.28** (1.11-1.63)	**2.25** (1.55-5.10)	961
	01-02	*	< LOD	**.420** (<LOD-.500)	**1.12** (.860-1.58)	**2.44** (1.69-3.70)	1419
	07-08	*	< LOD	< LOD	**2.20** (1.20-3.76)	**5.29** (3.12-7.61)	1289
	09-10	*	< LOD	< LOD	**1.12** (<LOD-1.83)	**4.98** (2.88-7.03)	1343
Females	99-00	*	< LOD	**.550** (.410-.820)	**1.77** (1.07-3.08)	**4.19** (3.08-6.81)	1015
	01-02	*	< LOD	**.440** (<LOD-.630)	**1.23** (.910-1.98)	**2.62** (1.90-3.58)	1614
	07-08	*	< LOD	< LOD	**2.27** (1.49-3.51)	**5.08** (3.55-6.48)	1287
	09-10	*	< LOD	< LOD	**1.33** (<LOD-2.12)	**5.51** (2.87-9.82)	1404

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 07-08, and 09-10 are 0.4, 0.4, 0.6, and 0.6 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cyfluthrin_Cypermethrin_Permethrin_BiomonitoringSummary.html

Urinary *trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (1999 - 2010)

Metabolite of Cyfluthrin, trans-Cypermethrin, and trans-Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**.470** (.410-.530)	**1.23** (.830-1.60)	**1.87** (1.49-3.35)	691
	01-02	*	**< LOD**	**.410** (<LOD-.510)	**.860** (.680-1.14)	**1.57** (1.08-2.01)	767
	07-08	*	**< LOD**	**< LOD**	**1.37** (<LOD-1.99)	**2.89** (1.63-4.19)	495
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**2.32** (1.06-3.76)	602
Non-Hispanic blacks	99-00	*	**< LOD**	**.780** (.490-1.13)	**1.84** (1.08-4.69)	**4.69** (1.41-14.5)	518
	01-02	*	**< LOD**	**.590** (.490-.740)	**1.26** (1.05-1.70)	**2.25** (1.54-3.32)	764
	07-08	*	**< LOD**	**< LOD**	**2.24** (1.26-3.30)	**4.25** (3.38-8.10)	569
	09-10	*	**< LOD**	**< LOD**	**1.78** (<LOD-4.06)	**5.14** (2.59-8.69)	504
Non-Hispanic whites	99-00	*	**< LOD**	**.560** (.460-.730)	**1.41** (1.14-2.14)	**3.89** (2.14-6.43)	595
	01-02	*	**< LOD**	**.410** (<LOD-.580)	**1.18** (.850-1.85)	**2.64** (1.85-4.27)	1278
	07-08	*	**< LOD**	**< LOD**	**2.24** (1.38-3.76)	**5.23** (3.96-6.48)	1082
	09-10	*	**< LOD**	**< LOD**	**1.29** (.690-1.88)	**6.13** (3.24-9.30)	1200

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 07-08, and 09-10 are 0.4, 0.4, 0.6, and 0.6 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cyfluthrin_Cypermethrin_Permethrin_BiomonitoringSummary.html

Urinary *trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (creatinine corrected) (1999 - 2010)

Metabolite of Cyfluthrin, trans-Cypermethrin, and trans-Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	**.700** (.609-.778)	**1.56** (1.33-1.87)	**2.65** (2.15-3.89)	1976
	01-02	*	< LOD	**.737** (<LOD-.796)	**1.47** (1.32-1.87)	**2.62** (2.31-3.11)	3031
	07-08	*	< LOD	< LOD	**2.90** (2.21-3.81)	**5.15** (4.20-6.40)	2574
	09-10	*	< LOD	< LOD	**2.10** (1.91-2.47)	**4.37** (3.73-5.83)	2747
Age group							
6-11 years	99-00	*	< LOD	**1.31** (.718-1.74)	**2.37** (1.56-5.07)	**5.60** (1.91-11.3)	478
	01-02	*	< LOD	**.903** (<LOD-1.13)	**2.16** (1.40-2.61)	**2.87** (2.34-3.44)	576
	07-08	*	< LOD	< LOD	**2.46** (2.07-3.46)	**4.18** (2.47-9.69)	384
	09-10	*	< LOD	< LOD	**2.61** (<LOD-5.87)	**6.85** (2.61-38.8)	386
12-19 years	99-00	*	< LOD	**.525** (.438-.727)	**1.42** (.824-2.19)	**2.19** (1.34-4.31)	675
	01-02	*	< LOD	**.528** (<LOD-.657)	**.966** (.800-1.29)	**1.57** (1.07-2.60)	825
	07-08	*	< LOD	< LOD	**2.06** (1.16-4.97)	**5.51** (2.06-7.15)	386
	09-10	*	< LOD	< LOD	< LOD	**1.83** (1.25-2.75)	401
20-59 years	99-00	*	< LOD	**.700** (.571-.769)	**1.33** (1.12-1.87)	**2.39** (1.87-3.36)	823
	01-02	*	< LOD	< LOD	**1.47** (1.22-2.00)	**2.55** (2.07-3.11)	1123
	07-08	*	< LOD	< LOD	**2.87** (2.15-3.82)	**5.09** (3.83-6.81)	1174
	09-10	*	< LOD	< LOD	**2.10** (<LOD-2.63)	**4.37** (3.63-6.16)	1309
60 years and older	01-02	*	< LOD	**.826** (<LOD-.933)	**2.00** (1.22-2.80)	**3.47** (2.15-6.57)	507
	07-08	*	< LOD	< LOD	**3.50** (2.21-4.83)	**5.85** (3.65-8.56)	630
	09-10	*	< LOD	< LOD	**2.56** (2.00-3.72)	**6.04** (3.82-13.7)	651
Gender							
Males	99-00	*	< LOD	**.562** (.484-.667)	**1.26** (1.07-1.42)	**2.15** (1.47-2.74)	961
	01-02	*	< LOD	**.529** (<LOD-.583)	**1.09** (.966-1.35)	**2.25** (1.57-2.57)	1419
	07-08	*	< LOD	< LOD	**2.10** (1.36-3.47)	**4.85** (3.20-5.95)	1288
	09-10	*	< LOD	< LOD	**1.86** (<LOD-2.25)	**3.98** (2.63-6.04)	1343
Females	99-00	*	< LOD	**.875** (.718-1.11)	**1.91** (1.48-2.39)	**3.67** (2.30-6.28)	1015
	01-02	*	< LOD	**.903** (<LOD-1.00)	**1.90** (1.56-2.15)	**3.03** (2.55-3.20)	1612
	07-08	*	< LOD	< LOD	**3.50** (2.37-4.69)	**6.23** (4.20-9.69)	1286
	09-10	*	< LOD	< LOD	**2.48** (<LOD-2.95)	**5.30** (3.54-8.27)	1404

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cyfluthrin_Cypermethrin_Permethrin_BiomonitoringSummary.html

Urinary *trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (creatinine corrected) (1999 - 2010)

Metabolite of Cyfluthrin, trans-Cypermethrin, and trans-Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**.583** (.500-.745)	**1.35** (1.02-1.65)	**2.00** (1.56-2.80)	691
	01-02	*	**< LOD**	**.573** (<LOD-.651)	**1.08** (.909-1.22)	**1.87** (1.39-2.15)	767
	07-08	*	**< LOD**	**< LOD**	**1.87** (<LOD-2.94)	**3.20** (2.07-4.16)	494
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**2.57** (2.02-3.50)	602
Non-Hispanic blacks	99-00	*	**< LOD**	**.571** (.467-.739)	**1.70** (.853-3.13)	**3.36** (1.87-8.91)	518
	01-02	*	**< LOD**	**.490** (.433-.571)	**1.17** (.848-1.56)	**2.37** (1.40-2.89)	763
	07-08	*	**< LOD**	**< LOD**	**2.00** (1.56-2.63)	**4.85** (2.31-8.30)	568
	09-10	*	**< LOD**	**< LOD**	**1.75** (<LOD-2.25)	**3.50** (2.13-6.13)	504
Non-Hispanic whites	99-00	*	**< LOD**	**.757** (.695-.848)	**1.64** (1.33-2.00)	**3.31** (2.00-5.60)	595
	01-02	*	**< LOD**	**.778** (<LOD-.848)	**1.56** (1.34-2.00)	**2.63** (2.30-3.16)	1277
	07-08	*	**< LOD**	**< LOD**	**3.10** (2.21-4.20)	**5.34** (4.46-7.21)	1082
	09-10	*	**< LOD**	**< LOD**	**2.46** (1.91-3.00)	**4.91** (3.73-7.83)	1200

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cyfluthrin_Cypermethrin_Permethrin_BiomonitoringSummary.html

Urinary *cis*-3-(2,2-Dibromovinyl)-2,2-dimethylcyclopropane carboxylic acid (1999 - 2010)

Metabolite of Deltamethrin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1698
	01-02	*	< LOD	< LOD	< LOD	< LOD	3048
	07-08	*	< LOD	< LOD	< LOD	< LOD	2583
	09-10	*	< LOD	< LOD	< LOD	< LOD	2746
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	415
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	07-08	*	< LOD	< LOD	< LOD	< LOD	384
	09-10	*	< LOD	< LOD	< LOD	< LOD	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	570
	01-02	*	< LOD	< LOD	< LOD	< LOD	831
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
	09-10	*	< LOD	< LOD	< LOD	< LOD	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	713
	01-02	*	< LOD	< LOD	< LOD	< LOD	1128
	07-08	*	< LOD	< LOD	< LOD	< LOD	1177
	09-10	*	< LOD	< LOD	< LOD	< LOD	1308
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	509
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
	09-10	*	< LOD	< LOD	< LOD	< LOD	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	818
	01-02	*	< LOD	< LOD	< LOD	< LOD	1429
	07-08	*	< LOD	< LOD	< LOD	< LOD	1290
	09-10	*	< LOD	< LOD	< LOD	< LOD	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	880
	01-02	*	< LOD	< LOD	< LOD	< LOD	1619
	07-08	*	< LOD	< LOD	< LOD	< LOD	1293
	09-10	*	< LOD	< LOD	< LOD	< LOD	1403
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	578
	01-02	*	< LOD	< LOD	< LOD	< LOD	767
	07-08	*	< LOD	< LOD	< LOD	< LOD	500
	09-10	*	< LOD	< LOD	< LOD	< LOD	602
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	445
	01-02	*	< LOD	< LOD	< LOD	< LOD	776
	07-08	*	< LOD	< LOD	< LOD	< LOD	572
	09-10	*	< LOD	< LOD	< LOD	< LOD	503
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	527
	01-02	*	< LOD	< LOD	< LOD	< LOD	1281
	07-08	*	< LOD	< LOD	< LOD	< LOD	1082
	09-10	*	< LOD	< LOD	< LOD	< LOD	1200

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 07-08, and 09-10 are 0.1, 0.1, 0.5, and 0.5 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Deltamethrin_BiomonitoringSummary.html

Urinary *cis*-3-(2,2-Dibromovinyl)-2,2-dimethylcyclopropane carboxylic acid (creatinine corrected) (1999 - 2010)

Metabolite of Deltamethrin

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1698
	01-02	*	< LOD	< LOD	< LOD	< LOD	3046
	07-08	*	< LOD	< LOD	< LOD	< LOD	2581
	09-10	*	< LOD	< LOD	< LOD	< LOD	2746
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	415
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	07-08	*	< LOD	< LOD	< LOD	< LOD	384
	09-10	*	< LOD	< LOD	< LOD	< LOD	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	570
	01-02	*	< LOD	< LOD	< LOD	< LOD	830
	07-08	*	< LOD	< LOD	< LOD	< LOD	387
	09-10	*	< LOD	< LOD	< LOD	< LOD	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	713
	01-02	*	< LOD	< LOD	< LOD	< LOD	1128
	07-08	*	< LOD	< LOD	< LOD	< LOD	1177
	09-10	*	< LOD	< LOD	< LOD	< LOD	1308
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	508
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
	09-10	*	< LOD	< LOD	< LOD	< LOD	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	818
	01-02	*	< LOD	< LOD	< LOD	< LOD	1429
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	880
	01-02	*	< LOD	< LOD	< LOD	< LOD	1617
	07-08	*	< LOD	< LOD	< LOD	< LOD	1292
	09-10	*	< LOD	< LOD	< LOD	< LOD	1403
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	578
	01-02	*	< LOD	< LOD	< LOD	< LOD	767
	07-08	*	< LOD	< LOD	< LOD	< LOD	499
	09-10	*	< LOD	< LOD	< LOD	< LOD	602
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	445
	01-02	*	< LOD	< LOD	< LOD	< LOD	775
	07-08	*	< LOD	< LOD	< LOD	< LOD	571
	09-10	*	< LOD	< LOD	< LOD	< LOD	503
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	527
	01-02	*	< LOD	< LOD	< LOD	< LOD	1280
	07-08	*	< LOD	< LOD	< LOD	< LOD	1082
	09-10	*	< LOD	< LOD	< LOD	< LOD	1200

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Deltamethrin_BiomonitoringSummary.html

Urinary 4-Fluoro-3-phenoxybenzoic acid (1999 - 2010)

Metabolite of Cyfluthrin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1949
	01-02	*	< LOD	< LOD	< LOD	< LOD	3048
	07-08	*	< LOD	< LOD	< LOD	.140 (<LOD-.210)	2588
	09-10	*	< LOD	< LOD	< LOD	< LOD	2747
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	473
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	07-08	*	< LOD	< LOD	< LOD	.120 (<LOD-.160)	385
	09-10	*	< LOD	< LOD	< LOD	< LOD	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	662
	01-02	*	< LOD	< LOD	< LOD	< LOD	831
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	814
	01-02	*	< LOD	< LOD	< LOD	< LOD	1128
	07-08	*	< LOD	< LOD	< LOD	.170 (<LOD-.290)	1180
	09-10	*	< LOD	< LOD	< LOD	< LOD	1309
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	509
	07-08	*	< LOD	< LOD	< LOD	.120 (<LOD-.260)	633
	09-10	*	< LOD	< LOD	< LOD	.220 (<LOD-.720)	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	950
	01-02	*	< LOD	< LOD	< LOD	< LOD	1429
	07-08	*	< LOD	< LOD	< LOD	.160 (<LOD-.270)	1293
	09-10	*	< LOD	< LOD	< LOD	< LOD	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	999
	01-02	*	< LOD	< LOD	< LOD	< LOD	1619
	07-08	*	< LOD	< LOD	< LOD	< LOD	1295
	09-10	*	< LOD	< LOD	< LOD	< LOD	1404
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	666
	01-02	*	< LOD	< LOD	< LOD	< LOD	767
	07-08	*	< LOD	< LOD	< LOD	.160 (<LOD-.240)	500
	09-10	*	< LOD	< LOD	< LOD	< LOD	602
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	517
	01-02	*	< LOD	< LOD	< LOD	< LOD	776
	07-08	*	< LOD	< LOD	< LOD	.140 (<LOD-.250)	574
	09-10	*	< LOD	< LOD	< LOD	.250 (<LOD-1.02)	504
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	594
	01-02	*	< LOD	< LOD	< LOD	< LOD	1281
	07-08	*	< LOD	< LOD	< LOD	.140 (<LOD-.210)	1084
	09-10	*	< LOD	< LOD	< LOD	< LOD	1200

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 07-08, and 09-10 are 0.2, 0.2, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cyfluthrin_BiomonitoringSummary.html

Urinary 4-Fluoro-3-phenoxybenzoic acid (creatinine corrected) (1999 - 2010)

Metabolite of Cyfluthrin

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1949
	01-02	*	< LOD	< LOD	< LOD	< LOD	3046
	07-08	*	< LOD	< LOD	< LOD	.350 (<LOD-.412)	2586
	09-10	*	< LOD	< LOD	< LOD	< LOD	2747
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	473
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	07-08	*	< LOD	< LOD	< LOD	.374 (<LOD-.412)	385
	09-10	*	< LOD	< LOD	< LOD	< LOD	386
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	662
	01-02	*	< LOD	< LOD	< LOD	< LOD	830
	07-08	*	< LOD	< LOD	< LOD	< LOD	388
	09-10	*	< LOD	< LOD	< LOD	< LOD	401
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	814
	01-02	*	< LOD	< LOD	< LOD	< LOD	1128
	07-08	*	< LOD	< LOD	< LOD	.368 (<LOD-.467)	1180
	09-10	*	< LOD	< LOD	< LOD	< LOD	1309
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	508
	07-08	*	< LOD	< LOD	< LOD	.389 (<LOD-.476)	633
	09-10	*	< LOD	< LOD	< LOD	.467 (<LOD-.700)	651
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	950
	01-02	*	< LOD	< LOD	< LOD	< LOD	1429
	07-08	*	< LOD	< LOD	< LOD	.233 (<LOD-.280)	1292
	09-10	*	< LOD	< LOD	< LOD	< LOD	1343
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	999
	01-02	*	< LOD	< LOD	< LOD	< LOD	1617
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1404
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	666
	01-02	*	< LOD	< LOD	< LOD	< LOD	767
	07-08	*	< LOD	< LOD	< LOD	.333 (<LOD-.414)	499
	09-10	*	< LOD	< LOD	< LOD	< LOD	602
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	517
	01-02	*	< LOD	< LOD	< LOD	< LOD	775
	07-08	*	< LOD	< LOD	< LOD	.235 (<LOD-.292)	573
	09-10	*	< LOD	< LOD	< LOD	.333 (<LOD-.788)	504
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	594
	01-02	*	< LOD	< LOD	< LOD	< LOD	1280
	07-08	*	< LOD	< LOD	< LOD	.368 (<LOD-.438)	1084
	09-10	*	< LOD	< LOD	< LOD	< LOD	1200

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cyfluthrin_BiomonitoringSummary.html

Urinary 3-Phenoxybenzoic acid (1999 - 2010)

Metabolite of Cypermethrin, Deltamethrin, and Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.292** (.247-.345)	**.250** (.190-.320)	**.730** (.590-.850)	**1.75** (1.49-2.16)	**4.33** (2.62-6.30)	1998
	01-02	**.318** (.275-.368)	**.270** (.220-.340)	**.700** (.570-.810)	**1.73** (1.49-2.16)	**3.54** (2.69-5.25)	3048
	07-08	**.401** (.350-.460)	**.390** (.340-.450)	**1.10** (.870-1.39)	**3.22** (2.55-4.19)	**6.63** (4.99-8.24)	2454
	09-10	**.418** (.389-.449)	**.400** (.350-.460)	**1.06** (.970-1.19)	**3.12** (2.69-3.77)	**6.50** (5.57-8.04)	2723
Age group							
6-11 years	99-00	**.417** (.292-.595)	**.320** (.210-.490)	**1.12** (.700-1.60)	**4.18** (2.02-6.54)	**8.63** (3.89-71.1)	483
	01-02	**.325** (.260-.406)	**.300** (.200-.420)	**.760** (.570-1.05)	**1.81** (1.42-2.78)	**3.38** (2.25-4.12)	580
	07-08	**.397** (.339-.464)	**.360** (.280-.410)	**1.13** (.780-1.55)	**3.40** (2.19-5.87)	**9.88** (3.40-17.3)	371
	09-10	**.549** (.389-.774)	**.480** (.350-.700)	**1.43** (1.00-2.15)	**4.43** (2.80-8.04)	**8.51** (4.12-39.4)	383
12-19 years	99-00	**.336** (.265-.427)	**.290** (.200-.440)	**.870** (.620-1.04)	**1.93** (1.49-2.90)	**4.33** (1.83-11.1)	682
	01-02	**.353** (.288-.434)	**.300** (.250-.390)	**.800** (.560-1.13)	**1.86** (1.48-2.35)	**3.45** (2.14-6.69)	831
	07-08	**.393** (.273-.565)	**.360** (.200-.640)	**1.15** (.720-1.83)	**2.96** (2.11-6.73)	**7.42** (2.96-12.1)	361
	09-10	**.403** (.346-.470)	**.410** (.310-.510)	**.970** (.810-1.29)	**2.25** (1.80-3.19)	**3.92** (2.55-5.85)	398
20-59 years	99-00	**.267** (.227-.314)	**.230** (.160-.300)	**.640** (.510-.820)	**1.49** (1.25-1.78)	**3.21** (2.04-5.41)	833
	01-02	**.314** (.271-.364)	**.270** (.220-.340)	**.670** (.530-.780)	**1.65** (1.27-2.34)	**3.25** (2.51-6.16)	1128
	07-08	**.427** (.376-.485)	**.420** (.370-.470)	**1.11** (.900-1.39)	**3.38** (2.42-4.99)	**6.65** (4.86-9.69)	1110
	09-10	**.416** (.382-.454)	**.390** (.330-.470)	**1.07** (.930-1.23)	**3.50** (2.67-4.45)	**6.95** (5.57-9.31)	1296
60 years and older	01-02	**.303** (.233-.394)	**.250** (.180-.350)	**.690** (.490-1.10)	**2.03** (1.45-3.68)	**5.16** (2.77-6.61)	509
	07-08	**.335** (.270-.416)	**.300** (.210-.470)	**1.05** (.690-1.54)	**2.68** (1.84-3.97)	**4.70** (2.83-6.43)	612
	09-10	**.382** (.343-.427)	**.360** (.290-.450)	**.980** (.860-1.17)	**2.56** (2.07-2.88)	**5.93** (3.21-8.95)	646
Gender							
Males	99-00	**.273** (.226-.330)	**.250** (.180-.330)	**.710** (.570-.820)	**1.49** (1.29-1.73)	**2.41** (1.92-3.79)	974
	01-02	**.326** (.281-.379)	**.300** (.230-.360)	**.690** (.570-.750)	**1.60** (1.37-2.15)	**3.23** (2.56-5.25)	1429
	07-08	**.419** (.361-.487)	**.430** (.370-.500)	**1.11** (.830-1.48)	**3.12** (2.15-4.58)	**5.91** (4.19-7.56)	1215
	09-10	**.421** (.391-.454)	**.400** (.340-.450)	**1.07** (.900-1.29)	**3.21** (2.51-4.45)	**6.50** (5.51-9.07)	1331
Females	99-00	**.311** (.253-.384)	**.250** (.190-.340)	**.740** (.510-.990)	**2.30** (1.63-3.36)	**6.03** (3.27-11.8)	1024
	01-02	**.311** (.260-.371)	**.250** (.200-.320)	**.730** (.550-.920)	**1.81** (1.53-2.47)	**3.76** (2.51-6.55)	1619
	07-08	**.385** (.322-.462)	**.360** (.290-.450)	**1.07** (.820-1.42)	**3.30** (2.32-5.30)	**6.79** (5.15-9.69)	1239
	09-10	**.415** (.366-.471)	**.400** (.350-.480)	**1.06** (.910-1.26)	**2.92** (2.51-3.84)	**6.50** (4.89-8.50)	1392
Race/ethnicity							
Mexican Americans	99-00	**.260** (.230-.295)	**.230** (.190-.270)	**.600** (.430-.750)	**1.35** (1.16-1.53)	**2.18** (1.53-3.26)	697
	01-02	**.290** (.233-.361)	**.260** (.190-.350)	**.650** (.490-.810)	**1.26** (.860-2.17)	**2.65** (1.50-3.44)	767
	07-08	**.369** (.302-.451)	**.400** (.280-.460)	**.940** (.740-1.15)	**2.27** (1.58-3.39)	**3.62** (2.70-12.7)	476
	09-10	**.371** (.316-.436)	**.380** (.300-.480)	**.830** (.750-1.02)	**1.93** (1.55-2.53)	**3.70** (2.53-4.81)	596
Non-Hispanic blacks	99-00	**.454** (.352-.586)	**.450** (.350-.610)	**1.13** (.750-1.46)	**2.32** (1.45-5.35)	**5.35** (2.32-21.1)	524
	01-02	**.507** (.430-.599)	**.520** (.440-.630)	**.980** (.840-1.20)	**2.03** (1.72-2.52)	**3.86** (3.05-5.84)	776
	07-08	**.420** (.353-.501)	**.430** (.320-.540)	**1.12** (.770-1.66)	**3.11** (2.44-4.26)	**6.13** (4.12-8.39)	533
	09-10	**.464** (.349-.616)	**.500** (.360-.650)	**1.29** (.790-1.94)	**2.86** (2.07-4.59)	**5.86** (3.42-8.50)	499
Non-Hispanic whites	99-00	**.288** (.233-.355)	**.240** (.160-.320)	**.710** (.530-.850)	**1.78** (1.41-3.05)	**5.34** (2.62-8.43)	603
	01-02	**.297** (.248-.355)	**.240** (.190-.320)	**.600** (.490-.780)	**1.75** (1.46-2.34)	**3.70** (2.52-6.16)	1281
	07-08	**.394** (.329-.470)	**.380** (.310-.450)	**1.09** (.780-1.42)	**3.38** (2.42-4.92)	**6.53** (5.15-8.24)	1040
	09-10	**.412** (.384-.441)	**.370** (.330-.420)	**1.06** (.920-1.19)	**3.83** (2.82-4.46)	**8.08** (5.93-11.1)	1192

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 07-08, and 09-10 are 0.1, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Cyhalothrin_Cypermethrin_Deltamethrin_Fenpropathrin_Permethrin_Tralomethrin_BiomonitoringSummary.html

Urinary 3-Phenoxybenzoic acid (creatinine corrected) (1999 - 2010)

Metabolite of Cypermethrin, Deltamethrin, and Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.261** (.224-.304)	**.246** (.203-.280)	**.550** (.459-.629)	**1.40** (1.13-1.73)	**3.19** (2.16-4.55)	1998
	01-02	**.324** (.284-.371)	**.290** (.247-.336)	**.600** (.512-.743)	**1.54** (1.26-1.91)	**3.35** (2.50-4.92)	3046
	07-08	**.426** (.374-.485)	**.384** (.333-.450)	**1.02** (.886-1.19)	**3.08** (2.31-4.04)	**5.83** (4.52-7.51)	2452
	09-10	**.438** (.409-.469)	**.384** (.342-.432)	**1.01** (.898-1.13)	**2.88** (2.50-3.19)	**5.44** (4.52-6.38)	2723
Age group							
6-11 years	99-00	**.450** (.299-.677)	**.371** (.241-.592)	**1.13** (.733-1.62)	**3.97** (1.75-8.07)	**9.91** (2.43-64.0)	483
	01-02	**.423** (.335-.534)	**.383** (.296-.500)	**.864** (.594-1.35)	**2.21** (1.61-2.95)	**3.32** (2.64-5.40)	580
	07-08	**.511** (.431-.605)	**.448** (.363-.545)	**1.20** (.886-1.83)	**3.81** (2.13-7.27)	**9.86** (3.81-15.7)	371
	09-10	**.744** (.537-1.03)	**.667** (.503-.838)	**1.87** (1.30-2.60)	**4.73** (2.88-9.57)	**10.2** (4.48-51.9)	383
12-19 years	99-00	**.227** (.178-.290)	**.205** (.156-.269)	**.486** (.379-.732)	**1.37** (1.03-1.62)	**2.52** (1.41-4.44)	682
	01-02	**.274** (.229-.328)	**.236** (.189-.313)	**.539** (.424-.730)	**1.11** (.864-1.63)	**2.35** (1.36-6.19)	830
	07-08	**.316** (.230-.434)	**.281** (.191-.425)	**.869** (.523-1.29)	**3.13** (1.47-4.37)	**5.41** (3.36-9.20)	359
	09-10	**.347** (.302-.399)	**.301** (.256-.397)	**.733** (.575-.903)	**1.53** (1.33-2.46)	**2.64** (1.76-3.75)	398
20-59 years	99-00	**.246** (.216-.278)	**.239** (.200-.272)	**.505** (.405-.590)	**1.11** (.861-1.49)	**2.53** (1.73-4.09)	833
	01-02	**.311** (.271-.357)	**.282** (.245-.328)	**.552** (.444-.673)	**1.44** (1.02-1.91)	**3.22** (1.91-4.92)	1128
	07-08	**.443** (.384-.510)	**.401** (.353-.472)	**1.01** (.867-1.16)	**2.95** (2.22-4.04)	**6.29** (4.18-8.05)	1110
	09-10	**.419** (.389-.451)	**.365** (.326-.421)	**.993** (.826-1.10)	**2.93** (2.35-3.62)	**4.72** (4.17-6.15)	1296
60 years and older	01-02	**.372** (.301-.462)	**.319** (.241-.406)	**.785** (.541-1.05)	**2.16** (1.30-3.50)	**4.65** (2.63-6.15)	508
	07-08	**.418** (.351-.498)	**.363** (.288-.473)	**1.06** (.832-1.59)	**3.11** (2.22-4.43)	**4.93** (3.37-7.62)	612
	09-10	**.455** (.417-.496)	**.397** (.342-.455)	**1.06** (.875-1.30)	**2.88** (2.37-3.61)	**5.44** (3.77-8.53)	646
Gender							
Males	99-00	**.210** (.173-.253)	**.195** (.152-.254)	**.513** (.388-.582)	**1.09** (.841-1.41)	**1.72** (1.49-2.52)	974
	01-02	**.269** (.233-.310)	**.239** (.203-.280)	**.500** (.429-.571)	**1.27** (1.05-1.59)	**2.95** (1.74-4.00)	1429
	07-08	**.359** (.314-.411)	**.333** (.291-.392)	**.840** (.722-1.00)	**2.58** (1.58-3.57)	**4.42** (3.40-6.46)	1214
	09-10	**.377** (.348-.409)	**.323** (.295-.368)	**.865** (.744-1.01)	**2.48** (1.98-2.97)	**4.72** (3.53-6.45)	1331
Females	99-00	**.323** (.270-.387)	**.273** (.235-.333)	**.608** (.477-.743)	**1.94** (1.35-3.00)	**5.04** (3.19-6.90)	1024
	01-02	**.388** (.331-.455)	**.344** (.284-.408)	**.737** (.563-.938)	**1.84** (1.46-2.35)	**4.43** (2.62-5.59)	1617
	07-08	**.500** (.416-.601)	**.433** (.355-.540)	**1.28** (.995-1.60)	**3.56** (2.40-4.93)	**7.20** (5.15-9.57)	1238
	09-10	**.505** (.453-.564)	**.446** (.394-.500)	**1.15** (1.00-1.33)	**3.19** (2.54-3.73)	**5.86** (4.58-8.90)	1392
Race/ethnicity							
Mexican Americans	99-00	**.234** (.202-.272)	**.219** (.187-.234)	**.475** (.368-.594)	**1.04** (.700-1.39)	**1.67** (1.06-3.00)	697
	01-02	**.274** (.230-.328)	**.242** (.206-.316)	**.512** (.404-.654)	**1.03** (.750-1.67)	**1.83** (1.15-2.75)	767
	07-08	**.386** (.320-.466)	**.379** (.287-.488)	**.911** (.692-1.24)	**1.94** (1.47-2.38)	**3.16** (2.08-9.55)	475
	09-10	**.390** (.341-.446)	**.355** (.305-.438)	**.696** (.631-.774)	**1.62** (1.40-2.15)	**3.22** (2.19-3.89)	596
Non-Hispanic blacks	99-00	**.309** (.238-.401)	**.268** (.224-.353)	**.636** (.456-.935)	**1.49** (1.05-3.43)	**3.86** (1.51-7.25)	524
	01-02	**.374** (.308-.455)	**.357** (.290-.430)	**.675** (.561-.817)	**1.44** (1.20-2.31)	**2.91** (2.03-3.76)	775
	07-08	**.335** (.287-.391)	**.320** (.269-.375)	**.748** (.621-1.03)	**2.30** (1.68-3.35)	**4.62** (3.21-6.54)	532
	09-10	**.352** (.281-.442)	**.360** (.289-.436)	**.865** (.587-1.21)	**1.93** (1.48-2.59)	**4.03** (2.43-4.91)	499
Non-Hispanic whites	99-00	**.272** (.225-.329)	**.250** (.200-.292)	**.552** (.443-.667)	**1.55** (1.09-2.27)	**4.02** (2.07-5.49)	603
	01-02	**.321** (.274-.377)	**.281** (.238-.333)	**.586** (.468-.811)	**1.59** (1.26-2.19)	**3.57** (2.25-5.59)	1280
	07-08	**.438** (.369-.519)	**.368** (.304-.488)	**1.00** (.849-1.23)	**3.41** (2.41-4.37)	**6.29** (4.52-8.37)	1040
	09-10	**.451** (.417-.488)	**.388** (.328-.438)	**1.07** (.889-1.25)	**3.16** (2.63-3.71)	**6.09** (4.69-9.08)	1192

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Cyhalothrin_Cypermethrin_Deltamethrin_Fenpropathrin_Permethrin_Tralomethrin_BiomonitoringSummary.html

Urinary Antimony (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.132** (.120-.145)	**.130** (.120-.150)	**.220** (.200-.230)	**.330** (.300-.350)	**.430** (.390-.470)	2276
	01-02	**.134** (.126-.142)	**.130** (.130-.140)	**.190** (.180-.200)	**.270** (.250-.310)	**.350** (.320-.400)	2690
	03-04	*	**.080** (<LOD-.090)	**.130** (.120-.150)	**.200** (.190-.220)	**.280** (.250-.320)	2558
	05-06	**.073** (.066-.081)	**.070** (.070-.080)	**.120** (.110-.140)	**.220** (.180-.250)	**.300** (.270-.360)	2576
	07-08	**.061** (.057-.066)	**.060** (.060-.060)	**.100** (.090-.110)	**.170** (.140-.200)	**.240** (.220-.260)	2627
	09-10	**.056** (.053-.059)	**.050** (.050-.060)	**.090** (.090-.100)	**.170** (.140-.180)	**.230** (.200-.280)	2847
Age group							
6-11 years	99-00	**.176** (.154-.200)	**.190** (.160-.210)	**.260** (.230-.280)	**.350** (.300-.400)	**.440** (.320-.600)	316
	01-02	**.146** (.134-.160)	**.150** (.130-.160)	**.200** (.180-.210)	**.270** (.240-.330)	**.340** (.280-.440)	368
	03-04	**.099** (.087-.114)	**.100** (.070-.120)	**.160** (.120-.200)	**.240** (.190-.310)	**.310** (.230-.330)	290
	05-06	**.075** (.063-.088)	**.080** (.060-.090)	**.110** (.090-.130)	**.190** (.120-.260)	**.240** (.170-.340)	355
	07-08	**.068** (.061-.077)	**.070** (.060-.080)	**.110** (.090-.130)	**.170** (.150-.210)	**.230** (.180-.280)	394
	09-10	**.069** (.061-.079)	**.070** (.060-.080)	**.120** (.100-.150)	**.220** (.150-.260)	**.260** (.230-.350)	378
12-19 years	99-00	**.158** (.141-.178)	**.170** (.150-.180)	**.240** (.210-.270)	**.350** (.290-.420)	**.460** (.350-.510)	663
	01-02	**.169** (.156-.184)	**.160** (.150-.180)	**.240** (.220-.260)	**.350** (.320-.410)	**.460** (.400-.500)	762
	03-04	**.105** (.095-.115)	**.100** (.090-.120)	**.150** (.140-.160)	**.230** (.200-.270)	**.290** (.250-.370)	725
	05-06	**.092** (.083-.101)	**.090** (.080-.100)	**.140** (.130-.160)	**.240** (.200-.270)	**.280** (.250-.320)	701
	07-08	**.079** (.069-.091)	**.080** (.070-.090)	**.130** (.110-.140)	**.210** (.150-.230)	**.230** (.210-.340)	376
	09-10	**.063** (.056-.071)	**.060** (.050-.070)	**.100** (.090-.120)	**.180** (.150-.210)	**.270** (.180-.370)	451
20 years and older	99-00	**.123** (.112-.137)	**.120** (.110-.130)	**.200** (.180-.220)	**.310** (.290-.350)	**.430** (.390-.470)	1297
	01-02	**.128** (.119-.136)	**.130** (.120-.130)	**.180** (.170-.190)	**.250** (.220-.300)	**.330** (.280-.390)	1560
	03-04	*	**.070** (<LOD-.080)	**.120** (.100-.140)	**.190** (.170-.210)	**.270** (.220-.320)	1543
	05-06	**.070** (.064-.078)	**.070** (.060-.080)	**.120** (.110-.140)	**.220** (.180-.270)	**.320** (.260-.420)	1520
	07-08	**.058** (.054-.062)	**.060** (.050-.060)	**.090** (.090-.100)	**.160** (.130-.190)	**.240** (.210-.270)	1857
	09-10	**.054** (.051-.057)	**.050** (.050-.050)	**.090** (.080-.090)	**.150** (.140-.180)	**.220** (.190-.270)	2018
Gender							
Males	99-00	**.143** (.131-.157)	**.150** (.130-.160)	**.240** (.220-.260)	**.350** (.330-.390)	**.470** (.390-.570)	1132
	01-02	**.145** (.136-.154)	**.140** (.130-.150)	**.200** (.190-.210)	**.310** (.280-.330)	**.390** (.350-.440)	1335
	03-04	**.095** (.088-.103)	**.090** (.080-.100)	**.140** (.130-.160)	**.220** (.200-.250)	**.320** (.270-.350)	1281
	05-06	**.085** (.076-.095)	**.080** (.080-.090)	**.140** (.120-.160)	**.250** (.210-.290)	**.350** (.260-.460)	1271
	07-08	**.068** (.062-.076)	**.070** (.060-.070)	**.110** (.100-.120)	**.210** (.170-.230)	**.280** (.230-.340)	1327
	09-10	**.060** (.055-.065)	**.060** (.050-.070)	**.100** (.090-.110)	**.170** (.150-.200)	**.250** (.200-.290)	1397
Females	99-00	**.122** (.109-.137)	**.120** (.110-.140)	**.200** (.180-.220)	**.300** (.280-.340)	**.400** (.350-.460)	1144
	01-02	**.125** (.117-.133)	**.120** (.120-.130)	**.180** (.160-.190)	**.240** (.220-.280)	**.320** (.260-.360)	1355
	03-04	*	**< LOD**	**.120** (.090-.140)	**.180** (.150-.220)	**.230** (.190-.330)	1277
	05-06	**.063** (.057-.071)	**.060** (.050-.070)	**.100** (.090-.120)	**.180** (.150-.230)	**.270** (.200-.330)	1305
	07-08	**.055** (.052-.058)	**.050** (.050-.060)	**.090** (.080-.100)	**.130** (.120-.150)	**.200** (.170-.230)	1300
	09-10	**.052** (.049-.056)	**.050** (.040-.050)	**.090** (.080-.090)	**.150** (.130-.170)	**.220** (.190-.270)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.07, 0.032, 0.032, and 0.032 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Antimony (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.132** (.108-.161)	**.140** (.120-.170)	**.210** (.180-.240)	**.300** (.260-.390)	**.430** (.330-.560)	787
	01-02	**.142** (.130-.154)	**.130** (.130-.150)	**.200** (.170-.230)	**.260** (.240-.320)	**.360** (.300-.400)	683
	03-04	**.093** (.079-.110)	**.090** (<LOD-.120)	**.140** (.120-.160)	**.190** (.160-.260)	**.270** (.210-.330)	618
	05-06	**.093** (.082-.105)	**.090** (.080-.100)	**.150** (.140-.170)	**.250** (.210-.340)	**.470** (.270-.850)	652
	07-08	**.069** (.060-.079)	**.070** (.060-.080)	**.110** (.100-.120)	**.190** (.150-.250)	**.270** (.220-.390)	515
	09-10	**.063** (.060-.067)	**.060** (.060-.070)	**.110** (.090-.120)	**.170** (.150-.200)	**.250** (.200-.270)	613
Non-Hispanic blacks	99-00	**.175** (.148-.207)	**.180** (.150-.200)	**.260** (.230-.300)	**.400** (.310-.490)	**.490** (.410-.710)	554
	01-02	**.180** (.164-.197)	**.170** (.160-.190)	**.250** (.220-.280)	**.360** (.320-.410)	**.460** (.370-.530)	667
	03-04	**.108** (.098-.119)	**.110** (.100-.120)	**.160** (.150-.190)	**.230** (.200-.280)	**.310** (.250-.360)	723
	05-06	**.088** (.077-.100)	**.090** (.080-.100)	**.140** (.130-.170)	**.210** (.190-.250)	**.280** (.240-.320)	692
	07-08	**.085** (.079-.092)	**.080** (.080-.090)	**.130** (.120-.140)	**.210** (.180-.250)	**.290** (.250-.370)	589
	09-10	**.073** (.065-.081)	**.070** (.060-.080)	**.120** (.110-.140)	**.190** (.160-.250)	**.280** (.220-.350)	544
Non-Hispanic whites	99-00	**.128** (.115-.144)	**.130** (.110-.140)	**.210** (.190-.230)	**.330** (.280-.350)	**.400** (.360-.500)	768
	01-02	**.126** (.117-.135)	**.130** (.120-.130)	**.180** (.170-.190)	**.250** (.230-.300)	**.340** (.310-.390)	1132
	03-04	*	**.070** (<LOD-.080)	**.130** (.110-.140)	**.190** (.170-.210)	**.280** (.230-.320)	1074
	05-06	**.069** (.062-.077)	**.070** (.060-.080)	**.110** (.100-.130)	**.210** (.170-.260)	**.300** (.240-.380)	1041
	07-08	**.057** (.052-.063)	**.060** (.050-.060)	**.090** (.080-.110)	**.150** (.130-.200)	**.230** (.190-.260)	1095
	09-10	**.053** (.050-.057)	**.050** (.040-.050)	**.090** (.080-.090)	**.160** (.130-.190)	**.230** (.190-.280)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.07, 0.032, 0.032, and 0.032 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Antimony (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**.047** (.042-.052)	**.083** (.075-.091)	**.144** (.125-.158)	**.188** (.169-.222)	2504
Age group							
6-11 years	11-12	**.064** (.059-.069)	**.059** (.049-.072)	**.108** (.094-.124)	**.169** (.152-.188)	**.206** (.182-.257)	399
12-19 years	11-12	**.065** (.057-.073)	**.065** (.048-.081)	**.106** (.098-.126)	**.173** (.137-.202)	**.218** (.166-.283)	390
20 years and older	11-12	*	**.044** (<LOD-.051)	**.076** (.066-.087)	**.129** (.112-.152)	**.171** (.158-.228)	1715
Gender							
Males	11-12	**.057** (.052-.063)	**.052** (.044-.061)	**.089** (.080-.100)	**.152** (.124-.169)	**.196** (.169-.259)	1262
Females	11-12	*	**.043** (<LOD-.049)	**.074** (.068-.082)	**.131** (.122-.149)	**.182** (.166-.218)	1242
Race/ethnicity							
Mexican Americans	11-12	**.056** (.051-.062)	**.053** (.044-.062)	**.086** (.075-.091)	**.134** (.110-.164)	**.174** (.149-.261)	317
Non-Hispanic blacks	11-12	**.070** (.063-.079)	**.068** (.062-.074)	**.110** (.096-.125)	**.182** (.148-.229)	**.254** (.200-.354)	669
Non-Hispanic whites	11-12	*	**.044** (<LOD-.049)	**.081** (.069-.095)	**.143** (.118-.159)	**.180** (.159-.231)	820
All Hispanics	11-12	*	**.046** (<LOD-.053)	**.079** (.066-.088)	**.128** (.110-.149)	**.174** (.149-.208)	573
Asians	11-12	*	**< LOD**	**.066** (.054-.075)	**.103** (.075-.145)	**.145** (.100-.194)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.041.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Antimony (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.124** (.108-.143)	**.119** (.102-.143)	**.185** (.164-.214)	**.276** (.233-.333)	**.385** (.333-.430)	2276
	01-02	**.126** (.119-.134)	**.120** (.115-.126)	**.173** (.162-.188)	**.267** (.242-.300)	**.364** (.320-.414)	2689
	03-04	*	**.080** (<LOD-.086)	**.135** (.119-.143)	**.208** (.192-.230)	**.277** (.250-.294)	2558
	05-06	**.072** (.068-.077)	**.070** (.060-.070)	**.100** (.100-.110)	**.160** (.150-.190)	**.230** (.190-.290)	2576
	07-08	**.064** (.060-.068)	**.060** (.060-.060)	**.090** (.080-.100)	**.140** (.140-.160)	**.200** (.170-.230)	2627
	09-10	**.060** (.056-.064)	**.060** (.050-.060)	**.090** (.080-.090)	**.140** (.120-.160)	**.200** (.180-.230)	2847
Age group							
6-11 years	99-00	**.191** (.147-.248)	**.185** (.156-.220)	**.250** (.200-.417)	**.447** (.271-.741)	**.741** (.333-1.30)	316
	01-02	**.178** (.159-.200)	**.173** (.150-.193)	**.228** (.200-.272)	**.338** (.265-.480)	**.471** (.313-.727)	368
	03-04	**.116** (.103-.130)	**.118** (.098-.136)	**.167** (.146-.187)	**.256** (.194-.317)	**.333** (.250-.500)	290
	05-06	**.092** (.081-.104)	**.090** (.080-.110)	**.130** (.110-.150)	**.180** (.150-.210)	**.220** (.180-.270)	355
	07-08	**.089** (.079-.100)	**.090** (.070-.100)	**.120** (.110-.140)	**.200** (.150-.240)	**.300** (.200-.370)	394
	09-10	**.094** (.084-.106)	**.090** (.080-.100)	**.140** (.120-.160)	**.200** (.170-.250)	**.280** (.220-.320)	378
12-19 years	99-00	**.121** (.104-.140)	**.120** (.095-.146)	**.176** (.146-.207)	**.259** (.206-.310)	**.310** (.228-.421)	663
	01-02	**.121** (.112-.131)	**.115** (.106-.127)	**.160** (.138-.186)	**.224** (.199-.245)	**.266** (.244-.310)	762
	03-04	**.075** (.068-.082)	**.068** (.061-.077)	**.100** (.092-.113)	**.156** (.126-.173)	**.193** (.172-.255)	725
	05-06	**.070** (.065-.076)	**.070** (.060-.080)	**.100** (.090-.110)	**.140** (.120-.150)	**.170** (.150-.250)	701
	07-08	**.062** (.054-.070)	**.060** (.050-.070)	**.090** (.070-.100)	**.120** (.100-.160)	**.160** (.110-.240)	376
	09-10	**.059** (.053-.066)	**.060** (.050-.060)	**.090** (.070-.100)	**.130** (.110-.170)	**.180** (.150-.220)	451
20 years and older	99-00	**.118** (.104-.135)	**.111** (.097-.135)	**.175** (.149-.209)	**.263** (.227-.320)	**.352** (.320-.391)	1297
	01-02	**.122** (.115-.129)	**.115** (.108-.121)	**.167** (.153-.181)	**.265** (.241-.300)	**.364** (.318-.405)	1559
	03-04	*	**.079** (<LOD-.087)	**.135** (.116-.145)	**.209** (.195-.233)	**.278** (.250-.294)	1543
	05-06	**.070** (.066-.075)	**.060** (.060-.070)	**.100** (.090-.110)	**.170** (.150-.190)	**.250** (.190-.300)	1520
	07-08	**.062** (.058-.066)	**.060** (.050-.060)	**.090** (.080-.100)	**.140** (.130-.160)	**.200** (.160-.240)	1857
	09-10	**.057** (.053-.061)	**.050** (.050-.060)	**.080** (.080-.090)	**.130** (.120-.140)	**.190** (.160-.220)	2018
Gender							
Males	99-00	**.112** (.099-.127)	**.109** (.095-.127)	**.164** (.146-.181)	**.226** (.204-.268)	**.320** (.235-.391)	1132
	01-02	**.114** (.107-.123)	**.108** (.103-.115)	**.153** (.138-.171)	**.228** (.205-.250)	**.333** (.281-.438)	1334
	03-04	**.080** (.076-.084)	**.075** (.069-.081)	**.122** (.111-.132)	**.192** (.173-.209)	**.253** (.230-.278)	1281
	05-06	**.070** (.064-.077)	**.060** (.060-.070)	**.100** (.090-.120)	**.160** (.130-.220)	**.250** (.170-.310)	1271
	07-08	**.061** (.057-.066)	**.060** (.050-.060)	**.090** (.080-.100)	**.140** (.130-.160)	**.210** (.160-.260)	1327
	09-10	**.055** (.050-.060)	**.050** (.050-.060)	**.080** (.070-.100)	**.130** (.120-.150)	**.190** (.160-.210)	1397
Females	99-00	**.137** (.117-.161)	**.131** (.108-.164)	**.213** (.176-.247)	**.320** (.263-.417)	**.429** (.357-.485)	1144
	01-02	**.139** (.131-.148)	**.132** (.124-.140)	**.196** (.178-.211)	**.295** (.267-.317)	**.371** (.333-.444)	1355
	03-04	*	**< LOD**	**.143** (.125-.161)	**.225** (.188-.261)	**.288** (.250-.333)	1277
	05-06	**.074** (.070-.078)	**.070** (.070-.070)	**.110** (.100-.110)	**.170** (.150-.190)	**.220** (.180-.300)	1305
	07-08	**.067** (.062-.071)	**.060** (.060-.070)	**.100** (.090-.100)	**.140** (.130-.160)	**.200** (.160-.230)	1300
	09-10	**.064** (.060-.069)	**.060** (.060-.070)	**.090** (.090-.100)	**.150** (.130-.170)	**.220** (.180-.260)	1450

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Antimony (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.120** (.107-.135)	**.114** (.105-.129)	**.167** (.148-.203)	**.250** (.209-.315)	**.333** (.280-.357)	787
	01-02	**.138** (.128-.149)	**.130** (.117-.143)	**.182** (.159-.203)	**.269** (.229-.308)	**.338** (.308-.429)	682
	03-04	**.086** (.076-.098)	**.082** (<LOD-.092)	**.129** (.107-.151)	**.189** (.154-.238)	**.238** (.185-.321)	618
	05-06	**.087** (.076-.099)	**.080** (.070-.080)	**.120** (.110-.130)	**.190** (.150-.310)	**.370** (.200-.800)	652
	07-08	**.069** (.059-.081)	**.060** (.050-.080)	**.100** (.080-.120)	**.160** (.130-.180)	**.200** (.160-.360)	515
	09-10	**.066** (.063-.071)	**.060** (.060-.060)	**.100** (.080-.110)	**.160** (.130-.190)	**.240** (.190-.280)	613
Non-Hispanic blacks	99-00	**.114** (.099-.133)	**.112** (.098-.130)	**.163** (.144-.183)	**.236** (.195-.338)	**.343** (.255-.425)	554
	01-02	**.123** (.113-.134)	**.115** (.106-.127)	**.163** (.150-.181)	**.233** (.208-.267)	**.300** (.248-.373)	667
	03-04	**.078** (.071-.085)	**.074** (.069-.082)	**.109** (.096-.124)	**.170** (.148-.192)	**.222** (.179-.257)	723
	05-06	**.064** (.058-.071)	**.060** (.050-.070)	**.090** (.080-.090)	**.130** (.120-.150)	**.190** (.150-.220)	692
	07-08	**.062** (.059-.066)	**.060** (.050-.070)	**.090** (.080-.090)	**.140** (.120-.160)	**.180** (.160-.220)	589
	09-10	**.058** (.053-.063)	**.060** (.050-.060)	**.080** (.070-.090)	**.130** (.110-.160)	**.170** (.150-.190)	544
Non-Hispanic whites	99-00	**.129** (.109-.152)	**.125** (.102-.152)	**.195** (.167-.225)	**.298** (.239-.352)	**.400** (.333-.444)	768
	01-02	**.127** (.117-.138)	**.120** (.113-.130)	**.176** (.159-.198)	**.280** (.241-.317)	**.380** (.318-.471)	1132
	03-04	*	**.081** (<LOD-.089)	**.139** (.124-.147)	**.217** (.200-.238)	**.286** (.253-.333)	1074
	05-06	**.072** (.068-.077)	**.070** (.060-.070)	**.110** (.100-.110)	**.170** (.150-.190)	**.230** (.190-.280)	1041
	07-08	**.064** (.060-.069)	**.060** (.050-.070)	**.090** (.080-.100)	**.140** (.140-.160)	**.210** (.170-.230)	1095
	09-10	**.060** (.055-.065)	**.060** (.050-.060)	**.090** (.080-.100)	**.140** (.120-.170)	**.200** (.170-.250)	1225

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Antimony (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**.059** (.055-.063)	**.092** (.085-.100)	**.152** (.135-.171)	**.223** (.181-.261)	2502
Age group							
6-11 years	11-12	**.091** (.081-.102)	**.091** (.078-.100)	**.130** (.116-.147)	**.206** (.153-.283)	**.308** (.218-.340)	398
12-19 years	11-12	**.062** (.055-.069)	**.058** (.051-.067)	**.085** (.070-.106)	**.147** (.115-.181)	**.222** (.122-.373)	390
20 years and older	11-12	*	**.056** (<LOD-.060)	**.088** (.078-.097)	**.145** (.127-.171)	**.215** (.179-.240)	1714
Gender							
Males	11-12	**.054** (.050-.058)	**.051** (.048-.057)	**.078** (.071-.089)	**.132** (.120-.151)	**.186** (.161-.224)	1261
Females	11-12	*	**.066** (<LOD-.071)	**.104** (.094-.112)	**.165** (.145-.193)	**.226** (.183-.303)	1241
Race/ethnicity							
Mexican Americans	11-12	**.063** (.059-.067)	**.061** (.057-.064)	**.089** (.079-.100)	**.133** (.121-.153)	**.183** (.150-.246)	317
Non-Hispanic blacks	11-12	**.055** (.049-.060)	**.052** (.047-.058)	**.077** (.069-.088)	**.121** (.104-.147)	**.175** (.140-.232)	669
Non-Hispanic whites	11-12	*	**.060** (<LOD-.067)	**.097** (.088-.108)	**.161** (.135-.183)	**.224** (.181-.273)	818
All Hispanics	11-12	*	**.058** (<LOD-.065)	**.085** (.073-.097)	**.132** (.113-.161)	**.181** (.153-.214)	573
Asians	11-12	*	**< LOD**	**.087** (.072-.107)	**.153** (.132-.177)	**.215** (.171-.290)	353

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Total Arsenic (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg /L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**8.30** (7.19-9.57)	**7.70** (6.90-8.90)	**16.0** (14.1-18.7)	**37.4** (31.6-43.5)	**65.4** (48.7-83.3)	2557
	05-06	**9.29** (8.05-10.7)	**8.65** (7.48-9.99)	**17.1** (14.9-20.6)	**41.1** (33.3-49.7)	**66.7** (53.7-87.0)	2576
	07-08	**8.10** (7.44-8.83)	**7.49** (6.90-8.12)	**14.9** (13.2-17.0)	**33.3** (29.8-38.7)	**50.8** (42.3-65.1)	2605
	09-10	**9.28** (8.47-10.2)	**8.15** (7.20-8.98)	**18.0** (15.3-20.8)	**44.6** (39.0-55.1)	**85.6** (64.7-114)	2860
Age group							
6-11 years	03-04	**7.08** (5.66-8.84)	**6.80** (5.90-7.70)	**10.9** (8.90-14.2)	**24.6** (13.8-61.8)	**46.9** (17.5-178)	290
	05-06	**7.19** (5.81-8.90)	**6.96** (5.32-8.88)	**11.5** (9.19-16.0)	**19.6** (13.1-51.5)	**34.1** (19.6-58.5)	355
	07-08	**6.85** (5.98-7.83)	**6.40** (5.74-7.23)	**10.8** (9.75-12.3)	**22.5** (16.9-34.7)	**41.0** (21.1-52.8)	390
	09-10	**6.63** (5.74-7.66)	**5.94** (5.14-7.19)	**10.8** (9.37-12.5)	**26.0** (18.2-33.4)	**37.7** (27.8-65.6)	378
12-19 years	03-04	**8.55** (7.34-9.97)	**8.10** (6.80-9.40)	**15.2** (12.2-17.8)	**30.5** (23.1-40.4)	**46.1** (32.9-62.5)	725
	05-06	**8.19** (6.87-9.77)	**7.92** (6.37-9.50)	**14.0** (11.6-18.1)	**28.2** (22.9-32.9)	**41.9** (32.7-48.0)	701
	07-08	**7.09** (6.17-8.14)	**6.87** (5.88-7.86)	**11.4** (9.41-13.7)	**20.4** (16.1-26.6)	**38.2** (21.6-53.3)	373
	09-10	**6.45** (5.58-7.47)	**6.11** (5.26-6.89)	**10.8** (8.59-13.7)	**25.9** (16.2-32.9)	**38.8** (27.8-55.1)	454
20 years and older	03-04	**8.41** (7.25-9.77)	**7.90** (7.00-9.10)	**17.0** (15.0-19.7)	**40.5** (34.9-46.2)	**66.2** (51.2-93.1)	1542
	05-06	**9.76** (8.43-11.3)	**9.12** (7.85-10.4)	**18.9** (15.8-22.9)	**44.2** (35.2-56.1)	**71.4** (57.7-98.3)	1520
	07-08	**8.43** (7.70-9.22)	**7.94** (7.09-8.67)	**16.2** (14.5-18.6)	**35.2** (30.4-42.3)	**59.0** (44.2-75.6)	1842
	09-10	**10.2** (9.14-11.3)	**8.75** (7.95-9.81)	**20.4** (17.2-24.1)	**52.1** (42.4-66.1)	**93.1** (74.2-127)	2028
Gender							
Males	03-04	**9.50** (8.34-10.8)	**8.90** (7.70-9.80)	**17.6** (15.2-20.1)	**41.6** (32.5-52.8)	**65.8** (48.7-95.4)	1281
	05-06	**10.1** (8.61-11.8)	**8.95** (8.05-10.0)	**18.3** (15.5-22.9)	**40.8** (31.0-52.6)	**63.7** (46.4-78.7)	1271
	07-08	**9.25** (8.28-10.3)	**8.50** (7.37-9.53)	**17.0** (14.6-19.4)	**36.0** (32.1-44.2)	**62.5** (44.3-84.6)	1318
	09-10	**10.1** (9.06-11.3)	**8.80** (7.80-9.75)	**20.4** (16.1-23.9)	**47.4** (42.1-64.1)	**89.1** (71.6-114)	1401
Females	03-04	**7.30** (6.02-8.84)	**6.90** (5.90-8.30)	**15.0** (11.3-19.5)	**33.4** (26.5-41.7)	**60.5** (40.8-77.1)	1276
	05-06	**8.60** (7.38-10.0)	**8.18** (6.64-9.97)	**15.9** (13.7-19.9)	**41.5** (32.2-53.7)	**72.6** (54.8-122)	1305
	07-08	**7.14** (6.51-7.82)	**6.54** (6.09-7.14)	**12.7** (11.6-14.4)	**30.1** (26.0-34.0)	**49.1** (40.1-57.5)	1287
	09-10	**8.55** (7.44-9.83)	**7.63** (6.45-8.62)	**15.8** (13.1-19.9)	**41.5** (31.7-55.5)	**81.5** (54.3-132)	1459
Race/ethnicity							
Mexican Americans	03-04	**9.29** (8.12-10.6)	**9.20** (8.10-10.3)	**16.2** (13.5-19.9)	**34.4** (24.0-60.5)	**68.2** (41.3-111)	618
	05-06	**9.55** (8.54-10.7)	**9.11** (7.99-10.3)	**15.6** (14.0-17.1)	**29.2** (21.4-56.8)	**67.6** (41.7-81.4)	652
	07-08	**8.98** (8.13-9.92)	**8.84** (7.80-9.48)	**15.4** (12.3-19.7)	**35.2** (25.0-46.0)	**53.0** (44.2-77.4)	510
	09-10	**8.47** (7.30-9.84)	**7.96** (6.87-9.08)	**13.9** (11.3-17.7)	**34.7** (25.0-53.2)	**60.9** (49.3-78.7)	613
Non-Hispanic blacks	03-04	**11.6** (9.50-14.1)	**10.4** (7.90-11.8)	**21.5** (14.9-34.4)	**43.5** (36.2-61.8)	**78.0** (43.6-141)	722
	05-06	**11.0** (8.60-14.0)	**9.55** (6.99-13.3)	**21.9** (14.9-28.9)	**44.9** (31.1-71.4)	**82.3** (49.2-164)	692
	07-08	**10.5** (9.40-11.7)	**9.21** (8.22-10.4)	**18.4** (16.1-21.5)	**42.4** (32.9-52.8)	**65.6** (45.5-112)	585
	09-10	**10.9** (9.46-12.5)	**9.26** (7.70-11.4)	**21.7** (17.6-24.2)	**49.1** (32.2-81.7)	**84.8** (51.3-174)	546
Non-Hispanic whites	03-04	**7.12** (6.13-8.27)	**7.00** (6.10-7.90)	**13.7** (11.3-15.8)	**29.0** (22.6-35.9)	**53.1** (38.4-65.6)	1074
	05-06	**8.66** (7.20-10.4)	**8.05** (6.52-9.66)	**16.3** (13.4-20.6)	**40.8** (29.4-50.2)	**58.5** (46.0-88.0)	1041
	07-08	**6.98** (6.31-7.71)	**6.46** (5.93-7.29)	**12.4** (11.3-14.3)	**28.3** (21.6-32.6)	**42.1** (32.3-50.0)	1088
	09-10	**8.18** (7.46-8.96)	**7.24** (6.46-8.21)	**14.8** (12.7-17.4)	**38.9** (31.7-44.4)	**66.3** (49.3-88.7)	1224

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.74, 0.74, 0.74, and 0.74 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Total Arsenic (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**6.85** (5.85-8.02)	**6.09** (5.22-7.12)	**13.0** (10.9-16.6)	**32.0** (25.9-39.0)	**52.5** (41.9-66.2)	2504
Age group							
6-11 years	11-12	**6.02** (5.03-7.19)	**5.50** (4.58-6.56)	**10.5** (7.93-14.1)	**30.1** (16.7-46.5)	**53.0** (37.5-70.3)	399
12-19 years	11-12	**6.01** (4.45-8.11)	**5.26** (3.95-7.47)	**10.9** (7.74-16.9)	**25.9** (16.6-44.0)	**44.0** (25.9-153)	390
20 years and older	11-12	**7.09** (6.03-8.33)	**6.31** (5.32-7.45)	**13.6** (11.3-18.3)	**33.2** (26.7-39.5)	**52.5** (41.9-77.3)	1715
Gender							
Males	11-12	**7.69** (6.35-9.31)	**6.84** (5.33-8.59)	**15.4** (11.7-19.7)	**33.5** (27.7-41.9)	**56.5** (42.2-78.0)	1262
Females	11-12	**6.14** (5.22-7.22)	**5.42** (4.79-6.25)	**11.6** (9.85-13.7)	**29.0** (22.5-38.2)	**50.6** (37.5-79.8)	1242
Race/ethnicity							
Mexican Americans	11-12	**7.12** (5.73-8.84)	**6.94** (5.34-8.70)	**12.2** (9.84-16.5)	**24.2** (18.4-35.7)	**44.0** (23.8-70.3)	317
Non-Hispanic blacks	11-12	**9.31** (7.19-12.0)	**8.18** (6.16-10.8)	**17.9** (13.1-25.3)	**46.8** (28.8-76.5)	**82.1** (53.1-107)	669
Non-Hispanic whites	11-12	**5.89** (4.92-7.06)	**5.08** (4.56-6.06)	**10.8** (8.48-15.5)	**26.3** (20.3-34.9)	**43.2** (34.9-56.0)	820
All Hispanics	11-12	**7.62** (6.63-8.76)	**7.32** (6.31-8.35)	**13.7** (11.7-16.6)	**25.8** (21.2-29.8)	**45.6** (28.7-55.8)	573
Asians	11-12	**16.7** (14.7-18.9)	**14.9** (12.8-19.0)	**39.0** (33.2-44.8)	**83.2** (61.4-108)	**117** (88.4-145)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.25.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Total Arsenic (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg /g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**8.24** (7.07-9.59)	**7.04** (5.93-8.51)	**14.1** (11.6-17.2)	**30.4** (26.0-38.7)	**50.4** (40.3-64.5)	2557
	05-06	**9.15** (7.93-10.6)	**7.70** (6.55-8.98)	**15.2** (11.7-19.4)	**35.1** (26.5-44.7)	**62.8** (44.7-85.0)	2576
	07-08	**8.46** (7.78-9.21)	**7.06** (6.56-7.74)	**13.8** (12.5-15.2)	**28.9** (24.2-36.7)	**49.0** (38.8-70.5)	2605
	09-10	**9.90** (9.06-10.8)	**7.90** (6.98-8.97)	**17.6** (15.4-20.2)	**45.2** (36.6-53.3)	**80.8** (60.5-94.4)	2860
Age group							
6-11 years	03-04	**8.25** (6.58-10.3)	**7.18** (5.93-9.45)	**11.7** (9.10-16.3)	**22.2** (12.0-69.5)	**40.1** (14.7-188)	290
	05-06	**8.88** (7.05-11.2)	**7.87** (6.19-9.42)	**11.8** (9.32-18.9)	**24.5** (13.0-62.8)	**45.4** (22.9-80.9)	355
	07-08	**8.87** (8.06-9.77)	**7.53** (6.73-7.88)	**13.4** (10.2-16.0)	**26.7** (19.9-34.0)	**37.2** (28.6-71.4)	390
	09-10	**8.97** (7.93-10.2)	**7.42** (6.70-8.32)	**11.0** (9.90-14.0)	**33.5** (17.0-54.6)	**60.8** (36.6-84.9)	378
12-19 years	03-04	**6.11** (5.23-7.13)	**5.06** (4.47-6.04)	**9.66** (7.44-11.2)	**17.8** (12.0-26.0)	**27.8** (20.7-35.9)	725
	05-06	**6.30** (5.56-7.14)	**5.19** (4.80-6.19)	**9.62** (8.12-11.1)	**19.4** (13.9-25.8)	**28.0** (21.9-33.2)	701
	07-08	**5.50** (4.91-6.16)	**4.96** (4.25-5.40)	**7.69** (6.09-9.31)	**16.8** (10.8-21.1)	**22.5** (16.8-29.1)	373
	09-10	**6.06** (5.34-6.87)	**4.95** (4.39-5.81)	**9.18** (7.00-11.0)	**19.2** (14.5-21.3)	**28.4** (20.8-35.7)	454
20 years and older	03-04	**8.64** (7.38-10.1)	**7.47** (6.20-9.01)	**15.4** (12.7-18.8)	**33.8** (27.3-41.2)	**53.9** (45.4-64.5)	1542
	05-06	**9.75** (8.46-11.2)	**8.22** (6.98-9.75)	**17.0** (12.8-21.3)	**41.0** (29.6-52.5)	**68.4** (52.8-89.7)	1520
	07-08	**9.00** (8.20-9.88)	**7.55** (6.79-8.53)	**14.9** (13.1-17.1)	**32.5** (25.8-41.0)	**59.4** (41.0-86.2)	1842
	09-10	**10.8** (9.71-12.0)	**8.73** (7.69-9.71)	**20.1** (16.5-24.2)	**50.8** (40.5-59.7)	**87.3** (70.0-105)	2028
Gender							
Males	03-04	**8.00** (6.81-9.40)	**6.75** (5.66-8.35)	**13.7** (11.0-18.0)	**28.7** (25.1-36.4)	**45.6** (35.3-62.1)	1281
	05-06	**8.26** (7.09-9.63)	**7.16** (5.87-8.54)	**12.9** (10.2-18.0)	**28.8** (22.9-36.3)	**46.1** (35.1-66.5)	1271
	07-08	**8.30** (7.49-9.18)	**6.79** (6.39-7.61)	**13.2** (11.8-15.2)	**28.9** (23.5-38.5)	**47.7** (35.7-68.1)	1318
	09-10	**9.21** (8.55-9.93)	**7.22** (6.43-8.67)	**17.0** (14.9-18.6)	**41.8** (35.4-47.9)	**66.9** (52.0-81.5)	1401
Females	03-04	**8.47** (7.12-10.1)	**7.33** (6.10-8.75)	**14.4** (11.7-17.7)	**32.3** (24.2-46.6)	**58.4** (42.8-75.0)	1276
	05-06	**10.1** (8.72-11.7)	**8.29** (7.23-9.87)	**17.4** (13.0-21.4)	**43.8** (29.2-61.5)	**74.1** (55.0-96.2)	1305
	07-08	**8.63** (7.91-9.41)	**7.13** (6.53-8.33)	**14.1** (12.3-16.9)	**27.9** (24.1-37.0)	**51.4** (39.7-83.3)	1287
	09-10	**10.6** (9.36-12.0)	**8.38** (7.40-9.41)	**18.6** (14.9-23.9)	**50.8** (35.1-72.9)	**87.8** (66.8-109)	1459
Race/ethnicity							
Mexican Americans	03-04	**8.61** (7.33-10.1)	**7.76** (6.30-9.44)	**12.6** (10.2-15.9)	**24.0** (17.7-34.8)	**42.4** (24.8-62.4)	618
	05-06	**8.98** (7.89-10.2)	**7.48** (6.72-8.87)	**12.8** (11.0-16.3)	**28.1** (21.1-35.5)	**49.1** (31.0-108)	652
	07-08	**8.88** (7.71-10.2)	**7.38** (6.51-8.63)	**14.1** (10.6-17.8)	**28.6** (22.5-35.3)	**48.2** (31.1-75.7)	510
	09-10	**8.88** (7.87-10.0)	**7.62** (6.69-8.45)	**13.2** (10.7-17.2)	**31.4** (23.7-38.5)	**49.8** (37.5-68.9)	613
Non-Hispanic blacks	03-04	**8.31** (6.99-9.88)	**6.88** (5.66-8.41)	**13.8** (11.5-17.0)	**27.6** (17.9-56.0)	**54.3** (27.5-120)	722
	05-06	**7.96** (6.40-9.92)	**6.48** (5.21-8.30)	**13.4** (10.0-18.6)	**32.5** (18.7-66.5)	**71.4** (35.6-98.8)	692
	07-08	**7.72** (6.98-8.54)	**6.60** (6.01-7.56)	**13.4** (11.5-15.4)	**25.7** (22.1-30.0)	**42.7** (31.4-60.3)	585
	09-10	**8.67** (7.54-9.98)	**7.26** (5.96-9.02)	**15.6** (12.4-21.3)	**38.7** (31.5-48.7)	**63.9** (43.1-102)	546
Non-Hispanic whites	03-04	**7.50** (6.25-9.01)	**6.32** (5.28-7.96)	**12.5** (9.86-17.1)	**26.8** (21.8-32.0)	**40.0** (31.3-53.9)	1074
	05-06	**9.01** (7.57-10.7)	**7.68** (6.18-9.56)	**14.3** (11.1-20.8)	**31.9** (24.1-46.1)	**59.4** (37.9-96.2)	1041
	07-08	**7.82** (7.05-8.68)	**6.72** (6.00-7.54)	**12.5** (11.1-13.9)	**24.6** (19.6-32.3)	**43.1** (29.1-64.0)	1088
	09-10	**9.14** (8.35-10.0)	**7.10** (6.43-8.06)	**15.8** (13.7-18.4)	**40.9** (30.4-50.8)	**66.4** (50.9-90.0)	1224

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Total Arsenic (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**7.77** (6.85-8.81)	**6.39** (5.57-7.24)	**13.7** (11.5-16.5)	**30.8** (24.6-38.6)	**50.4** (38.2-70.1)	2502
Age group							
6-11 years	11-12	**8.63** (7.26-10.3)	**6.87** (5.84-8.00)	**12.3** (9.58-15.5)	**27.7** (17.7-57.7)	**91.2** (26.2-129)	398
12-19 years	11-12	**5.75** (4.49-7.36)	**4.69** (3.70-5.73)	**8.73** (6.26-13.3)	**22.1** (11.5-52.6)	**34.9** (21.1-159)	390
20 years and older	11-12	**8.04** (7.07-9.14)	**6.52** (5.88-7.69)	**14.8** (12.1-18.8)	**32.4** (25.2-39.8)	**49.7** (38.2-70.1)	1714
Gender							
Males	11-12	**7.20** (6.15-8.43)	**6.13** (5.18-7.23)	**12.5** (10.5-15.2)	**28.3** (20.2-34.9)	**50.4** (33.3-69.6)	1261
Females	11-12	**8.35** (7.40-9.42)	**6.64** (6.12-7.37)	**15.0** (12.2-19.1)	**33.1** (26.1-41.4)	**50.7** (39.8-79.0)	1241
Race/ethnicity							
Mexican Americans	11-12	**8.00** (6.85-9.36)	**6.91** (6.07-7.98)	**11.9** (9.05-14.6)	**26.1** (16.7-39.4)	**40.8** (24.0-70.1)	317
Non-Hispanic blacks	11-12	**7.24** (5.51-9.51)	**5.83** (4.65-7.96)	**13.5** (9.02-19.0)	**28.8** (21.5-46.3)	**55.4** (31.6-87.1)	669
Non-Hispanic whites	11-12	**7.13** (6.05-8.39)	**5.72** (5.05-6.70)	**12.4** (10.3-15.4)	**28.4** (21.7-37.5)	**46.5** (33.1-75.8)	818
All Hispanics	11-12	**8.53** (7.74-9.40)	**7.60** (6.84-8.42)	**12.8** (11.2-14.1)	**25.3** (20.8-30.8)	**37.5** (28.2-50.6)	573
Asians	11-12	**22.3** (19.1-26.1)	**20.1** (16.3-25.2)	**39.4** (32.2-61.0)	**100** (73.2-129)	**162** (114-202)	353

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Inorganic-related Arsenic Species (2003 - 2010)

*Sum of arsenic acid, arsenous acid, dimethylarsinic acid, and monomethylarsonic acid***

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**6.52** (6.03-7.04)	**6.10** (5.50-6.40)	**8.60** (8.00-9.50)	**14.0** (12.5-15.4)	**19.1** (15.8-22.9)	2572
	05-06	**6.84** (6.35-7.38)	**6.40** (5.88-6.85)	**9.00** (8.19-10.0)	**13.9** (12.0-16.5)	**18.5** (15.8-21.7)	2588
	07-08	**6.47** (6.20-6.76)	**6.02** (5.74-6.26)	**8.55** (8.03-9.22)	**12.9** (11.8-14.0)	**16.8** (14.7-18.9)	2576
	09-10	**6.56** (6.23-6.90)	**5.87** (5.57-6.09)	**8.80** (8.14-9.47)	**14.6** (12.3-17.2)	**20.8** (17.8-24.5)	2852
Age group							
6-11 years	03-04	**6.46** (5.67-7.35)	**6.10** (5.80-6.90)	**8.50** (7.10-10.0)	**12.1** (10.0-14.7)	**15.0** (10.7-26.3)	292
	05-06	**6.71** (6.13-7.35)	**6.27** (5.44-6.98)	**8.46** (7.48-9.72)	**13.5** (9.72-16.1)	**16.1** (14.0-18.3)	354
	07-08	**6.70** (6.15-7.31)	**6.08** (5.77-6.44)	**8.78** (7.72-10.3)	**13.9** (10.9-16.5)	**18.3** (12.2-42.3)	390
	09-10	**6.29** (5.85-6.75)	**5.80** (5.11-6.32)	**8.34** (7.67-9.07)	**13.2** (10.7-14.6)	**16.0** (14.0-17.9)	379
12-19 years	03-04	**6.72** (6.08-7.42)	**6.10** (5.90-7.00)	**8.80** (7.70-10.4)	**13.1** (10.6-16.6)	**16.7** (14.5-20.3)	729
	05-06	**6.82** (6.18-7.53)	**6.38** (5.67-7.45)	**8.78** (7.77-10.4)	**13.1** (10.9-15.4)	**16.4** (13.3-17.7)	703
	07-08	**6.42** (5.89-6.99)	**6.34** (5.60-6.95)	**8.15** (7.33-9.69)	**11.8** (10.5-13.4)	**14.6** (12.0-18.1)	366
	09-10	**5.84** (5.43-6.27)	**5.31** (4.89-5.85)	**7.67** (6.79-8.60)	**11.4** (9.66-13.1)	**13.9** (11.8-17.0)	453
20 years and older	03-04	**6.49** (6.02-7.00)	**6.00** (5.30-6.20)	**8.60** (8.10-9.40)	**14.1** (12.7-15.6)	**19.5** (16.8-24.9)	1550
	05-06	**6.86** (6.34-7.42)	**6.43** (5.83-6.87)	**9.10** (8.22-10.2)	**14.1** (12.0-17.3)	**19.9** (15.8-24.0)	1531
	07-08	**6.46** (6.17-6.76)	**5.95** (5.71-6.18)	**8.57** (8.00-9.40)	**13.0** (11.8-14.2)	**17.2** (15.0-19.2)	1820
	09-10	**6.70** (6.33-7.10)	**5.95** (5.71-6.20)	**9.12** (8.20-9.87)	**15.4** (12.6-19.6)	**23.2** (19.4-27.4)	2020
Gender							
Males	03-04	**7.03** (6.38-7.74)	**6.40** (6.00-7.10)	**9.20** (8.30-10.5)	**14.8** (12.7-18.1)	**21.3** (16.0-28.1)	1283
	05-06	**7.10** (6.56-7.68)	**6.59** (6.10-7.05)	**9.37** (8.22-10.5)	**14.3** (11.6-17.7)	**18.4** (14.9-23.1)	1276
	07-08	**6.94** (6.54-7.36)	**6.44** (6.13-6.87)	**9.22** (8.53-9.89)	**13.5** (12.4-15.2)	**18.3** (14.9-26.4)	1289
	09-10	**6.80** (6.30-7.34)	**6.09** (5.71-6.54)	**9.06** (8.27-9.89)	**15.0** (12.0-20.4)	**23.5** (16.3-29.4)	1396
Females	03-04	**6.08** (5.62-6.57)	**5.50** (5.10-6.10)	**8.10** (7.10-9.10)	**12.7** (11.1-14.9)	**17.3** (14.6-21.9)	1289
	05-06	**6.60** (6.11-7.14)	**6.14** (5.47-6.81)	**8.77** (8.06-9.51)	**13.3** (11.7-16.2)	**18.6** (15.8-22.0)	1312
	07-08	**6.06** (5.81-6.33)	**5.66** (5.42-5.84)	**7.96** (7.35-8.59)	**11.9** (10.7-13.7)	**15.8** (14.0-16.8)	1287
	09-10	**6.33** (5.98-6.70)	**5.64** (5.21-5.95)	**8.36** (7.70-9.60)	**14.2** (12.1-16.2)	**19.6** (17.8-21.1)	1456
Race/ethnicity							
Mexican Americans	03-04	**7.72** (7.09-8.41)	**7.10** (6.50-8.00)	**10.1** (9.10-11.8)	**15.5** (12.8-20.5)	**22.7** (16.5-29.4)	622
	05-06	**7.27** (6.94-7.62)	**7.05** (6.69-7.42)	**9.83** (9.21-10.5)	**12.5** (11.7-14.5)	**16.1** (13.9-18.5)	651
	07-08	**7.22** (6.80-7.66)	**7.02** (6.43-7.46)	**9.89** (9.18-10.3)	**12.7** (11.3-14.3)	**15.3** (13.6-23.3)	513
	09-10	**6.76** (6.19-7.38)	**6.31** (5.48-7.19)	**9.12** (8.06-10.3)	**14.1** (11.9-16.5)	**19.8** (15.8-22.2)	618
Non-Hispanic blacks	03-04	**7.04** (6.42-7.73)	**6.50** (6.10-7.30)	**9.30** (8.70-10.3)	**15.7** (12.3-18.1)	**19.4** (17.1-21.4)	725
	05-06	**7.05** (6.36-7.82)	**6.48** (5.73-7.16)	**8.85** (7.77-9.80)	**14.0** (11.0-16.5)	**17.9** (14.5-31.0)	695
	07-08	**7.06** (6.76-7.38)	**6.45** (6.00-6.81)	**9.43** (8.55-10.3)	**14.5** (13.3-15.8)	**18.5** (15.8-23.5)	586
	09-10	**7.03** (6.44-7.67)	**6.28** (5.66-6.92)	**9.84** (8.48-11.4)	**16.0** (12.7-19.9)	**22.2** (17.8-33.5)	543
Non-Hispanic whites	03-04	**5.96** (5.54-6.41)	**5.50** (5.10-6.10)	**7.70** (7.10-8.50)	**12.0** (9.80-13.7)	**15.1** (12.8-18.1)	1081
	05-06	**6.55** (5.96-7.20)	**6.10** (5.42-6.83)	**8.50** (7.74-9.73)	**13.3** (11.1-16.2)	**17.3** (14.1-21.4)	1050
	07-08	**5.95** (5.69-6.23)	**5.66** (5.35-5.96)	**7.72** (7.26-8.25)	**11.1** (10.3-12.2)	**14.0** (12.5-16.1)	1063
	09-10	**5.96** (5.75-6.18)	**5.46** (5.22-5.65)	**7.89** (7.56-8.19)	**11.5** (10.1-13.3)	**15.3** (13.3-18.8)	1210

**See Calculation of Inorganic-related Arsenic Species for additional information.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Inorganic-related Arsenic Species (2011 - 2012)

*Sum of arsenic acid, arsenous acid, dimethylarsinic acid, and monomethylarsonic acid***

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**5.59** (5.24-5.96)	**5.15** (4.73-5.56)	**7.73** (7.09-8.57)	**12.2** (11.1-13.9)	**17.2** (14.6-19.9)	2517
Age group							
6-11 years	11-12	**5.48** (5.05-5.95)	**5.36** (4.50-5.98)	**7.58** (7.08-8.34)	**11.2** (9.93-12.1)	**13.4** (11.6-16.2)	401
12-19 years	11-12	**5.37** (4.67-6.17)	**5.09** (4.24-6.00)	**7.28** (6.27-8.32)	**11.1** (8.34-14.9)	**15.6** (10.8-23.9)	392
20 years and older	11-12	**5.64** (5.28-6.01)	**5.15** (4.71-5.57)	**7.83** (7.07-8.88)	**12.5** (11.2-14.8)	**17.6** (15.2-20.0)	1724
Gender							
Males	11-12	**6.00** (5.52-6.52)	**5.63** (5.11-6.28)	**8.31** (7.29-9.94)	**13.4** (11.7-16.5)	**18.8** (16.7-20.8)	1264
Females	11-12	**5.23** (4.90-5.58)	**4.70** (4.36-5.05)	**7.16** (6.47-8.01)	**11.6** (10.1-12.9)	**14.9** (12.3-20.5)	1253
Race/ethnicity							
Mexican Americans	11-12	**5.76** (5.37-6.18)	**5.26** (5.02-5.77)	**7.71** (7.37-8.54)	**11.9** (10.1-13.8)	**16.8** (12.1-19.9)	317
Non-Hispanic blacks	11-12	**6.20** (5.52-6.97)	**5.77** (5.09-6.42)	**8.81** (7.43-10.6)	**14.4** (12.1-18.0)	**20.5** (16.5-25.4)	672
Non-Hispanic whites	11-12	**5.10** (4.79-5.43)	**4.69** (4.35-5.11)	**7.01** (6.36-7.72)	**10.7** (8.90-12.1)	**12.9** (11.9-16.0)	825
All Hispanics	11-12	**6.22** (5.52-7.01)	**5.72** (5.08-6.51)	**8.97** (7.41-11.1)	**14.5** (11.4-19.0)	**19.9** (15.8-21.6)	574
Asians	11-12	**10.1** (9.11-11.2)	**9.53** (8.32-11.1)	**17.8** (14.6-19.9)	**29.6** (24.5-34.2)	**42.3** (33.0-46.4)	356

**See Calculation of Inorganic-related Arsenic Species for additional information.

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Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Inorganic-related Arsenic Species (creatinine corrected) (2003 - 2010)

*Sum of arsenic acid, arsenous acid, dimethylarsinic acid, and monomethylarsonic acid***

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**6.47** (5.84-7.16)	**5.95** (5.40-6.62)	**9.64** (8.25-11.4)	**15.7** (13.3-18.5)	**20.0** (17.4-23.9)	2569
	05-06	**6.72** (6.30-7.17)	**6.21** (5.81-6.58)	**9.75** (8.81-11.0)	**16.2** (14.2-18.0)	**21.3** (18.7-24.3)	2588
	07-08	**6.75** (6.41-7.12)	**6.42** (5.97-6.88)	**9.77** (9.03-10.6)	**15.5** (14.2-17.0)	**21.2** (18.1-23.3)	2576
	09-10	**6.94** (6.55-7.36)	**6.55** (6.04-7.00)	**10.3** (9.58-11.0)	**16.4** (14.9-17.9)	**22.5** (19.0-26.5)	2851
Age group							
6-11 years	03-04	**7.52** (6.45-8.77)	**6.51** (6.05-8.30)	**10.5** (8.06-13.5)	**16.8** (12.4-19.7)	**19.2** (14.3-41.3)	292
	05-06	**8.28** (7.20-9.52)	**7.73** (6.44-8.96)	**10.7** (8.86-14.1)	**17.4** (13.6-22.1)	**24.0** (18.8-26.2)	354
	07-08	**8.81** (7.92-9.80)	**8.09** (7.23-9.44)	**12.1** (10.8-13.9)	**18.3** (15.5-23.4)	**24.5** (18.4-37.9)	390
	09-10	**8.47** (7.76-9.25)	**7.92** (7.20-8.73)	**10.7** (9.71-12.6)	**17.0** (13.8-22.3)	**24.9** (14.8-42.2)	378
12-19 years	03-04	**4.79** (4.33-5.29)	**4.46** (3.98-5.00)	**6.31** (5.46-7.44)	**8.96** (8.17-11.4)	**12.8** (10.2-15.7)	728
	05-06	**5.24** (4.95-5.55)	**4.97** (4.61-5.44)	**7.23** (6.71-7.72)	**10.7** (9.48-11.6)	**13.3** (11.5-15.5)	703
	07-08	**5.00** (4.64-5.39)	**4.72** (4.47-5.13)	**6.68** (5.85-7.49)	**9.85** (7.88-11.8)	**12.1** (10.2-14.8)	366
	09-10	**5.44** (4.97-5.95)	**4.83** (4.46-5.50)	**8.10** (6.54-9.23)	**12.1** (10.4-15.1)	**16.6** (13.6-20.5)	453
20 years and older	03-04	**6.67** (6.00-7.41)	**6.12** (5.54-7.03)	**10.2** (8.51-12.0)	**15.9** (13.8-19.2)	**21.2** (18.2-25.5)	1548
	05-06	**6.82** (6.39-7.28)	**6.27** (5.80-6.79)	**10.3** (9.07-11.5)	**16.7** (14.5-18.9)	**22.2** (19.3-25.9)	1531
	07-08	**6.87** (6.48-7.29)	**6.54** (6.14-7.08)	**9.90** (9.10-11.1)	**16.2** (14.2-18.0)	**21.3** (18.2-24.3)	1820
	09-10	**7.06** (6.61-7.53)	**6.67** (6.13-7.09)	**10.6** (9.71-11.4)	**17.0** (15.0-18.9)	**23.3** (19.5-27.5)	2020
Gender							
Males	03-04	**5.93** (5.19-6.78)	**5.43** (4.73-6.14)	**8.57** (7.19-10.7)	**13.7** (11.4-17.4)	**19.4** (14.7-25.6)	1283
	05-06	**5.83** (5.41-6.28)	**5.43** (5.00-5.90)	**8.27** (7.26-9.46)	**12.9** (11.3-15.5)	**18.0** (14.2-20.4)	1276
	07-08	**6.21** (5.91-6.53)	**5.89** (5.47-6.27)	**8.87** (8.27-9.71)	**14.3** (12.7-16.6)	**18.9** (17.0-21.3)	1289
	09-10	**6.17** (5.82-6.54)	**5.70** (5.34-6.30)	**8.95** (8.40-9.46)	**14.3** (12.5-15.8)	**18.1** (16.0-22.0)	1395
Females	03-04	**7.02** (6.45-7.64)	**6.59** (5.94-7.20)	**10.5** (8.95-12.4)	**16.8** (14.9-19.1)	**20.6** (18.0-25.4)	1285
	05-06	**7.70** (7.22-8.21)	**7.11** (6.54-7.73)	**11.4** (10.3-13.1)	**17.9** (16.2-20.0)	**25.7** (22.1-28.5)	1312
	07-08	**7.30** (6.85-7.77)	**7.00** (6.44-7.48)	**10.4** (9.59-11.5)	**16.2** (13.7-20.1)	**22.7** (18.9-28.3)	1287
	09-10	**7.77** (7.27-8.31)	**7.29** (6.80-7.91)	**11.7** (10.9-12.5)	**18.9** (16.3-22.0)	**26.5** (20.4-34.0)	1456
Race/ethnicity							
Mexican Americans	03-04	**7.16** (6.29-8.15)	**6.78** (5.58-8.01)	**10.4** (8.19-12.7)	**15.6** (13.3-18.9)	**20.0** (16.1-29.9)	621
	05-06	**6.83** (6.38-7.32)	**6.55** (5.94-7.34)	**9.40** (8.51-10.6)	**13.6** (11.6-15.9)	**16.2** (14.3-20.0)	651
	07-08	**7.19** (6.39-8.10)	**7.07** (6.17-7.76)	**9.73** (8.28-11.4)	**15.4** (12.9-19.2)	**21.3** (17.8-24.3)	513
	09-10	**7.04** (6.44-7.69)	**6.92** (6.15-7.70)	**10.3** (9.19-10.9)	**14.7** (13.3-16.2)	**18.9** (16.9-20.6)	618
Non-Hispanic blacks	03-04	**5.08** (4.63-5.56)	**4.72** (4.34-5.25)	**7.04** (6.23-8.00)	**10.7** (8.71-14.3)	**15.0** (11.4-19.1)	725
	05-06	**5.08** (4.63-5.57)	**4.73** (4.33-5.21)	**6.82** (6.13-7.61)	**10.6** (8.32-13.5)	**15.1** (11.2-25.0)	695
	07-08	**5.19** (4.86-5.55)	**4.79** (4.41-5.39)	**7.28** (6.97-7.97)	**11.2** (10.2-12.2)	**14.7** (12.2-18.9)	586
	09-10	**5.58** (5.10-6.10)	**5.01** (4.58-5.42)	**8.50** (6.94-10.4)	**13.6** (12.6-15.5)	**19.0** (14.6-23.1)	542
Non-Hispanic whites	03-04	**6.28** (5.55-7.10)	**5.82** (5.19-6.53)	**9.10** (7.74-11.4)	**14.8** (11.4-18.8)	**19.4** (15.8-23.6)	1079
	05-06	**6.78** (6.30-7.31)	**6.26** (5.79-6.78)	**10.2** (8.85-11.4)	**16.2** (13.8-18.2)	**20.8** (17.9-24.6)	1050
	07-08	**6.66** (6.29-7.06)	**6.37** (5.73-6.95)	**9.64** (8.88-10.2)	**14.8** (12.8-16.5)	**20.0** (16.5-22.7)	1063
	09-10	**6.61** (6.20-7.05)	**6.31** (5.76-6.81)	**9.44** (8.75-10.0)	**14.7** (13.6-15.8)	**18.9** (17.0-22.0)	1210

**See Calculation of Inorganic-related Arsenic Species for additional information.

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Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Inorganic-related Arsenic Species (creatinine corrected) (2011 - 2012)

*Sum of arsenic acid, arsenous acid, dimethylarsinic acid, and monomethylarsonic acid***

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**6.31** (6.02-6.63)	**6.00** (5.64-6.37)	**9.46** (8.88-10.1)	**15.1** (13.4-16.5)	**19.6** (18.3-20.4)	2516
Age group							
6-11 years	11-12	**7.77** (7.36-8.20)	**7.33** (6.95-8.26)	**10.6** (9.74-11.9)	**15.9** (14.3-16.8)	**20.2** (16.8-22.3)	401
12-19 years	11-12	**5.13** (4.48-5.88)	**4.76** (4.40-5.11)	**7.40** (5.86-8.81)	**11.4** (8.17-16.8)	**16.8** (11.4-28.7)	392
20 years and older	11-12	**6.37** (6.08-6.67)	**6.09** (5.72-6.52)	**9.53** (8.98-10.2)	**15.6** (13.6-17.0)	**19.6** (18.3-20.4)	1723
Gender							
Males	11-12	**5.61** (5.24-6.01)	**5.27** (4.81-5.87)	**8.39** (7.73-9.04)	**12.4** (10.6-13.9)	**16.8** (13.6-19.1)	1263
Females	11-12	**7.06** (6.69-7.45)	**6.77** (6.30-7.15)	**11.0** (10.2-11.9)	**16.8** (15.3-19.1)	**21.5** (19.4-24.2)	1253
Race/ethnicity							
Mexican Americans	11-12	**6.48** (6.05-6.94)	**6.33** (5.77-6.82)	**9.18** (7.97-9.86)	**12.4** (11.2-13.3)	**16.0** (13.0-19.0)	317
Non-Hispanic blacks	11-12	**4.83** (4.23-5.53)	**4.53** (3.92-5.26)	**7.30** (6.09-8.27)	**10.9** (9.40-13.2)	**16.2** (12.6-17.3)	672
Non-Hispanic whites	11-12	**6.13** (5.77-6.50)	**5.81** (5.27-6.36)	**9.09** (8.41-9.86)	**14.3** (12.4-16.2)	**18.6** (16.2-19.8)	824
All Hispanics	11-12	**6.96** (6.56-7.38)	**6.90** (6.45-7.36)	**9.80** (9.30-10.5)	**13.4** (12.0-15.9)	**17.2** (14.7-20.3)	574
Asians	11-12	**13.6** (11.9-15.4)	**13.2** (11.4-14.6)	**20.8** (16.5-24.6)	**33.9** (24.6-58.3)	**58.8** (36.4-71.5)	356

**See Calculation of Inorganic-related Arsenic Species for additional information.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenic (V) acid (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.50)	2568
	05-06	*	< LOD	< LOD	< LOD	**1.06** (<LOD-1.43)	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2852
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.30)	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.60)	728
	05-06	*	< LOD	< LOD	< LOD	**1.00** (<LOD-1.30)	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	453
20 years and older	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.50)	1548
	05-06	*	< LOD	< LOD	< LOD	**1.09** (<LOD-1.71)	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2020
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.50)	1284
	05-06	*	< LOD	< LOD	< LOD	**1.14** (<LOD-1.71)	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1396
Females	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.30)	1284
	05-06	*	< LOD	< LOD	< LOD	**1.01** (<LOD-1.22)	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1456
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.60)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.80)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	543
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.50)	1078
	05-06	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.74)	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1210

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 1.0, 1.0, 1.0, and 1.0 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenic (V) acid (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2517
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	401
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	392
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1724
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1264
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1253
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	317
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	672
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	825
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	574
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	356

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.87.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenic (V) acid (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	**3.04** (<LOD-3.50)	2568
	05-06	*	< LOD	< LOD	< LOD	**3.23** (<LOD-3.55)	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2851
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	**2.80** (<LOD-4.00)	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	03-04	*	< LOD	< LOD	< LOD	**1.75** (<LOD-2.41)	728
	05-06	*	< LOD	< LOD	< LOD	**1.69** (<LOD-2.73)	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	453
20 years and older	03-04	*	< LOD	< LOD	< LOD	**3.18** (<LOD-3.70)	1548
	05-06	*	< LOD	< LOD	< LOD	**3.38** (<LOD-3.94)	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2020
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	**2.61** (<LOD-3.18)	1284
	05-06	*	< LOD	< LOD	< LOD	**2.14** (<LOD-2.73)	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1395
Females	03-04	*	< LOD	< LOD	< LOD	**3.33** (<LOD-3.89)	1284
	05-06	*	< LOD	< LOD	< LOD	**3.55** (<LOD-4.44)	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1456
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	**2.69** (<LOD-3.50)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	**1.75** (<LOD-2.19)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	542
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	**3.33** (<LOD-3.95)	1078
	05-06	*	< LOD	< LOD	< LOD	**3.38** (<LOD-3.80)	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1210

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenic (V) acid (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2516
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	401
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	392
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1723
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1263
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1253
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	317
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	672
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	824
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	574
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	356

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenobetaine (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.55** (1.31-1.83)	**1.00** (.800-1.40)	**5.20** (4.00-6.50)	**16.8** (12.7-22.3)	**35.0** (27.6-44.6)	2568
	05-06	**1.86** (1.43-2.41)	**1.53** (.980-2.26)	**6.73** (4.80-8.91)	**22.6** (16.5-30.3)	**40.6** (30.7-59.4)	2588
	07-08	*	**.670** (.510-.910)	**4.26** (3.53-4.88)	**16.6** (12.5-20.2)	**29.5** (22.8-37.1)	2576
	09-10	**1.59** (1.38-1.83)	**.940** (.720-1.26)	**6.18** (4.67-7.87)	**23.5** (19.8-30.1)	**50.4** (35.7-63.2)	2870
Age group							
6-11 years	03-04	*	**< LOD**	**1.80** (.800-4.00)	**8.80** (3.90-29.9)	**29.9** (6.20-190)	292
	05-06	*	**< LOD**	**2.22** (.620-5.35)	**7.14** (2.34-29.9)	**18.9** (5.46-45.0)	354
	07-08	*	**< LOD**	**1.24** (.780-2.42)	**6.71** (3.37-8.38)	**13.0** (7.22-25.2)	390
	09-10	*	**< LOD**	**1.20** (.590-3.12)	**7.98** (5.20-15.7)	**19.4** (9.25-47.9)	380
12-19 years	03-04	*	**.600** (.400-.800)	**3.20** (2.00-4.70)	**13.9** (7.20-25.1)	**31.8** (17.2-35.8)	728
	05-06	*	**.550** (<LOD-1.14)	**3.76** (1.95-7.16)	**12.4** (9.15-20.4)	**25.6** (16.4-32.4)	703
	07-08	*	**< LOD**	**1.72** (.780-2.62)	**4.88** (3.49-9.17)	**10.4** (6.81-23.6)	366
	09-10	*	**< LOD**	**2.07** (1.26-3.60)	**11.0** (5.35-16.7)	**17.8** (12.8-24.0)	455
20 years and older	03-04	**1.74** (1.48-2.05)	**1.30** (1.00-1.60)	**6.10** (4.90-7.10)	**18.5** (14.0-23.5)	**35.5** (26.8-50.5)	1548
	05-06	**2.20** (1.71-2.84)	**1.89** (1.41-2.64)	**8.14** (5.86-10.4)	**27.6** (18.7-35.7)	**43.9** (36.0-67.9)	1531
	07-08	**1.46** (1.28-1.67)	**.960** (.750-1.22)	**5.08** (4.30-6.20)	**19.1** (14.3-23.7)	**31.7** (23.9-46.1)	1820
	09-10	**1.92** (1.63-2.26)	**1.33** (.960-1.91)	**7.60** (6.06-9.90)	**28.2** (21.9-34.9)	**59.5** (45.7-76.7)	2035
Gender							
Males	03-04	**1.66** (1.43-1.93)	**1.20** (.900-1.50)	**5.80** (4.40-7.10)	**18.6** (13.9-23.7)	**35.0** (26.8-40.5)	1284
	05-06	**1.83** (1.40-2.40)	**1.44** (.920-2.04)	**6.63** (5.06-8.66)	**23.2** (12.8-33.4)	**37.1** (28.5-51.3)	1276
	07-08	*	**.910** (.660-1.26)	**5.07** (4.01-6.81)	**19.1** (13.8-22.6)	**30.3** (22.8-46.1)	1289
	09-10	**1.71** (1.48-1.97)	**.990** (.780-1.33)	**7.14** (5.38-9.86)	**26.8** (21.5-31.8)	**57.4** (36.4-64.6)	1402
Females	03-04	**1.45** (1.17-1.80)	**.900** (.700-1.40)	**4.70** (3.40-6.20)	**15.6** (11.1-25.3)	**32.7** (21.1-51.3)	1284
	05-06	**1.88** (1.42-2.50)	**1.64** (.950-2.51)	**6.81** (4.03-9.88)	**21.8** (17.3-30.1)	**43.3** (33.8-67.9)	1312
	07-08	*	**.530** (.410-.650)	**3.52** (2.94-4.35)	**14.0** (10.9-17.5)	**29.5** (19.4-34.0)	1287
	09-10	**1.49** (1.20-1.84)	**.890** (.590-1.35)	**5.54** (3.56-7.74)	**21.2** (14.7-32.7)	**47.1** (32.5-76.4)	1468
Race/ethnicity							
Mexican Americans	03-04	**1.19** (.871-1.62)	**.800** (.500-1.30)	**3.20** (1.80-5.20)	**10.2** (6.70-21.4)	**31.4** (16.3-39.1)	621
	05-06	**1.44** (1.23-1.69)	**1.04** (.770-1.35)	**3.90** (3.03-5.06)	**16.8** (11.1-32.0)	**41.4** (23.4-57.9)	651
	07-08	*	**.560** (<LOD-.910)	**3.27** (2.00-5.65)	**16.9** (9.73-20.8)	**29.6** (19.3-40.5)	513
	09-10	*	**.640** (.440-.800)	**3.58** (1.80-5.89)	**15.5** (7.83-24.6)	**31.9** (18.7-44.7)	617
Non-Hispanic blacks	03-04	**2.29** (1.60-3.28)	**2.00** (1.20-3.50)	**7.70** (5.00-12.0)	**23.7** (13.2-38.7)	**45.6** (25.1-94.0)	725
	05-06	**2.55** (1.64-3.99)	**2.42** (1.15-4.58)	**8.74** (6.01-14.4)	**23.8** (15.9-48.9)	**59.6** (30.5-121)	695
	07-08	**1.58** (1.31-1.90)	**1.11** (.750-1.60)	**5.88** (4.12-8.13)	**21.9** (16.4-24.9)	**35.9** (25.4-47.7)	586
	09-10	**1.99** (1.60-2.47)	**1.79** (1.05-2.41)	**7.61** (5.34-10.0)	**25.5** (15.4-37.6)	**51.2** (31.0-90.9)	546
Non-Hispanic whites	03-04	**1.37** (1.11-1.68)	**.800** (.700-1.20)	**4.30** (2.50-6.30)	**13.3** (9.70-21.4)	**29.3** (21.4-35.5)	1078
	05-06	**1.74** (1.27-2.40)	**1.41** (.750-2.27)	**6.40** (3.93-9.04)	**22.4** (14.1-30.1)	**38.4** (27.8-66.8)	1050
	07-08	*	**.530** (<LOD-.780)	**3.63** (3.06-4.38)	**12.6** (9.08-17.1)	**24.3** (17.6-30.3)	1063
	09-10	**1.43** (1.24-1.65)	**.800** (.610-1.18)	**5.40** (3.77-7.27)	**20.6** (17.7-24.5)	**41.3** (30.6-59.5)	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.4, 0.4, 0.4, and 0.4 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenobetaine (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**4.62** (3.25-6.25)	**18.0** (13.7-23.2)	**36.5** (25.7-51.9)	2517
Age group							
6-11 years	11-12	*	**< LOD**	**1.58** (<LOD-4.12)	**15.2** (6.60-35.6)	**49.6** (20.0-60.1)	401
12-19 years	11-12	*	**< LOD**	**1.82** (<LOD-8.46)	**17.6** (6.92-26.5)	**32.6** (15.3-100)	392
20 years and older	11-12	*	**< LOD**	**5.26** (4.07-6.58)	**18.1** (13.4-24.0)	**36.5** (24.4-53.4)	1724
Gender							
Males	11-12	*	**< LOD**	**5.22** (3.38-7.16)	**18.4** (13.7-25.9)	**41.7** (26.4-60.3)	1264
Females	11-12	*	**< LOD**	**4.18** (2.84-6.11)	**17.0** (10.6-22.7)	**33.5** (22.1-53.1)	1253
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**3.78** (1.93-5.84)	**12.5** (6.11-17.6)	**19.3** (12.9-34.7)	317
Non-Hispanic blacks	11-12	*	**1.19** (<LOD-2.91)	**7.09** (3.79-13.4)	**30.2** (17.2-51.9)	**57.9** (36.1-81.5)	672
Non-Hispanic whites	11-12	*	**< LOD**	**4.07** (2.39-6.12)	**16.7** (9.30-22.5)	**30.0** (23.2-47.0)	825
All Hispanics	11-12	*	**< LOD**	**3.78** (2.65-4.73)	**12.2** (7.70-16.8)	**19.3** (13.9-37.4)	574
Asians	11-12	**5.15** (4.31-6.14)	**4.80** (3.76-5.82)	**17.3** (13.2-21.3)	**46.1** (29.1-74.1)	**85.6** (51.8-110)	356

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.19.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenobetaine (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.54** (1.30-1.82)	**1.16** (.959-1.43)	**5.00** (3.62-6.91)	**16.2** (12.5-20.3)	**29.4** (24.0-36.4)	2568
	05-06	**1.82** (1.40-2.37)	**1.64** (1.10-2.41)	**6.64** (4.48-8.79)	**20.3** (14.5-28.1)	**37.0** (27.5-58.3)	2588
	07-08	*	**1.00** (.850-1.18)	**4.07** (3.36-4.98)	**14.7** (11.1-17.8)	**27.7** (18.9-45.4)	2576
	09-10	**1.69** (1.45-1.97)	**1.23** (.980-1.47)	**6.48** (4.90-8.00)	**23.6** (18.5-30.7)	**49.6** (36.6-61.3)	2869
Age group							
6-11 years	03-04	*	**< LOD**	**2.00** (1.15-4.83)	**12.2** (4.13-39.7)	**29.6** (6.80-153)	292
	05-06	*	**< LOD**	**2.88** (1.04-6.25)	**8.77** (2.88-40.5)	**23.6** (6.86-74.8)	354
	07-08	*	**< LOD**	**2.11** (1.27-3.79)	**8.98** (4.76-14.8)	**16.4** (8.98-23.8)	390
	09-10	*	**< LOD**	**1.70** (1.21-3.02)	**9.52** (5.08-20.7)	**24.9** (9.81-50.7)	379
12-19 years	03-04	*	**.531** (.400-.638)	**2.14** (1.39-3.51)	**9.29** (4.29-14.7)	**17.3** (10.4-28.7)	728
	05-06	*	**.620** (<LOD-.800)	**2.82** (1.58-4.77)	**10.5** (7.03-13.7)	**15.4** (11.8-22.3)	703
	07-08	*	**< LOD**	**1.28** (.650-1.72)	**5.17** (2.31-6.53)	**9.88** (5.72-16.0)	366
	09-10	*	**< LOD**	**2.25** (1.17-3.76)	**8.69** (5.03-12.8)	**14.0** (9.82-15.5)	455
20 years and older	03-04	**1.79** (1.51-2.12)	**1.47** (1.15-1.88)	**5.91** (4.32-7.72)	**17.2** (13.4-21.8)	**30.1** (26.1-36.4)	1548
	05-06	**2.19** (1.70-2.82)	**2.13** (1.40-2.83)	**7.79** (5.38-10.2)	**24.4** (16.6-32.9)	**43.1** (30.5-71.4)	1531
	07-08	**1.55** (1.36-1.78)	**1.29** (1.13-1.52)	**5.27** (3.91-6.40)	**16.6** (12.2-21.6)	**33.4** (21.0-55.9)	1820
	09-10	**2.03** (1.70-2.42)	**1.52** (1.18-2.16)	**7.65** (6.04-10.4)	**27.7** (22.1-35.9)	**57.0** (39.7-71.9)	2035
Gender							
Males	03-04	**1.40** (1.18-1.67)	**1.11** (.909-1.28)	**4.78** (3.61-6.70)	**14.4** (11.1-18.5)	**26.5** (18.6-29.9)	1284
	05-06	**1.50** (1.15-1.96)	**1.25** (.800-1.93)	**5.11** (3.41-7.54)	**15.3** (11.2-20.8)	**30.5** (19.6-44.0)	1276
	07-08	*	**1.04** (.870-1.25)	**4.11** (3.16-5.30)	**14.9** (10.1-17.9)	**27.0** (17.8-49.2)	1289
	09-10	**1.56** (1.35-1.80)	**1.04** (.880-1.34)	**6.20** (4.34-7.79)	**23.4** (18.7-27.6)	**39.2** (32.0-54.8)	1401
Females	03-04	**1.68** (1.37-2.05)	**1.25** (.938-1.67)	**5.58** (3.50-7.43)	**17.2** (12.3-24.5)	**32.9** (25.6-46.3)	1284
	05-06	**2.20** (1.65-2.93)	**2.04** (1.30-2.92)	**7.86** (5.38-10.8)	**26.4** (16.6-35.6)	**46.2** (30.3-74.3)	1312
	07-08	*	**.980** (.800-1.18)	**4.06** (3.35-5.29)	**14.6** (11.1-17.8)	**29.6** (18.2-50.0)	1287
	09-10	**1.83** (1.48-2.26)	**1.36** (1.04-1.75)	**6.65** (4.68-9.21)	**24.1** (16.5-37.3)	**57.0** (36.3-71.3)	1468
Race/ethnicity							
Mexican Americans	03-04	**1.10** (.786-1.55)	**.877** (.612-1.40)	**2.93** (1.78-5.21)	**8.88** (5.50-15.4)	**19.0** (9.64-29.4)	621
	05-06	**1.35** (1.13-1.62)	**.970** (.810-1.19)	**4.21** (2.79-5.68)	**16.6** (10.5-21.3)	**36.9** (18.4-69.5)	651
	07-08	*	**.780** (<LOD-1.21)	**3.04** (1.99-5.09)	**13.7** (9.09-16.7)	**28.9** (16.2-46.7)	513
	09-10	*	**.790** (.670-.940)	**3.64** (2.28-4.41)	**13.5** (7.78-19.1)	**26.8** (16.5-42.0)	617
Non-Hispanic blacks	03-04	**1.65** (1.19-2.30)	**1.53** (.901-2.45)	**5.81** (4.25-7.82)	**13.6** (9.76-27.9)	**32.9** (13.4-82.1)	725
	05-06	**1.84** (1.20-2.83)	**1.71** (.910-2.95)	**6.07** (3.83-9.25)	**19.4** (10.4-45.2)	**47.5** (25.3-62.0)	695
	07-08	**1.16** (.955-1.41)	**.830** (.620-1.12)	**4.44** (3.23-6.58)	**14.9** (10.5-17.6)	**25.1** (17.4-40.0)	586
	09-10	**1.59** (1.29-1.96)	**1.30** (.850-2.04)	**5.92** (4.20-8.40)	**19.5** (13.5-27.1)	**37.9** (26.1-51.7)	545
Non-Hispanic whites	03-04	**1.44** (1.15-1.80)	**1.05** (.833-1.36)	**4.47** (2.73-6.83)	**14.3** (10.9-18.6)	**26.5** (18.6-32.0)	1078
	05-06	**1.81** (1.32-2.47)	**1.65** (.970-2.55)	**6.65** (3.95-9.34)	**19.7** (12.6-30.5)	**36.6** (25.1-71.4)	1050
	07-08	*	**.970** (<LOD-1.18)	**3.56** (2.93-4.53)	**11.6** (8.98-16.6)	**23.8** (15.5-41.7)	1063
	09-10	**1.60** (1.36-1.87)	**1.15** (.900-1.43)	**5.85** (4.33-7.65)	**22.8** (15.6-29.4)	**38.5** (32.0-57.0)	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenobetaine (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**5.63** (4.42-7.22)	**18.0** (13.8-26.1)	**36.9** (26.9-45.6)	2516
Age group							
6-11 years	11-12	*	**< LOD**	**4.35** (<LOD-6.46)	**16.0** (8.00-39.5)	**69.0** (16.0-102)	401
12-19 years	11-12	*	**< LOD**	**3.36** (<LOD-8.94)	**14.4** (5.56-23.8)	**25.9** (13.6-104)	392
20 years and older	11-12	*	**< LOD**	**6.25** (4.78-8.46)	**19.3** (14.0-28.4)	**35.8** (26.8-44.1)	1723
Gender							
Males	11-12	*	**< LOD**	**4.94** (3.50-6.67)	**16.7** (12.6-25.7)	**35.7** (23.4-52.8)	1263
Females	11-12	*	**< LOD**	**6.48** (4.79-8.60)	**18.8** (15.4-28.1)	**37.0** (26.2-46.8)	1253
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**3.87** (2.80-5.76)	**12.6** (8.36-22.6)	**25.9** (13.4-40.3)	317
Non-Hispanic blacks	11-12	*	**1.50** (<LOD-2.18)	**6.00** (2.63-12.4)	**20.3** (12.8-30.0)	**38.7** (22.6-78.2)	672
Non-Hispanic whites	11-12	*	**< LOD**	**5.00** (4.06-7.55)	**16.8** (12.7-28.7)	**35.7** (21.0-45.6)	824
All Hispanics	11-12	*	**< LOD**	**4.00** (3.48-4.75)	**13.5** (9.17-17.1)	**24.9** (16.6-30.9)	574
Asians	11-12	**6.90** (5.54-8.60)	**6.02** (4.78-7.88)	**21.5** (14.0-30.7)	**60.4** (42.8-82.0)	**95.7** (75.6-120)	356

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenocholine (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2871
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1403
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	546
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.6, 0.6, 0.6, and 0.6 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenocholine (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2517
Age group							
6-11 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	401
12-19 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	392
20 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1724
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1264
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1253
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	317
Non-Hispanic blacks	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	672
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	825
All Hispanics	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	574
Asians	11-12	*	**< LOD**	**< LOD**	**.310** (<LOD-.450)	**.560** (.370-.930)	356

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.28.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenocholine (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2870
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1402
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	545
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenocholine (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2516
Age group							
6-11 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	401
12-19 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	392
20 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1723
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1263
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1253
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	317
Non-Hispanic blacks	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	672
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	824
All Hispanics	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	574
Asians	11-12	*	**< LOD**	**< LOD**	**.952** (<LOD-1.33)	**1.43** (.952-2.00)	356

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenous (III) acid (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2871
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	**1.40** (<LOD-1.70)	728
	05-06	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.40)	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	**1.26** (<LOD-1.73)	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	**1.24** (<LOD-1.50)	1403
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	**2.00** (<LOD-3.00)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.76)	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.80)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	546
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 1.2, 1.2, 1.2, and 1.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenous (III) acid (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**.520** (<LOD-.600)	**.840** (.760-.960)	**1.11** (.980-1.27)	2517
Age group							
6-11 years	11-12	*	**< LOD**	**.540** (<LOD-.660)	**.870** (.710-1.00)	**1.03** (.820-1.22)	401
12-19 years	11-12	*	**< LOD**	**.610** (.480-.720)	**.920** (.810-1.14)	**1.18** (.980-1.43)	392
20 years and older	11-12	*	**< LOD**	**.500** (<LOD-.570)	**.830** (.750-.940)	**1.11** (.980-1.27)	1724
Gender							
Males	11-12	*	**< LOD**	**.600** (.520-.680)	**.980** (.840-1.13)	**1.31** (1.11-1.59)	1264
Females	11-12	*	**< LOD**	**< LOD**	**.760** (.600-.840)	**.940** (.810-1.07)	1253
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**.570** (.490-.660)	**.830** (.770-1.03)	**1.14** (.880-1.37)	317
Non-Hispanic blacks	11-12	*	**< LOD**	**.520** (<LOD-.680)	**.880** (.700-1.10)	**1.21** (.980-1.57)	672
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**.800** (.640-.900)	**1.03** (.830-1.18)	825
All Hispanics	11-12	*	**< LOD**	**.620** (.510-.760)	**.910** (.820-1.07)	**1.29** (1.07-1.43)	574
Asians	11-12	*	**.510** (<LOD-.610)	**.900** (.740-.990)	**1.32** (1.10-1.63)	**1.79** (1.53-2.31)	356

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.48.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenous (III) acid (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2870
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	**1.95** (<LOD-2.76)	728
	05-06	*	< LOD	< LOD	< LOD	**2.02** (<LOD-3.04)	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	**2.43** (<LOD-3.15)	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	**2.93** (<LOD-3.54)	1402
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	**3.08** (<LOD-4.44)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	**3.54** (<LOD-4.72)	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	**2.00** (<LOD-2.29)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	545
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenous (III) acid (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**.791** (<LOD-.850)	**1.35** (1.21-1.42)	**1.79** (1.55-1.89)	2516
Age group							
6-11 years	11-12	*	**< LOD**	**1.03** (<LOD-1.13)	**1.54** (1.26-1.79)	**2.00** (1.55-2.62)	401
12-19 years	11-12	*	**< LOD**	**.709** (.607-.850)	**1.11** (.971-1.31)	**1.36** (1.03-2.50)	392
20 years and older	11-12	*	**< LOD**	**.773** (<LOD-.850)	**1.36** (1.19-1.48)	**1.79** (1.55-1.95)	1723
Gender							
Males	11-12	*	**< LOD**	**.708** (.645-.756)	**1.12** (.981-1.25)	**1.48** (1.28-1.70)	1263
Females	11-12	*	**< LOD**	**< LOD**	**1.42** (1.36-1.62)	**1.89** (1.70-2.27)	1253
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**.723** (.630-.850)	**1.13** (.919-1.42)	**1.55** (1.13-2.20)	317
Non-Hispanic blacks	11-12	*	**< LOD**	**.514** (<LOD-.586)	**.919** (.739-1.06)	**1.22** (.971-1.64)	672
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**1.36** (1.21-1.48)	**1.79** (1.51-2.00)	824
All Hispanics	11-12	*	**< LOD**	**.762** (.704-.833)	**1.21** (1.00-1.48)	**1.55** (1.34-1.95)	574
Asians	11-12	*	**.739** (<LOD-.850)	**1.21** (1.06-1.45)	**1.96** (1.62-2.43)	**2.91** (2.00-3.64)	356

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Dimethylarsinic acid (2001 – 2010)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**3.71** (3.33-4.14)	**3.90** (3.00-4.00)	**6.00** (5.00-7.00)	**11.0** (9.20-12.0)	**16.0** (13.0-17.8)	2568
	05-06	**3.95** (3.59-4.35)	**3.90** (3.46-4.31)	**6.17** (5.53-7.04)	**10.3** (9.00-12.2)	**15.0** (12.2-17.8)	2588
	07-08	**3.67** (3.44-3.91)	**3.58** (3.44-3.84)	**5.96** (5.44-6.57)	**9.78** (8.72-11.2)	**13.3** (11.8-15.3)	2576
	09-10	**3.67** (3.43-3.93)	**3.50** (3.25-3.76)	**6.16** (5.59-6.73)	**11.5** (9.35-13.7)	**17.4** (14.0-21.0)	2871
Age group							
6-11 years	03-04	**3.73** (3.12-4.45)	**4.00** (3.00-4.00)	**6.00** (5.00-7.00)	**9.00** (7.00-12.0)	**12.0** (8.00-22.0)	292
	05-06	**3.96** (3.49-4.49)	**3.94** (3.20-4.71)	**5.94** (5.01-7.10)	**10.5** (7.10-12.1)	**13.0** (10.7-15.3)	354
	07-08	**3.86** (3.45-4.32)	**3.76** (3.47-4.01)	**6.10** (5.29-6.99)	**10.4** (7.57-13.9)	**15.2** (9.32-39.2)	390
	09-10	**3.53** (3.17-3.92)	**3.27** (2.81-3.87)	**5.76** (5.07-6.53)	**10.7** (7.84-11.9)	**12.8** (11.0-14.4)	380
12-19 years	03-04	**3.85** (3.34-4.42)	**4.00** (3.00-4.00)	**6.00** (5.00-7.10)	**9.30** (7.70-12.0)	**13.0** (10.0-16.0)	728
	05-06	**3.97** (3.46-4.55)	**3.97** (3.31-4.64)	**5.74** (5.11-7.10)	**9.43** (7.63-11.6)	**12.0** (10.7-13.9)	703
	07-08	**3.60** (3.16-4.09)	**3.66** (3.24-4.26)	**5.53** (4.75-6.72)	**8.90** (7.33-9.95)	**10.7** (9.08-13.3)	366
	09-10	**3.08** (2.77-3.43)	**2.89** (2.64-3.29)	**5.05** (4.44-5.77)	**7.89** (6.87-10.1)	**11.3** (8.75-13.8)	456
20 years and older	03-04	**3.69** (3.31-4.11)	**3.70** (3.00-4.00)	**6.00** (5.00-7.00)	**11.0** (10.0-12.0)	**16.0** (13.0-19.0)	1548
	05-06	**3.95** (3.58-4.36)	**3.87** (3.46-4.32)	**6.30** (5.59-7.28)	**10.3** (9.25-13.3)	**16.2** (12.5-19.4)	1531
	07-08	**3.66** (3.43-3.91)	**3.56** (3.41-3.80)	**5.97** (5.44-6.63)	**9.89** (8.72-11.4)	**13.8** (11.8-15.5)	1820
	09-10	**3.79** (3.51-4.09)	**3.60** (3.33-3.87)	**6.40** (5.71-7.03)	**12.1** (9.52-16.0)	**18.2** (15.8-23.6)	2035
Gender							
Males	03-04	**4.12** (3.60-4.71)	**4.00** (3.70-4.30)	**6.00** (5.60-7.70)	**11.0** (9.00-15.0)	**17.0** (12.1-22.0)	1284
	05-06	**4.17** (3.79-4.59)	**4.04** (3.68-4.43)	**6.32** (5.41-7.61)	**10.5** (8.68-13.3)	**14.8** (11.8-19.2)	1276
	07-08	**4.05** (3.73-4.40)	**3.96** (3.63-4.27)	**6.53** (5.77-7.15)	**10.3** (9.31-12.0)	**14.6** (11.6-20.2)	1289
	09-10	**3.89** (3.50-4.32)	**3.71** (3.35-4.11)	**6.33** (5.80-7.02)	**11.6** (8.80-17.3)	**19.2** (13.0-24.7)	1403
Females	03-04	**3.37** (3.00-3.78)	**3.00** (3.00-4.00)	**5.50** (4.80-6.20)	**10.0** (8.00-11.0)	**14.0** (11.0-17.7)	1284
	05-06	**3.75** (3.37-4.18)	**3.70** (3.28-4.21)	**6.03** (5.46-6.99)	**9.95** (8.81-12.2)	**15.5** (11.6-19.0)	1312
	07-08	**3.34** (3.13-3.57)	**3.37** (3.15-3.53)	**5.48** (5.00-6.05)	**8.99** (7.97-10.4)	**11.9** (10.7-13.9)	1287
	09-10	**3.48** (3.22-3.76)	**3.28** (2.95-3.63)	**5.85** (5.21-6.69)	**11.5** (9.42-13.3)	**16.1** (13.8-17.7)	1468
Race/ethnicity							
Mexican Americans	03-04	**4.72** (4.27-5.22)	**4.80** (4.00-5.00)	**7.00** (6.00-9.00)	**12.0** (10.0-16.0)	**17.0** (12.0-25.0)	621
	05-06	**4.43** (4.15-4.72)	**4.66** (4.26-5.13)	**6.93** (6.38-7.58)	**9.51** (8.70-11.1)	**13.1** (10.3-15.1)	651
	07-08	**4.36** (4.05-4.69)	**4.62** (4.07-5.07)	**7.14** (6.23-7.76)	**9.67** (8.39-10.8)	**11.7** (9.96-17.6)	513
	09-10	**3.90** (3.45-4.40)	**3.98** (3.18-4.63)	**6.53** (5.61-7.15)	**10.7** (8.95-13.2)	**16.2** (13.1-19.2)	618
Non-Hispanic blacks	03-04	**4.27** (3.71-4.92)	**4.00** (3.50-5.00)	**7.00** (6.00-8.00)	**11.6** (9.00-15.0)	**16.0** (14.0-18.7)	725
	05-06	**4.28** (3.68-4.98)	**4.02** (3.37-4.82)	**6.42** (5.31-7.36)	**10.9** (8.22-13.1)	**15.2** (11.5-27.1)	695
	07-08	**4.19** (3.92-4.49)	**3.98** (3.63-4.27)	**6.69** (5.80-7.43)	**11.2** (10.1-12.5)	**14.7** (12.1-19.2)	586
	09-10	**4.09** (3.63-4.61)	**3.93** (3.31-4.36)	**7.13** (5.99-8.63)	**12.3** (10.1-17.0)	**18.2** (13.7-27.8)	546
Non-Hispanic whites	03-04	**3.27** (2.95-3.62)	**3.00** (3.00-3.80)	**5.00** (4.60-6.00)	**9.00** (7.00-10.0)	**12.0** (9.50-15.0)	1078
	05-06	**3.69** (3.28-4.15)	**3.60** (3.19-4.08)	**5.66** (5.10-6.70)	**9.62** (8.11-11.8)	**13.9** (10.6-17.8)	1050
	07-08	**3.23** (3.01-3.48)	**3.34** (3.04-3.53)	**5.14** (4.77-5.59)	**8.27** (7.48-9.07)	**10.5** (9.25-13.2)	1063
	09-10	**3.21** (3.07-3.37)	**3.12** (2.91-3.29)	**5.32** (5.00-5.66)	**8.65** (7.23-10.1)	**12.0** (10.1-14.4)	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 1.7, 1.7, 1.7, and 1.7 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Dimethylarsinic acid (2011 - 2012)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**3.47** (3.18-3.78)	**3.37** (3.06-3.66)	**5.81** (5.14-6.59)	**9.55** (8.43-11.2)	**14.0** (11.4-16.5)	2517
Age group							
6-11 years	11-12	**3.43** (3.06-3.85)	**3.53** (2.81-4.05)	**5.81** (5.21-6.38)	**8.60** (7.55-9.73)	**11.4** (9.35-13.7)	401
12-19 years	11-12	**3.27** (2.71-3.94)	**3.33** (2.49-4.20)	**5.02** (4.33-6.05)	**8.53** (6.29-11.1)	**11.6** (8.74-17.9)	392
20 years and older	11-12	**3.51** (3.22-3.82)	**3.37** (3.05-3.67)	**5.91** (5.20-6.83)	**9.94** (8.57-11.5)	**14.1** (12.2-16.4)	1724
Gender							
Males	11-12	**3.79** (3.40-4.23)	**3.71** (3.33-4.29)	**6.27** (5.36-7.61)	**10.3** (8.75-12.5)	**15.3** (12.5-16.7)	1264
Females	11-12	**3.19** (2.92-3.48)	**3.01** (2.73-3.30)	**5.30** (4.61-5.96)	**8.96** (7.72-10.5)	**12.2** (9.56-17.8)	1253
Race/ethnicity							
Mexican Americans	11-12	**3.67** (3.33-4.04)	**3.58** (3.27-4.18)	**5.82** (5.24-6.47)	**9.05** (7.91-10.0)	**12.1** (9.61-17.4)	317
Non-Hispanic blacks	11-12	**4.05** (3.46-4.74)	**4.05** (3.35-4.65)	**6.78** (5.46-8.21)	**12.0** (10.0-14.2)	**17.4** (14.2-19.8)	672
Non-Hispanic whites	11-12	**3.06** (2.82-3.33)	**2.97** (2.72-3.29)	**4.95** (4.39-5.77)	**7.98** (6.92-9.02)	**10.5** (8.71-13.0)	825
All Hispanics	11-12	**4.02** (3.45-4.69)	**3.96** (3.33-4.68)	**6.73** (5.49-8.39)	**11.1** (8.53-16.6)	**16.8** (12.1-19.7)	574
Asians	11-12	**7.38** (6.50-8.37)	**7.52** (6.45-8.74)	**14.4** (11.7-17.2)	**24.7** (20.3-31.3)	**38.6** (28.5-40.5)	356

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.8.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Dimethylarsinic acid (creatinine corrected) (2003 – 2010)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**3.69** (3.24-4.19)	**3.37** (2.94-3.91)	**5.71** (4.69-6.74)	**9.09** (7.61-11.5)	**13.0** (10.7-16.0)	2568
	05-06	**3.88** (3.57-4.22)	**3.66** (3.39-3.93)	**5.71** (5.10-6.43)	**9.57** (7.95-10.9)	**12.3** (10.6-15.0)	2588
	07-08	**3.83** (3.60-4.07)	**3.62** (3.37-3.93)	**5.80** (5.33-6.32)	**9.01** (8.00-9.97)	**11.6** (9.97-14.4)	2576
	09-10	**3.90** (3.64-4.18)	**3.53** (3.30-3.80)	**6.03** (5.36-6.62)	**10.2** (9.15-11.8)	**14.9** (12.3-19.2)	2870
Age group							
6-11 years	03-04	**4.34** (3.57-5.28)	**4.03** (3.20-4.80)	**6.32** (4.65-8.33)	**10.3** (7.00-13.9)	**13.9** (7.86-21.8)	292
	05-06	**4.89** (4.22-5.65)	**4.31** (3.64-5.69)	**6.85** (5.71-7.69)	**10.0** (7.54-14.7)	**14.7** (10.0-18.8)	354
	07-08	**5.07** (4.56-5.64)	**4.54** (4.08-4.82)	**6.90** (6.14-7.76)	**12.0** (8.39-17.1)	**20.9** (12.0-40.8)	390
	09-10	**4.77** (4.34-5.23)	**4.48** (4.12-4.85)	**6.41** (5.66-6.82)	**10.0** (7.63-15.3)	**16.5** (9.33-27.0)	379
12-19 years	03-04	**2.74** (2.39-3.14)	**2.55** (2.27-2.94)	**3.77** (3.17-4.44)	**5.88** (4.65-6.67)	**7.18** (6.16-11.7)	728
	05-06	**3.05** (2.78-3.34)	**2.92** (2.55-3.29)	**4.25** (3.87-4.84)	**6.68** (5.49-8.06)	**9.08** (7.11-10.6)	703
	07-08	**2.80** (2.54-3.09)	**2.69** (2.37-2.93)	**3.91** (3.46-4.56)	**6.27** (4.72-8.21)	**8.21** (5.77-10.1)	366
	09-10	**2.89** (2.61-3.20)	**2.60** (2.36-2.86)	**4.08** (3.43-4.80)	**6.67** (5.71-8.57)	**10.0** (7.61-12.6)	456
20 years and older	03-04	**3.79** (3.34-4.31)	**3.48** (3.00-4.00)	**5.95** (4.86-7.05)	**9.45** (8.00-12.0)	**13.5** (11.1-18.6)	1548
	05-06	**3.93** (3.62-4.27)	**3.71** (3.42-4.02)	**5.82** (5.22-6.47)	**9.74** (8.00-11.2)	**12.6** (10.9-15.8)	1531
	07-08	**3.89** (3.64-4.16)	**3.69** (3.44-4.02)	**5.96** (5.47-6.58)	**9.10** (8.00-10.0)	**11.6** (9.74-14.5)	1820
	09-10	**4.00** (3.70-4.32)	**3.61** (3.33-3.90)	**6.25** (5.57-6.88)	**10.8** (9.23-12.9)	**16.1** (12.6-22.2)	2035
Gender							
Males	03-04	**3.48** (2.95-4.10)	**3.16** (2.70-3.82)	**5.46** (4.17-6.90)	**8.59** (6.92-12.0)	**12.3** (8.84-18.9)	1284
	05-06	**3.43** (3.13-3.75)	**3.24** (2.91-3.63)	**5.11** (4.25-6.08)	**7.90** (6.65-9.77)	**11.0** (9.29-13.0)	1276
	07-08	**3.63** (3.41-3.85)	**3.44** (3.22-3.68)	**5.33** (5.00-5.82)	**8.31** (7.21-10.1)	**12.1** (9.73-14.9)	1289
	09-10	**3.54** (3.29-3.80)	**3.20** (3.04-3.38)	**5.31** (4.80-5.99)	**9.24** (7.80-10.8)	**13.3** (10.3-16.5)	1402
Females	03-04	**3.89** (3.49-4.34)	**3.57** (3.13-4.06)	**5.78** (4.95-6.67)	**9.32** (8.00-11.5)	**13.7** (10.6-18.6)	1284
	05-06	**4.37** (4.03-4.75)	**4.03** (3.72-4.51)	**6.26** (5.71-6.84)	**10.0** (8.50-12.6)	**14.4** (11.2-19.3)	1312
	07-08	**4.02** (3.75-4.32)	**3.80** (3.46-4.26)	**6.15** (5.58-7.06)	**9.23** (8.11-10.1)	**10.9** (9.52-14.9)	1287
	09-10	**4.28** (3.96-4.63)	**4.00** (3.62-4.32)	**6.55** (5.98-7.14)	**11.0** (9.64-13.2)	**17.2** (13.2-24.4)	1468
Race/ethnicity							
Mexican Americans	03-04	**4.38** (3.80-5.05)	**4.11** (3.29-4.90)	**6.25** (4.84-8.15)	**10.3** (8.00-11.8)	**12.9** (11.1-15.2)	621
	05-06	**4.16** (3.83-4.52)	**4.00** (3.65-4.36)	**5.94** (5.40-6.49)	**8.69** (7.23-9.65)	**10.2** (9.52-13.2)	651
	07-08	**4.34** (3.87-4.88)	**4.19** (3.66-4.83)	**6.23** (5.31-7.44)	**9.14** (8.00-11.0)	**12.1** (10.1-15.1)	513
	09-10	**4.06** (3.63-4.54)	**3.95** (3.33-4.44)	**6.32** (5.36-7.10)	**9.23** (8.10-10.6)	**11.7** (10.2-14.8)	618
Non-Hispanic blacks	03-04	**3.08** (2.69-3.52)	**2.86** (2.60-3.24)	**4.34** (3.82-5.05)	**7.81** (5.82-9.45)	**10.4** (7.61-16.9)	725
	05-06	**3.08** (2.70-3.52)	**2.91** (2.52-3.32)	**4.21** (3.75-4.91)	**7.33** (5.40-10.7)	**11.6** (7.66-17.9)	695
	07-08	**3.08** (2.87-3.31)	**2.77** (2.56-3.13)	**4.74** (4.31-5.22)	**7.29** (6.58-8.26)	**9.67** (8.26-11.0)	586
	09-10	**3.26** (2.90-3.66)	**2.86** (2.47-3.34)	**5.10** (4.43-6.06)	**10.0** (7.39-11.7)	**13.1** (11.1-15.2)	545
Non-Hispanic whites	03-04	**3.44** (2.97-3.98)	**3.17** (2.80-3.73)	**5.16** (4.03-6.49)	**8.00** (6.32-10.9)	**11.1** (8.00-15.4)	1078
	05-06	**3.82** (3.47-4.21)	**3.64** (3.30-3.93)	**5.71** (4.90-6.51)	**9.23** (7.26-10.6)	**11.6** (9.93-13.9)	1050
	07-08	**3.62** (3.38-3.87)	**3.48** (3.20-3.76)	**5.38** (4.95-5.80)	**8.00** (7.28-8.86)	**10.0** (8.96-11.1)	1063
	09-10	**3.58** (3.36-3.81)	**3.31** (3.09-3.49)	**5.30** (4.87-5.75)	**8.12** (7.06-9.21)	**11.5** (9.43-14.3)	1226

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Dimethylarsinic acid (creatinine corrected) (2011 - 2012)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**3.92** (3.69-4.16)	**3.65** (3.47-3.91)	**5.92** (5.40-6.49)	**9.86** (8.68-11.3)	**13.1** (11.5-15.2)	2516
Age group							
6-11 years	11-12	**4.86** (4.54-5.21)	**4.44** (4.10-4.70)	**6.82** (6.15-7.69)	**9.77** (8.65-11.5)	**13.8** (10.3-15.0)	401
12-19 years	11-12	**3.13** (2.68-3.64)	**3.02** (2.48-3.34)	**4.51** (3.49-5.62)	**7.03** (5.08-10.8)	**10.8** (6.13-18.1)	392
20 years and older	11-12	**3.96** (3.75-4.19)	**3.73** (3.52-3.94)	**6.05** (5.45-6.68)	**10.1** (8.97-11.3)	**13.1** (11.5-15.5)	1723
Gender							
Males	11-12	**3.55** (3.27-3.86)	**3.34** (3.11-3.69)	**5.32** (4.75-6.06)	**8.47** (7.35-9.73)	**11.0** (9.45-14.1)	1263
Females	11-12	**4.30** (4.06-4.56)	**4.10** (3.85-4.35)	**6.68** (5.93-7.36)	**10.8** (9.77-12.4)	**14.9** (12.4-17.0)	1253
Race/ethnicity							
Mexican Americans	11-12	**4.12** (3.83-4.44)	**4.10** (3.43-4.59)	**5.77** (5.29-6.37)	**8.06** (7.49-9.54)	**10.5** (8.70-14.8)	317
Non-Hispanic blacks	11-12	**3.16** (2.66-3.74)	**3.05** (2.41-3.67)	**4.98** (4.01-6.08)	**8.27** (6.68-9.70)	**11.3** (8.87-13.7)	672
Non-Hispanic whites	11-12	**3.68** (3.44-3.93)	**3.47** (3.31-3.63)	**5.32** (5.04-5.93)	**9.07** (7.47-10.3)	**11.5** (9.87-13.1)	824
All Hispanics	11-12	**4.50** (4.14-4.89)	**4.38** (4.20-4.82)	**6.62** (5.91-7.47)	**9.46** (8.09-10.6)	**13.0** (9.66-16.6)	574
Asians	11-12	**9.89** (8.57-11.4)	**9.72** (8.10-11.0)	**15.6** (12.4-20.5)	**28.6** (20.1-41.1)	**45.1** (34.3-57.2)	356

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Monomethylarsonic acid (2003 – 2010)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	**1.20** (1.00-1.30)	**1.90** (1.60-2.10)	**2.40** (2.00-2.80)	2567
	05-06	*	< LOD	**1.19** (1.05-1.34)	**1.72** (1.51-1.94)	**2.12** (1.79-2.70)	2588
	07-08	*	< LOD	**1.11** (1.00-1.20)	**1.61** (1.51-1.69)	**2.09** (1.91-2.26)	2576
	09-10	*	< LOD	**1.02** (.920-1.10)	**1.64** (1.41-1.83)	**2.01** (1.82-2.28)	2871
Age group							
6-11 years	03-04	*	< LOD	**1.00** (<LOD-1.40)	**1.80** (1.30-2.60)	**2.30** (1.70-2.90)	292
	05-06	*	< LOD	**1.03** (<LOD-1.37)	**1.54** (1.37-2.12)	**2.12** (1.51-2.73)	354
	07-08	*	< LOD	**1.05** (<LOD-1.28)	**1.60** (1.32-1.83)	**2.04** (1.64-2.86)	390
	09-10	*	< LOD	< LOD	**1.38** (1.00-1.84)	**1.81** (1.26-2.13)	380
12-19 years	03-04	*	< LOD	**1.50** (1.10-1.80)	**2.20** (1.70-3.00)	**2.90** (2.20-3.60)	728
	05-06	*	< LOD	**1.31** (1.09-1.46)	**1.99** (1.62-2.23)	**2.41** (2.04-2.89)	703
	07-08	*	< LOD	**1.26** (1.11-1.35)	**1.83** (1.54-2.22)	**2.31** (1.87-2.90)	366
	09-10	*	< LOD	**1.10** (.910-1.25)	**1.62** (1.33-1.92)	**2.03** (1.74-2.30)	456
20 years and older	03-04	*	< LOD	**1.20** (1.00-1.30)	**1.80** (1.50-2.10)	**2.30** (2.00-2.60)	1547
	05-06	*	< LOD	**1.20** (1.05-1.33)	**1.70** (1.48-1.90)	**2.06** (1.74-2.75)	1531
	07-08	*	< LOD	**1.08** (.970-1.17)	**1.58** (1.44-1.71)	**1.98** (1.82-2.21)	1820
	09-10	*	< LOD	**1.02** (.930-1.11)	**1.65** (1.42-1.86)	**2.03** (1.81-2.35)	2035
Gender							
Males	03-04	*	< LOD	**1.30** (1.10-1.60)	**2.00** (1.80-2.40)	**2.60** (2.10-3.00)	1283
	05-06	*	< LOD	**1.31** (1.12-1.49)	**1.79** (1.57-2.09)	**2.23** (1.85-2.86)	1276
	07-08	*	< LOD	**1.24** (1.13-1.35)	**1.78** (1.63-1.94)	**2.33** (1.97-2.71)	1289
	09-10	*	< LOD	**1.07** (.970-1.23)	**1.77** (1.47-2.01)	**2.19** (1.83-2.68)	1403
Females	03-04	*	< LOD	**1.00** (<LOD-1.20)	**1.60** (1.30-1.90)	**2.10** (1.70-2.60)	1284
	05-06	*	< LOD	**1.08** (.920-1.24)	**1.57** (1.36-1.90)	**2.04** (1.67-2.50)	1312
	07-08	*	< LOD	**.970** (<LOD-1.06)	**1.42** (1.30-1.57)	**1.81** (1.68-1.90)	1287
	09-10	*	< LOD	**.950** (<LOD-1.06)	**1.52** (1.27-1.74)	**1.89** (1.66-2.12)	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	**1.50** (1.20-1.90)	**2.20** (1.70-2.80)	**2.80** (2.00-4.40)	621
	05-06	*	< LOD	**1.19** (1.10-1.32)	**1.73** (1.51-1.97)	**2.04** (1.67-2.51)	651
	07-08	*	< LOD	**1.22** (1.02-1.35)	**1.69** (1.43-2.12)	**2.32** (1.75-2.85)	513
	09-10	*	< LOD	**1.02** (<LOD-1.37)	**1.65** (1.38-1.90)	**2.02** (1.65-2.33)	618
Non-Hispanic blacks	03-04	*	< LOD	**1.10** (<LOD-1.30)	**1.80** (1.40-2.00)	**2.20** (1.70-2.70)	725
	05-06	*	< LOD	**1.02** (.950-1.07)	**1.35** (1.29-1.44)	**1.70** (1.50-1.88)	695
	07-08	*	< LOD	**1.21** (1.09-1.33)	**1.79** (1.61-2.05)	**2.32** (2.15-2.63)	586
	09-10	*	< LOD	**1.02** (<LOD-1.18)	**1.51** (1.36-1.84)	**1.88** (1.73-2.24)	546
Non-Hispanic whites	03-04	*	< LOD	**1.10** (.900-1.30)	**1.80** (1.40-2.00)	**2.10** (1.80-2.50)	1077
	05-06	*	< LOD	**1.22** (1.02-1.39)	**1.75** (1.42-2.12)	**2.14** (1.72-2.93)	1050
	07-08	*	< LOD	**1.04** (.930-1.15)	**1.50** (1.37-1.63)	**1.91** (1.69-2.09)	1063
	09-10	*	< LOD	**.940** (<LOD-1.04)	**1.45** (1.24-1.76)	**1.90** (1.65-2.12)	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.9, 0.9, 0.9, and 0.9 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Monomethylarsonic acid (2011 - 2012)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**1.36** (1.17-1.55)	**1.83** (1.57-2.07)	2517
Age group							
6-11 years	11-12	*	**< LOD**	**< LOD**	**1.21** (.970-1.40)	**1.42** (1.24-1.54)	401
12-19 years	11-12	*	**< LOD**	**.900** (<LOD-1.09)	**1.28** (1.09-1.57)	**1.59** (1.26-3.30)	392
20 years and older	11-12	*	**< LOD**	**< LOD**	**1.41** (1.15-1.67)	**1.88** (1.58-2.08)	1724
Gender							
Males	11-12	*	**< LOD**	**.950** (<LOD-1.14)	**1.50** (1.26-1.85)	**2.04** (1.79-2.40)	1264
Females	11-12	*	**< LOD**	**< LOD**	**1.15** (1.02-1.40)	**1.57** (1.41-1.79)	1253
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**< LOD**	**1.25** (1.04-1.65)	**1.85** (1.25-3.26)	317
Non-Hispanic blacks	11-12	*	**< LOD**	**< LOD**	**1.26** (1.01-1.55)	**1.65** (1.34-2.02)	672
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**1.24** (1.03-1.49)	**1.71** (1.34-2.04)	825
All Hispanics	11-12	*	**< LOD**	**.960** (<LOD-1.25)	**1.60** (1.32-1.99)	**2.38** (1.65-3.29)	574
Asians	11-12	*	**< LOD**	**1.32** (1.19-1.54)	**2.09** (1.71-2.56)	**2.76** (2.24-3.64)	356

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.89.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Monomethylarsonic acid (creatinine corrected) (2003 – 2010)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	**1.33** (1.18-1.54)	**2.22** (1.82-2.57)	**2.86** (2.40-3.53)	2567
	05-06	*	< LOD	**1.28** (1.14-1.52)	**2.37** (1.94-2.78)	**3.13** (2.67-3.76)	2588
	07-08	*	< LOD	**1.31** (1.23-1.42)	**2.24** (2.00-2.56)	**3.19** (2.78-3.58)	2576
	09-10	*	< LOD	**1.36** (1.25-1.45)	**2.16** (2.00-2.29)	**2.91** (2.67-3.15)	2870
Age group							
6-11 years	03-04	*	< LOD	**1.63** (<LOD-1.81)	**2.31** (1.88-2.50)	**2.52** (2.31-3.07)	292
	05-06	*	< LOD	**1.44** (<LOD-1.83)	**2.37** (1.65-3.20)	**3.13** (2.29-4.92)	354
	07-08	*	< LOD	**1.69** (<LOD-2.06)	**2.46** (2.09-2.91)	**3.20** (2.56-4.32)	390
	09-10	*	< LOD	< LOD	**2.37** (2.07-2.78)	**3.16** (2.55-3.76)	379
12-19 years	03-04	*	< LOD	**1.10** (.853-1.23)	**1.53** (1.30-1.85)	**2.07** (1.71-2.22)	728
	05-06	*	< LOD	**1.05** (.930-1.14)	**1.56** (1.49-1.73)	**1.97** (1.78-2.13)	703
	07-08	*	< LOD	**.970** (.880-1.07)	**1.45** (1.19-1.73)	**1.97** (1.49-2.34)	366
	09-10	*	< LOD	**1.21** (1.02-1.45)	**1.98** (1.60-2.56)	**2.56** (1.94-4.57)	456
20 years and older	03-04	*	< LOD	**1.36** (1.18-1.58)	**2.28** (1.82-2.79)	**3.00** (2.43-3.53)	1547
	05-06	*	< LOD	**1.31** (1.13-1.58)	**2.46** (2.00-2.91)	**3.20** (2.78-3.81)	1531
	07-08	*	< LOD	**1.32** (1.23-1.45)	**2.35** (2.02-2.67)	**3.38** (2.78-3.83)	1820
	09-10	*	< LOD	**1.36** (1.25-1.45)	**2.18** (2.00-2.29)	**2.91** (2.78-3.20)	2035
Gender							
Males	03-04	*	< LOD	**1.20** (1.05-1.36)	**1.88** (1.53-2.34)	**2.50** (2.07-3.45)	1283
	05-06	*	< LOD	**1.11** (.950-1.28)	**1.78** (1.47-2.29)	**2.46** (1.88-3.32)	1276
	07-08	*	< LOD	**1.18** (1.07-1.26)	**2.06** (1.85-2.34)	**2.71** (2.46-3.37)	1289
	09-10	*	< LOD	**1.16** (1.07-1.25)	**1.79** (1.64-1.99)	**2.29** (2.08-2.78)	1402
Females	03-04	*	< LOD	**1.50** (<LOD-1.77)	**2.40** (1.96-2.86)	**3.00** (2.61-3.53)	1284
	05-06	*	< LOD	**1.58** (1.36-1.76)	**2.78** (2.29-3.20)	**3.56** (3.05-4.35)	1312
	07-08	*	< LOD	**1.45** (<LOD-1.60)	**2.41** (1.94-2.91)	**3.56** (2.78-4.27)	1287
	09-10	*	< LOD	**1.56** (<LOD-1.73)	**2.46** (2.29-2.62)	**3.37** (2.91-3.56)	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	**1.46** (1.11-1.93)	**2.30** (1.84-3.00)	**3.16** (2.40-3.85)	621
	05-06	*	< LOD	**1.19** (1.08-1.35)	**1.92** (1.60-2.13)	**2.53** (2.06-2.91)	651
	07-08	*	< LOD	**1.28** (1.10-1.60)	**2.27** (1.64-2.71)	**3.05** (2.35-3.76)	513
	09-10	*	< LOD	**1.31** (<LOD-1.49)	**2.00** (1.73-2.56)	**3.05** (2.29-3.56)	618
Non-Hispanic blacks	03-04	*	< LOD	**.816** (<LOD-.985)	**1.37** (1.14-1.61)	**1.88** (1.46-2.17)	725
	05-06	*	< LOD	**.790** (.720-.880)	**1.11** (.980-1.34)	**1.57** (1.23-1.98)	695
	07-08	*	< LOD	**.920** (.840-1.06)	**1.45** (1.33-1.73)	**2.09** (1.73-2.56)	586
	09-10	*	< LOD	**.970** (<LOD-1.08)	**1.73** (1.39-1.94)	**2.29** (1.83-2.91)	545
Non-Hispanic whites	03-04	*	< LOD	**1.33** (1.15-1.62)	**2.28** (1.73-2.86)	**2.86** (2.35-3.75)	1077
	05-06	*	< LOD	**1.35** (1.16-1.64)	**2.50** (2.00-3.05)	**3.20** (2.78-3.81)	1050
	07-08	*	< LOD	**1.35** (1.23-1.52)	**2.37** (2.04-2.78)	**3.37** (2.78-4.00)	1063
	09-10	*	< LOD	**1.36** (<LOD-1.52)	**2.21** (1.99-2.37)	**2.91** (2.67-3.20)	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Monomethylarsonic acid (creatinine corrected) (2011 - 2012)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**2.21** (2.03-2.42)	**2.86** (2.63-3.32)	2516
Age group							
6-11 years	11-12	*	**< LOD**	**< LOD**	**2.55** (2.17-3.15)	**3.32** (2.52-4.50)	401
12-19 years	11-12	*	**< LOD**	**1.07** (<LOD-1.24)	**1.75** (1.30-2.42)	**2.52** (1.62-7.00)	392
20 years and older	11-12	*	**< LOD**	**< LOD**	**2.25** (2.00-2.42)	**2.74** (2.52-3.32)	1723
Gender							
Males	11-12	*	**< LOD**	**1.13** (<LOD-1.24)	**1.72** (1.58-1.85)	**2.31** (1.92-2.67)	1263
Females	11-12	*	**< LOD**	**< LOD**	**2.52** (2.27-2.74)	**3.32** (2.74-3.94)	1253
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**< LOD**	**1.95** (1.54-2.25)	**2.63** (1.85-3.32)	317
Non-Hispanic blacks	11-12	*	**< LOD**	**< LOD**	**1.38** (1.21-1.62)	**1.97** (1.75-2.33)	672
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**2.33** (2.03-2.52)	**2.86** (2.52-3.50)	824
All Hispanics	11-12	*	**< LOD**	**1.34** (<LOD-1.48)	**2.02** (1.62-2.52)	**2.63** (1.97-3.50)	574
Asians	11-12	*	**< LOD**	**2.06** (1.63-2.33)	**3.07** (2.69-3.68)	**4.50** (3.43-5.09)	356

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Trimethylarsine oxide (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2871
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1403
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	546
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 1.0, 1.0, 1.0, and 1.0 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Trimethylarsine oxide (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2517
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	.300 (<LOD-.960)	401
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	392
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1724
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1264
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1253
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	317
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	672
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	825
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	574
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	356

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.25.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Trimethylarsine oxide (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2870
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1402
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	545
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Trimethylarsine oxide (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2516
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	**1.06** (<LOD-1.39)	401
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	392
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1723
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1263
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1253
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	317
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	672
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	824
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	574
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	356

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Barium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.50** (1.35-1.66)	**1.60** (1.50-1.90)	**3.10** (2.70-3.40)	**5.40** (4.60-6.10)	**6.90** (6.20-8.40)	2180
	01-02	**1.52** (1.41-1.65)	**1.63** (1.50-1.76)	**3.12** (2.77-3.51)	**5.24** (4.73-5.84)	**7.48** (6.54-8.12)	2690
	03-04	**1.49** (1.36-1.64)	**1.51** (1.35-1.72)	**2.91** (2.64-3.28)	**5.36** (4.86-5.71)	**7.54** (6.93-8.63)	2558
	05-06	**1.52** (1.39-1.66)	**1.58** (1.44-1.70)	**2.99** (2.63-3.41)	**5.34** (4.82-5.83)	**7.10** (6.46-8.18)	2576
	07-08	**1.56** (1.45-1.69)	**1.64** (1.49-1.80)	**3.01** (2.72-3.34)	**4.93** (4.39-5.69)	**7.04** (6.07-8.20)	2627
	09-10	**1.47** (1.34-1.60)	**1.48** (1.35-1.62)	**2.81** (2.52-3.06)	**4.66** (4.34-5.35)	**6.78** (5.86-7.76)	2848
Age group							
6-11 years	99-00	**2.15** (1.70-2.72)	**2.20** (1.90-2.50)	**4.00** (2.60-6.10)	**6.40** (5.20-8.30)	**8.30** (5.00-76.2)	297
	01-02	**1.80** (1.44-2.26)	**2.09** (1.74-2.49)	**3.63** (2.86-4.39)	**5.37** (4.26-7.38)	**6.88** (5.37-8.49)	368
	03-04	**2.21** (1.81-2.71)	**2.50** (1.81-2.75)	**4.76** (3.80-5.65)	**8.63** (5.59-11.8)	**11.8** (6.87-14.8)	290
	05-06	**1.73** (1.53-1.97)	**1.87** (1.61-2.03)	**3.55** (2.41-4.30)	**6.21** (4.30-7.32)	**7.72** (6.26-8.92)	355
	07-08	**1.75** (1.50-2.04)	**1.86** (1.58-2.23)	**3.41** (2.85-3.79)	**5.57** (4.49-6.59)	**7.32** (5.71-9.18)	394
	09-10	**1.49** (1.28-1.74)	**1.50** (1.22-1.68)	**2.72** (2.19-3.13)	**4.63** (4.02-5.37)	**6.59** (5.24-7.72)	378
12-19 years	99-00	**1.97** (1.78-2.19)	**2.00** (1.70-2.30)	**3.50** (3.10-4.00)	**5.90** (4.80-7.00)	**9.70** (5.90-13.1)	621
	01-02	**2.03** (1.76-2.34)	**2.27** (1.96-2.53)	**4.11** (3.48-4.72)	**6.73** (5.55-7.87)	**9.02** (7.25-11.4)	762
	03-04	**2.16** (1.93-2.41)	**2.35** (2.06-2.63)	**4.11** (3.48-4.71)	**7.18** (6.00-8.29)	**9.63** (8.15-11.4)	725
	05-06	**2.16** (1.92-2.42)	**2.33** (1.99-2.56)	**3.80** (3.60-4.21)	**6.35** (5.48-7.49)	**8.24** (6.06-10.5)	701
	07-08	**2.18** (1.99-2.39)	**2.31** (2.07-2.59)	**3.62** (3.34-4.10)	**6.19** (4.75-7.51)	**8.20** (6.22-11.1)	376
	09-10	**1.79** (1.52-2.09)	**1.90** (1.46-2.45)	**3.25** (2.82-4.14)	**5.43** (4.45-6.07)	**6.87** (5.73-8.16)	451
20 years and older	99-00	**1.36** (1.24-1.51)	**1.50** (1.30-1.70)	**2.80** (2.60-3.20)	**5.10** (4.30-5.50)	**6.40** (5.70-8.40)	1262
	01-02	**1.43** (1.32-1.54)	**1.50** (1.39-1.65)	**2.85** (2.55-3.27)	**4.86** (4.53-5.47)	**7.14** (6.08-8.12)	1560
	03-04	**1.34** (1.20-1.50)	**1.39** (1.19-1.56)	**2.54** (2.21-2.91)	**4.61** (3.99-5.30)	**6.61** (5.57-7.43)	1543
	05-06	**1.42** (1.28-1.57)	**1.43** (1.28-1.63)	**2.75** (2.47-3.11)	**5.12** (4.45-5.81)	**6.83** (6.14-7.90)	1520
	07-08	**1.46** (1.35-1.58)	**1.51** (1.39-1.67)	**2.79** (2.54-3.15)	**4.61** (4.19-5.42)	**6.80** (5.50-8.37)	1857
	09-10	**1.42** (1.30-1.55)	**1.43** (1.31-1.58)	**2.67** (2.36-3.02)	**4.58** (4.22-5.14)	**6.80** (5.70-8.63)	2019
Gender							
Males	99-00	**1.70** (1.54-1.88)	**1.90** (1.80-2.00)	**3.20** (3.00-3.60)	**5.50** (4.20-6.70)	**7.50** (5.90-9.70)	1083
	01-02	**1.64** (1.47-1.82)	**1.80** (1.65-1.98)	**3.15** (2.76-3.73)	**5.52** (4.82-6.35)	**7.87** (6.49-9.32)	1335
	03-04	**1.62** (1.47-1.78)	**1.69** (1.49-1.85)	**3.09** (2.81-3.54)	**5.65** (5.14-6.16)	**8.56** (6.71-9.67)	1281
	05-06	**1.66** (1.48-1.85)	**1.71** (1.50-1.94)	**3.21** (2.76-3.79)	**5.48** (4.68-6.22)	**7.10** (6.18-8.84)	1271
	07-08	**1.62** (1.48-1.77)	**1.80** (1.57-1.93)	**3.14** (2.79-3.42)	**5.00** (4.31-5.70)	**6.84** (5.83-7.72)	1327
	09-10	**1.53** (1.35-1.74)	**1.57** (1.36-1.82)	**3.01** (2.53-3.36)	**4.83** (4.25-5.77)	**6.81** (5.77-8.76)	1398
Females	99-00	**1.33** (1.15-1.53)	**1.50** (1.20-1.60)	**2.80** (2.30-3.30)	**5.20** (4.20-5.90)	**6.80** (5.60-10.4)	1097
	01-02	**1.43** (1.30-1.56)	**1.44** (1.29-1.63)	**3.11** (2.74-3.43)	**4.93** (4.44-5.88)	**7.15** (6.32-7.86)	1355
	03-04	**1.38** (1.24-1.54)	**1.39** (1.18-1.57)	**2.71** (2.41-3.15)	**4.95** (4.29-5.51)	**6.87** (5.65-8.10)	1277
	05-06	**1.40** (1.27-1.54)	**1.42** (1.30-1.63)	**2.70** (2.39-3.19)	**5.21** (4.65-5.71)	**7.09** (6.24-7.94)	1305
	07-08	**1.51** (1.36-1.68)	**1.54** (1.38-1.70)	**2.84** (2.52-3.37)	**4.87** (4.23-6.13)	**7.18** (5.94-8.83)	1300
	09-10	**1.40** (1.30-1.51)	**1.38** (1.31-1.47)	**2.61** (2.41-2.90)	**4.58** (4.33-4.95)	**6.59** (5.37-7.86)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.12, 0.12, 0.31, 0.12, 0.12, and 0.12 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Barium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.35** (1.25-1.46)	**1.40** (1.20-1.50)	**2.60** (2.30-2.90)	**4.50** (4.10-5.30)	**6.30** (5.50-6.80)	692
	01-02	**1.21** (1.06-1.37)	**1.25** (1.11-1.46)	**2.56** (2.04-2.91)	**4.35** (3.65-5.49)	**6.43** (5.21-8.22)	683
	03-04	**1.40** (1.15-1.70)	**1.45** (1.22-1.73)	**2.62** (1.78-3.38)	**4.07** (2.95-6.37)	**6.01** (4.01-7.88)	618
	05-06	**1.33** (1.24-1.42)	**1.36** (1.22-1.50)	**2.63** (2.35-2.89)	**4.47** (3.80-5.23)	**6.21** (5.23-7.00)	652
	07-08	**1.33** (1.16-1.53)	**1.37** (1.19-1.48)	**2.60** (2.29-2.84)	**4.21** (3.53-4.90)	**5.79** (4.90-8.00)	515
	09-10	**1.24** (1.07-1.45)	**1.18** (1.05-1.40)	**2.25** (1.88-2.71)	**4.15** (3.55-5.40)	**6.35** (5.00-8.75)	613
Non-Hispanic blacks	99-00	**1.34** (1.12-1.62)	**1.40** (1.20-1.60)	**2.50** (2.30-2.90)	**5.10** (3.70-6.60)	**7.40** (5.40-13.9)	540
	01-02	**1.30** (1.14-1.48)	**1.42** (1.22-1.62)	**2.61** (2.31-2.82)	**4.30** (3.70-5.18)	**5.99** (4.87-7.26)	667
	03-04	**1.27** (1.17-1.39)	**1.38** (1.26-1.48)	**2.34** (2.05-2.59)	**3.77** (3.35-4.36)	**5.86** (4.76-7.45)	723
	05-06	**1.25** (1.15-1.37)	**1.31** (1.21-1.41)	**2.40** (2.22-2.61)	**4.24** (3.69-4.83)	**6.19** (5.23-6.96)	692
	07-08	**1.17** (1.07-1.28)	**1.23** (1.12-1.37)	**2.14** (2.01-2.34)	**3.70** (3.27-4.00)	**5.00** (3.93-5.90)	589
	09-10	**1.22** (1.08-1.38)	**1.22** (1.07-1.38)	**2.13** (1.91-2.51)	**3.76** (3.09-4.88)	**5.50** (4.06-7.32)	544
Non-Hispanic whites	99-00	**1.56** (1.36-1.80)	**1.80** (1.60-2.00)	**3.30** (2.80-3.70)	**5.50** (4.50-6.30)	**7.50** (6.20-8.80)	765
	01-02	**1.61** (1.46-1.77)	**1.68** (1.54-1.85)	**3.31** (2.87-3.74)	**5.66** (4.94-6.30)	**7.73** (6.61-8.49)	1132
	03-04	**1.56** (1.37-1.78)	**1.61** (1.28-1.92)	**3.12** (2.75-3.70)	**5.57** (5.04-6.43)	**8.08** (6.87-9.53)	1074
	05-06	**1.59** (1.42-1.78)	**1.66** (1.50-1.86)	**3.08** (2.63-3.79)	**5.50** (4.90-6.08)	**7.10** (6.46-8.24)	1041
	07-08	**1.71** (1.55-1.88)	**1.82** (1.62-1.97)	**3.36** (2.91-3.71)	**5.38** (4.51-6.30)	**7.18** (6.22-9.05)	1095
	09-10	**1.56** (1.42-1.73)	**1.60** (1.40-1.76)	**3.00** (2.64-3.36)	**4.89** (4.48-5.84)	**7.16** (6.12-9.31)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.12, 0.12, 0.31, 0.12, 0.12, and 0.12 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Barium (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.19** (1.11-1.28)	**1.23** (1.14-1.33)	**2.40** (2.24-2.54)	**4.04** (3.76-4.35)	**5.52** (4.92-5.95)	2504
Age group							
6-11 years	11-12	**1.39** (1.24-1.55)	**1.46** (1.21-1.62)	**2.96** (2.33-3.52)	**4.92** (4.52-5.29)	**6.68** (5.25-7.92)	399
12-19 years	11-12	**1.52** (1.25-1.84)	**1.61** (1.24-1.90)	**2.98** (2.40-4.03)	**5.37** (4.27-6.08)	**6.63** (5.53-8.77)	390
20 years and older	11-12	**1.13** (1.06-1.21)	**1.19** (1.09-1.27)	**2.24** (2.09-2.44)	**3.74** (3.39-4.01)	**5.05** (4.37-5.78)	1715
Gender							
Males	11-12	**1.29** (1.20-1.38)	**1.30** (1.24-1.41)	**2.52** (2.25-2.71)	**4.29** (3.74-4.58)	**5.96** (4.49-7.35)	1262
Females	11-12	**1.11** (.989-1.25)	**1.14** (1.00-1.35)	**2.33** (2.06-2.57)	**3.90** (3.34-4.35)	**5.13** (4.44-5.57)	1242
Race/ethnicity							
Mexican Americans	11-12	**1.08** (.961-1.22)	**1.06** (.910-1.23)	**2.10** (1.79-2.57)	**3.95** (3.24-4.86)	**5.58** (4.10-7.22)	317
Non-Hispanic blacks	11-12	**.997** (.891-1.12)	**1.05** (.910-1.20)	**2.08** (1.79-2.29)	**3.63** (3.09-4.08)	**4.68** (4.02-5.19)	669
Non-Hispanic whites	11-12	**1.27** (1.17-1.38)	**1.32** (1.22-1.43)	**2.50** (2.25-2.71)	**4.33** (3.63-4.81)	**5.57** (4.87-6.35)	820
All Hispanics	11-12	**1.08** (.970-1.19)	**1.07** (.940-1.23)	**2.15** (1.86-2.47)	**3.74** (2.99-4.34)	**4.82** (3.96-5.98)	573
Asians	11-12	**1.16** (1.03-1.30)	**1.21** (1.02-1.35)	**2.28** (1.94-2.67)	**3.90** (3.20-4.47)	**5.50** (4.01-6.40)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Barium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.40** (1.26-1.56)	**1.41** (1.28-1.54)	**2.54** (2.20-2.91)	**4.68** (3.85-5.47)	**6.33** (5.47-8.09)	2180
	01-02	**1.44** (1.31-1.58)	**1.49** (1.35-1.63)	**2.76** (2.51-3.03)	**4.58** (4.15-4.96)	**6.24** (5.28-7.27)	2689
	03-04	**1.48** (1.37-1.60)	**1.41** (1.31-1.58)	**2.68** (2.44-2.89)	**4.92** (4.39-5.45)	**7.10** (6.29-7.77)	2558
	05-06	**1.50** (1.40-1.61)	**1.48** (1.37-1.61)	**2.75** (2.50-3.03)	**4.65** (4.09-5.10)	**6.38** (5.62-7.56)	2576
	07-08	**1.63** (1.51-1.75)	**1.60** (1.51-1.72)	**2.92** (2.72-3.16)	**4.85** (4.40-5.57)	**7.20** (5.94-8.59)	2627
	09-10	**1.56** (1.45-1.68)	**1.55** (1.42-1.64)	**2.72** (2.54-2.97)	**4.69** (4.12-5.16)	**6.24** (5.60-7.43)	2848
Age group							
6-11 years	99-00	**2.37** (1.68-3.32)	**2.38** (1.84-2.92)	**4.47** (2.55-6.46)	**10.2** (3.75-22.0)	**11.4** (5.46-22.0)	297
	01-02	**2.20** (1.91-2.52)	**2.41** (2.19-2.83)	**3.91** (3.29-4.51)	**5.01** (4.58-6.00)	**6.71** (5.20-8.47)	368
	03-04	**2.58** (2.22-2.99)	**3.00** (2.35-3.29)	**4.45** (3.57-5.54)	**6.69** (5.59-7.70)	**10.3** (6.53-21.0)	290
	05-06	**2.14** (1.85-2.48)	**2.15** (1.76-2.51)	**3.83** (3.10-4.73)	**6.19** (4.84-7.83)	**10.0** (5.76-11.1)	355
	07-08	**2.28** (2.04-2.54)	**2.41** (2.05-2.59)	**4.43** (3.87-4.70)	**6.58** (5.05-9.46)	**9.89** (7.13-13.3)	394
	09-10	**2.03** (1.78-2.30)	**2.00** (1.77-2.40)	**3.33** (2.81-3.79)	**5.04** (4.17-7.39)	**8.76** (5.93-10.8)	378
12-19 years	99-00	**1.51** (1.34-1.70)	**1.40** (1.26-1.59)	**2.48** (1.97-3.06)	**4.36** (3.23-5.39)	**7.62** (4.24-11.4)	621
	01-02	**1.45** (1.33-1.59)	**1.56** (1.31-1.77)	**2.89** (2.68-3.12)	**4.52** (3.84-5.20)	**5.55** (4.81-6.10)	762
	03-04	**1.54** (1.36-1.75)	**1.59** (1.39-1.87)	**2.60** (2.24-3.48)	**4.97** (4.34-5.58)	**6.47** (5.38-7.77)	725
	05-06	**1.66** (1.50-1.84)	**1.73** (1.52-1.93)	**3.15** (2.76-3.42)	**4.25** (3.88-4.56)	**5.00** (4.46-6.68)	701
	07-08	**1.71** (1.52-1.92)	**1.70** (1.48-1.96)	**3.03** (2.51-3.65)	**4.80** (3.96-5.47)	**6.17** (4.80-8.12)	376
	09-10	**1.67** (1.48-1.88)	**1.66** (1.54-1.84)	**2.69** (2.24-3.18)	**3.98** (3.40-5.29)	**6.42** (4.61-9.33)	451
20 years and older	99-00	**1.30** (1.19-1.42)	**1.33** (1.20-1.46)	**2.32** (2.08-2.62)	**4.29** (3.63-4.96)	**5.65** (5.28-6.33)	1262
	01-02	**1.37** (1.24-1.50)	**1.40** (1.24-1.52)	**2.53** (2.23-2.84)	**4.38** (4.02-5.00)	**6.55** (5.00-7.64)	1559
	03-04	**1.38** (1.26-1.50)	**1.32** (1.22-1.41)	**2.39** (2.13-2.70)	**4.39** (3.77-5.16)	**7.00** (5.45-8.50)	1543
	05-06	**1.42** (1.30-1.54)	**1.39** (1.26-1.55)	**2.59** (2.33-2.82)	**4.53** (3.65-5.40)	**6.34** (5.37-7.67)	1520
	07-08	**1.56** (1.44-1.69)	**1.55** (1.40-1.66)	**2.80** (2.55-3.04)	**4.64** (4.05-5.43)	**7.20** (5.78-8.65)	1857
	09-10	**1.50** (1.40-1.61)	**1.46** (1.38-1.55)	**2.67** (2.42-2.92)	**4.71** (4.07-5.23)	**6.03** (5.53-7.34)	2019
Gender							
Males	99-00	**1.32** (1.22-1.42)	**1.36** (1.23-1.47)	**2.39** (2.11-2.57)	**4.24** (3.48-5.00)	**5.61** (4.39-10.2)	1083
	01-02	**1.30** (1.16-1.45)	**1.34** (1.19-1.50)	**2.46** (2.14-2.83)	**4.51** (3.73-4.96)	**5.42** (4.81-7.51)	1334
	03-04	**1.36** (1.26-1.47)	**1.31** (1.19-1.43)	**2.60** (2.37-2.75)	**4.36** (3.97-4.72)	**6.01** (5.45-6.96)	1281
	05-06	**1.36** (1.23-1.50)	**1.38** (1.25-1.52)	**2.36** (2.19-2.73)	**4.24** (3.65-4.82)	**5.69** (4.75-7.36)	1271
	07-08	**1.45** (1.34-1.55)	**1.50** (1.32-1.60)	**2.59** (2.34-2.79)	**4.30** (3.84-4.72)	**5.56** (5.05-6.30)	1327
	09-10	**1.40** (1.28-1.52)	**1.38** (1.29-1.50)	**2.39** (2.13-2.68)	**4.05** (3.52-4.71)	**5.55** (4.89-6.77)	1398
Females	99-00	**1.49** (1.27-1.74)	**1.48** (1.29-1.68)	**2.65** (2.13-3.46)	**4.91** (3.96-6.38)	**7.36** (5.25-11.3)	1097
	01-02	**1.59** (1.45-1.75)	**1.64** (1.48-1.79)	**2.98** (2.75-3.30)	**4.76** (4.38-5.31)	**6.97** (5.86-7.52)	1355
	03-04	**1.60** (1.45-1.77)	**1.55** (1.35-1.73)	**2.78** (2.34-3.25)	**5.50** (4.43-6.86)	**7.88** (6.28-11.5)	1277
	05-06	**1.65** (1.54-1.76)	**1.63** (1.45-1.83)	**3.09** (2.71-3.38)	**4.87** (4.48-5.65)	**7.48** (6.04-10.0)	1305
	07-08	**1.83** (1.63-2.05)	**1.74** (1.52-2.06)	**3.22** (2.82-3.89)	**5.94** (4.57-7.38)	**8.15** (7.18-9.49)	1300
	09-10	**1.73** (1.60-1.87)	**1.71** (1.62-1.86)	**3.06** (2.72-3.41)	**5.06** (4.59-5.74)	**6.58** (5.88-8.19)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Barium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.21** (1.10-1.33)	**1.18** (1.05-1.38)	**2.39** (2.10-2.59)	**4.00** (3.33-4.80)	**5.31** (4.80-6.51)	692
	01-02	**1.18** (1.03-1.34)	**1.16** (1.00-1.38)	**2.33** (1.90-2.61)	**3.68** (3.29-4.10)	**4.96** (4.24-6.80)	682
	03-04	**1.29** (1.08-1.55)	**1.28** (1.03-1.53)	**2.25** (1.73-2.97)	**3.99** (2.79-5.03)	**4.99** (4.24-6.56)	618
	05-06	**1.25** (1.17-1.33)	**1.21** (1.09-1.33)	**2.27** (1.84-2.61)	**3.66** (3.07-4.35)	**5.11** (4.00-5.95)	652
	07-08	**1.33** (1.16-1.53)	**1.28** (1.14-1.49)	**2.40** (1.87-2.90)	**4.23** (3.45-4.87)	**6.18** (4.75-7.27)	515
	09-10	**1.30** (1.18-1.44)	**1.26** (1.14-1.41)	**2.33** (1.98-2.79)	**3.55** (3.11-4.42)	**5.50** (4.27-6.58)	613
Non-Hispanic blacks	99-00	**.881** (.703-1.11)	**.905** (.710-1.06)	**1.64** (1.36-2.00)	**3.27** (2.26-4.76)	**4.84** (3.57-10.8)	540
	01-02	**.891** (.777-1.02)	**.921** (.754-1.11)	**1.64** (1.44-2.03)	**2.86** (2.48-3.37)	**4.02** (3.52-4.68)	667
	03-04	**.915** (.832-1.01)	**.963** (.880-1.04)	**1.51** (1.39-1.75)	**2.62** (2.29-3.04)	**3.76** (3.22-4.72)	723
	05-06	**.909** (.845-.979)	**.880** (.820-.970)	**1.78** (1.56-1.97)	**2.99** (2.63-3.14)	**3.91** (3.39-4.73)	692
	07-08	**.858** (.807-.913)	**.850** (.790-.920)	**1.53** (1.34-1.61)	**2.51** (2.01-3.03)	**3.43** (2.83-5.05)	589
	09-10	**.965** (.853-1.09)	**.930** (.860-1.05)	**1.63** (1.40-1.85)	**2.92** (2.33-3.34)	**3.71** (3.24-4.69)	544
Non-Hispanic whites	99-00	**1.56** (1.38-1.77)	**1.55** (1.36-1.74)	**2.72** (2.27-3.24)	**5.00** (3.81-6.02)	**6.60** (5.52-10.2)	765
	01-02	**1.62** (1.49-1.76)	**1.66** (1.49-1.82)	**3.04** (2.76-3.32)	**4.96** (4.55-5.41)	**6.74** (5.57-7.64)	1132
	03-04	**1.64** (1.49-1.82)	**1.60** (1.40-1.76)	**2.88** (2.56-3.26)	**5.38** (4.67-6.28)	**7.57** (6.69-9.27)	1074
	05-06	**1.65** (1.52-1.80)	**1.61** (1.46-1.83)	**2.95** (2.70-3.26)	**4.82** (4.32-5.65)	**7.21** (5.69-8.51)	1041
	07-08	**1.91** (1.74-2.10)	**1.85** (1.65-2.09)	**3.22** (2.84-3.76)	**5.42** (4.55-6.91)	**7.81** (6.33-9.45)	1095
	09-10	**1.75** (1.59-1.92)	**1.70** (1.58-1.86)	**2.99** (2.67-3.33)	**5.00** (4.14-5.69)	**6.63** (5.69-8.50)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Barium (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.35** (1.24-1.48)	**1.38** (1.27-1.47)	**2.44** (2.10-2.84)	**4.19** (3.72-4.85)	**6.27** (5.20-6.66)	2502
Age group							
6-11 years	11-12	**1.99** (1.80-2.19)	**2.18** (1.70-2.61)	**3.72** (3.35-4.03)	**5.82** (4.95-6.45)	**6.78** (5.98-8.18)	398
12-19 years	11-12	**1.45** (1.24-1.70)	**1.42** (1.24-1.78)	**2.81** (1.96-3.19)	**4.90** (3.82-5.69)	**6.29** (4.90-6.57)	390
20 years and older	11-12	**1.29** (1.17-1.41)	**1.31** (1.20-1.43)	**2.21** (1.95-2.63)	**3.83** (3.50-4.31)	**5.54** (4.38-6.84)	1714
Gender							
Males	11-12	**1.20** (1.10-1.32)	**1.17** (1.08-1.33)	**2.09** (1.85-2.53)	**3.72** (3.37-4.22)	**5.35** (4.11-6.34)	1261
Females	11-12	**1.51** (1.36-1.68)	**1.51** (1.39-1.67)	**2.73** (2.39-3.12)	**4.83** (3.88-5.63)	**6.52** (5.32-8.33)	1241
Race/ethnicity							
Mexican Americans	11-12	**1.22** (1.09-1.36)	**1.16** (1.02-1.31)	**2.20** (1.82-2.71)	**4.00** (3.08-4.84)	**5.74** (3.94-7.90)	317
Non-Hispanic blacks	11-12	**.775** (.698-.861)	**.744** (.664-.918)	**1.48** (1.32-1.64)	**2.64** (2.24-3.06)	**3.56** (3.21-3.86)	669
Non-Hispanic whites	11-12	**1.54** (1.38-1.70)	**1.53** (1.44-1.64)	**2.71** (2.18-3.18)	**4.71** (3.82-5.54)	**6.45** (5.36-7.63)	818
All Hispanics	11-12	**1.21** (1.09-1.34)	**1.19** (1.09-1.28)	**2.20** (1.81-2.70)	**3.70** (3.10-4.66)	**5.17** (3.73-6.49)	573
Asians	11-12	**1.55** (1.40-1.71)	**1.49** (1.35-1.73)	**2.86** (2.34-3.33)	**5.03** (4.00-5.95)	**7.26** (5.03-9.71)	353

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Beryllium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2690
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	< LOD	< LOD	2576
	07-08	*	< LOD	< LOD	< LOD	< LOD	2627
	09-10	*	< LOD	< LOD	< LOD	< LOD	2848
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	355
	07-08	*	< LOD	< LOD	< LOD	< LOD	394
	09-10	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	**.140** (<LOD-.170)	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	701
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
	09-10	*	< LOD	< LOD	< LOD	< LOD	451
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1560
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1857
	09-10	*	< LOD	< LOD	< LOD	< LOD	2019
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	**.130** (<LOD-.150)	1335
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	< LOD	< LOD	1271
	07-08	*	< LOD	< LOD	< LOD	< LOD	1327
	09-10	*	< LOD	< LOD	< LOD	< LOD	1398
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	< LOD	< LOD	1305
	07-08	*	< LOD	< LOD	< LOD	< LOD	1300
	09-10	*	< LOD	< LOD	< LOD	< LOD	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.13, 0.13, 0.13, 0.072, 0.072, and 0.072 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Beryllium_BiomonitoringSummary.html

Urinary Beryllium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	884
	01-02	*	< LOD	< LOD	< LOD	.130 (<LOD-.160)	683
	03-04	*	< LOD	< LOD	< LOD	< LOD	618
	05-06	*	< LOD	< LOD	< LOD	< LOD	652
	07-08	*	< LOD	< LOD	< LOD	< LOD	515
	09-10	*	< LOD	< LOD	< LOD	< LOD	613
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	568
	01-02	*	< LOD	< LOD	< LOD	< LOD	667
	03-04	*	< LOD	< LOD	< LOD	< LOD	723
	05-06	*	< LOD	< LOD	< LOD	< LOD	692
	07-08	*	< LOD	< LOD	< LOD	< LOD	589
	09-10	*	< LOD	< LOD	< LOD	< LOD	544
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	822
	01-02	*	< LOD	< LOD	< LOD	< LOD	1132
	03-04	*	< LOD	< LOD	< LOD	< LOD	1074
	05-06	*	< LOD	< LOD	< LOD	< LOD	1041
	07-08	*	< LOD	< LOD	< LOD	< LOD	1095
	09-10	*	< LOD	< LOD	< LOD	< LOD	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.13, 0.13, 0.13, 0.072, 0.072, and 0.072 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Beryllium_BiomonitoringSummary.html

Urinary Beryllium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2689
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	< LOD	< LOD	2576
	07-08	*	< LOD	< LOD	< LOD	< LOD	2627
	09-10	*	< LOD	< LOD	< LOD	< LOD	2848
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	355
	07-08	*	< LOD	< LOD	< LOD	< LOD	394
	09-10	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	**.231** (<LOD-.273)	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	701
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
	09-10	*	< LOD	< LOD	< LOD	< LOD	451
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1559
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1857
	09-10	*	< LOD	< LOD	< LOD	< LOD	2019
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	**.281** (<LOD-.333)	1334
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	< LOD	< LOD	1271
	07-08	*	< LOD	< LOD	< LOD	< LOD	1327
	09-10	*	< LOD	< LOD	< LOD	< LOD	1398
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	< LOD	< LOD	1305
	07-08	*	< LOD	< LOD	< LOD	< LOD	1300
	09-10	*	< LOD	< LOD	< LOD	< LOD	1450

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Beryllium_BiomonitoringSummary.html

Urinary Beryllium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	884
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.346** (<LOD-.391)	682
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	618
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	515
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	613
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	568
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	667
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	723
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	692
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	589
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	544
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	822
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1132
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1074
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1095
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1225

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Beryllium_BiomonitoringSummary.html

Blood Cadmium (1999 – 2010)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.412** (.378-.449)	**.400** (.300-.400)	**.600** (.500-.700)	**1.00** (1.00-1.10)	**1.40** (1.30-1.40)	7970
	01-02	*	**.300** (.300-.400)	**.500** (.500-.600)	**1.00** (.900-1.10)	**1.40** (1.20-1.70)	8945
	03-04	**.304** (.289-.320)	**.300** (.300-.300)	**.500** (.500-.600)	**1.10** (1.00-1.20)	**1.60** (1.50-1.60)	8372
	05-06	**.310** (.294-.327)	**.270** (.250-.280)	**.510** (.460-.560)	**1.02** (.910-1.13)	**1.53** (1.34-1.75)	8407
	07-08	**.315** (.300-.331)	**.270** (.260-.280)	**.500** (.460-.560)	**1.00** (.900-1.13)	**1.52** (1.30-1.77)	8266
	09-10	**.302** (.293-.311)	**.260** (.250-.270)	**.480** (.460-.510)	**.960** (.880-1.01)	**1.40** (1.29-1.53)	8793
Age group							
1-5 years	99-00	*	**< LOD**	**.300** (<LOD-.400)	**.400** (.300-.400)	**.400** (.300-.700)	723
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.300-.300)	898
	03-04	*	**< LOD**	**< LOD**	**.200** (.200-.300)	**.200** (.200-.400)	910
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.230** (.210-.250)	968
	07-08	*	**< LOD**	**< LOD**	**.210** (<LOD-.230)	**.240** (.220-.260)	817
	09-10	*	**< LOD**	**< LOD**	**.200** (<LOD-.210)	**.220** (.200-.240)	836
6-11 years	99-00	*	**< LOD**	**.300** (<LOD-.400)	**.400** (.300-.500)	**.500** (.400-.500)	905
	01-02	*	**< LOD**	**< LOD**	**.300** (.300-.300)	**.400** (.400-.400)	1044
	03-04	*	**< LOD**	**.200** (<LOD-.200)	**.300** (.200-.300)	**.300** (.300-.300)	856
	05-06	*	**< LOD**	**< LOD**	**.220** (.200-.240)	**.260** (.230-.280)	934
	07-08	*	**< LOD**	**< LOD**	**.230** (.210-.240)	**.260** (.240-.280)	1011
	09-10	*	**< LOD**	**< LOD**	**.210** (.200-.240)	**.240** (.220-.280)	1009
12-19 years	99-00	**.333** (.304-.366)	**.300** (.300-.400)	**.400** (.400-.500)	**.800** (.600-1.00)	**1.10** (.900-1.20)	2135
	01-02	*	**< LOD**	**.300** (.300-.400)	**.500** (.400-.700)	**.900** (.700-1.20)	2231
	03-04	*	**.200** (<LOD-.200)	**.300** (.300-.300)	**.600** (.500-.700)	**.900** (.800-1.10)	2081
	05-06	*	**< LOD**	**.250** (.240-.270)	**.520** (.410-.680)	**.960** (.820-1.08)	1996
	07-08	*	**< LOD**	**.260** (.240-.270)	**.520** (.400-.670)	**.900** (.730-1.19)	1074
	09-10	*	**< LOD**	**.240** (.220-.260)	**.340** (.310-.450)	**.620** (.460-.850)	1183
20 years and older	99-00	**.468** (.426-.513)	**.400** (.400-.500)	**.700** (.600-.800)	**1.10** (1.00-1.20)	**1.50** (1.40-1.60)	4207
	01-02	**.425** (.400-.452)	**.400** (.400-.400)	**.600** (.600-.700)	**1.10** (1.00-1.30)	**1.60** (1.40-1.90)	4772
	03-04	**.378** (.359-.398)	**.400** (.300-.400)	**.600** (.600-.700)	**1.20** (1.20-1.30)	**1.80** (1.60-1.90)	4525
	05-06	**.373** (.352-.395)	**.330** (.310-.350)	**.610** (.570-.660)	**1.17** (1.06-1.26)	**1.72** (1.53-1.95)	4509
	07-08	**.376** (.354-.399)	**.330** (.310-.350)	**.600** (.550-.670)	**1.16** (1.02-1.30)	**1.70** (1.50-1.96)	5364
	09-10	**.358** (.347-.370)	**.320** (.310-.330)	**.580** (.550-.600)	**1.10** (1.00-1.18)	**1.55** (1.43-1.72)	5765
Gender							
Males	99-00	**.403** (.368-.441)	**.400** (.300-.400)	**.600** (.500-.700)	**1.00** (.900-1.10)	**1.40** (1.30-1.50)	3913
	01-02	*	**.300** (<LOD-.300)	**.500** (.500-.600)	**1.00** (.900-1.10)	**1.50** (1.20-1.80)	4339
	03-04	**.283** (.266-.300)	**.300** (.200-.300)	**.500** (.500-.500)	**1.10** (1.00-1.20)	**1.60** (1.50-1.60)	4131
	05-06	*	**.240** (.220-.260)	**.470** (.420-.530)	**1.02** (.910-1.12)	**1.53** (1.27-1.86)	4092
	07-08	**.299** (.283-.317)	**.250** (.230-.260)	**.470** (.420-.540)	**1.05** (.930-1.19)	**1.60** (1.30-1.90)	4147
	09-10	**.279** (.268-.289)	**.230** (.220-.240)	**.410** (.390-.460)	**.920** (.830-1.00)	**1.45** (1.30-1.58)	4366
Females	99-00	**.421** (.386-.460)	**.400** (.400-.400)	**.600** (.500-.700)	**1.00** (1.00-1.10)	**1.30** (1.20-1.40)	4057
	01-02	**.382** (.362-.403)	**.400** (.300-.400)	**.600** (.500-.600)	**1.00** (.900-1.10)	**1.40** (1.20-1.70)	4606
	03-04	**.326** (.309-.344)	**.300** (.300-.300)	**.600** (.500-.600)	**1.10** (1.00-1.20)	**1.60** (1.50-1.70)	4241
	05-06	**.329** (.311-.349)	**.290** (.280-.310)	**.530** (.480-.580)	**1.02** (.870-1.18)	**1.54** (1.33-1.79)	4315
	07-08	**.331** (.316-.348)	**.290** (.280-.310)	**.530** (.480-.570)	**.980** (.860-1.10)	**1.43** (1.29-1.63)	4119
	09-10	**.326** (.314-.339)	**.290** (.280-.310)	**.520** (.490-.550)	**.960** (.880-1.10)	**1.40** (1.20-1.53)	4427

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.3, 0.3, 0.14, 0.2, 0.2, and 0.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Blood Cadmium (1999 – 2010)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.395** (.367-.424)	**.400** (.400-.400)	**.500** (.500-.600)	**.800** (.700-1.00)	**1.20** (.900-1.30)	2742
	01-02	*	**< LOD**	**.400** (.400-.500)	**.600** (.500-.800)	**1.00** (.700-1.30)	2268
	03-04	**.235** (.216-.255)	**.200** (.200-.300)	**.400** (.300-.400)	**.600** (.500-.800)	**1.00** (.800-1.50)	2085
	05-06	*	**.220** (.200-.240)	**.350** (.300-.400)	**.580** (.510-.680)	**.820** (.710-1.00)	2236
	07-08	*	**.220** (.210-.230)	**.350** (.320-.370)	**.570** (.510-.660)	**.840** (.690-1.02)	1712
	09-10	*	**.220** (.200-.230)	**.330** (.300-.370)	**.580** (.500-.670)	**.800** (.690-.960)	1966
Non-Hispanic blacks	99-00	**.393** (.361-.427)	**.400** (.300-.400)	**.600** (.500-.600)	**1.00** (.900-1.20)	**1.40** (1.20-1.60)	1842
	01-02	*	**.300** (<LOD-.300)	**.500** (.500-.600)	**1.00** (.900-1.10)	**1.40** (1.20-1.70)	2219
	03-04	**.304** (.275-.337)	**.300** (.300-.300)	**.500** (.400-.600)	**1.00** (.900-1.20)	**1.50** (1.30-1.70)	2292
	05-06	**.307** (.290-.326)	**.260** (.250-.280)	**.490** (.440-.570)	**1.03** (.880-1.21)	**1.50** (1.23-1.79)	2193
	07-08	**.333** (.316-.352)	**.280** (.270-.300)	**.550** (.480-.620)	**1.20** (1.01-1.36)	**1.81** (1.45-2.13)	1746
	09-10	**.328** (.310-.347)	**.280** (.260-.290)	**.550** (.490-.640)	**1.10** (1.00-1.20)	**1.52** (1.38-1.73)	1593
Non-Hispanic whites	99-00	**.420** (.376-.470)	**.400** (.300-.500)	**.600** (.500-.700)	**1.10** (1.00-1.20)	**1.40** (1.30-1.50)	2716
	01-02	*	**.300** (.300-.400)	**.600** (.500-.600)	**1.00** (.900-1.20)	**1.50** (1.30-1.80)	3806
	03-04	**.313** (.296-.331)	**.300** (.300-.300)	**.600** (.500-.600)	**1.10** (1.00-1.20)	**1.60** (1.50-1.70)	3478
	05-06	**.321** (.300-.343)	**.270** (.250-.300)	**.540** (.470-.610)	**1.08** (.930-1.23)	**1.64** (1.40-1.94)	3310
	07-08	**.321** (.303-.341)	**.270** (.260-.290)	**.520** (.470-.580)	**1.05** (.920-1.20)	**1.55** (1.30-1.80)	3461
	09-10	**.307** (.297-.318)	**.270** (.260-.280)	**.490** (.460-.540)	**.990** (.900-1.10)	**1.50** (1.36-1.60)	3760

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.3, 0.3, 0.14, 0.2, 0.2, and 0.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Blood Cadmium (2011 - 2012)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.279** (.267-.292)	**.250** (.230-.260)	**.460** (.430-.490)	**.960** (.870-1.10)	**1.50** (1.30-1.70)	7920
Age group							
1-5 years	11-12	*	**< LOD**	**< LOD**	**.190** (.160-.200)	**.210** (.190-.240)	713
6-11 years	11-12	*	**< LOD**	**.160** (<LOD-.180)	**.210** (.190-.230)	**.240** (.220-.280)	1048
12-19 years	11-12	*	**.160** (<LOD-.170)	**.230** (.210-.240)	**.340** (.290-.470)	**.650** (.470-.880)	1129
20 years and older	11-12	**.337** (.323-.353)	**.300** (.290-.320)	**.550** (.520-.580)	**1.14** (1.01-1.28)	**1.70** (1.50-1.80)	5030
Gender							
Males	11-12	**.255** (.238-.274)	**.210** (.200-.230)	**.410** (.360-.480)	**.940** (.820-1.09)	**1.48** (1.20-1.70)	3968
Females	11-12	**.304** (.289-.320)	**.280** (.260-.300)	**.490** (.460-.510)	**.980** (.850-1.16)	**1.53** (1.30-1.70)	3952
Race/ethnicity							
Mexican Americans	11-12	**.217** (.202-.233)	**.200** (.180-.220)	**.310** (.290-.340)	**.550** (.510-.600)	**.810** (.710-.920)	1077
Non-Hispanic blacks	11-12	**.291** (.274-.309)	**.260** (.240-.270)	**.470** (.430-.520)	**1.07** (.950-1.20)	**1.50** (1.40-1.60)	2195
Non-Hispanic whites	11-12	**.284** (.264-.305)	**.250** (.230-.270)	**.470** (.420-.520)	**1.02** (.810-1.25)	**1.65** (1.30-1.90)	2493
All Hispanics	11-12	**.227** (.211-.244)	**.210** (.190-.230)	**.330** (.310-.380)	**.600** (.540-.660)	**.900** (.760-1.00)	1931
Asians	11-12	**.394** (.355-.437)	**.390** (.340-.450)	**.680** (.610-.760)	**1.04** (.960-1.18)	**1.40** (1.20-1.48)	1005

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.16.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cadmium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00**	**.193** (.169-.220)	**.232** (.214-.249)	**.475** (.436-.519)	**.858** (.763-.980)	**1.20** (1.06-1.34)	2257
	01-02**	**.210** (.189-.235)	**.230** (.207-.255)	**.458** (.423-.482)	**.839** (.753-.919)	**1.20** (1.07-1.28)	2690
	03-04	**.211** (.196-.226)	**.210** (.200-.230)	**.450** (.400-.500)	**.800** (.730-.880)	**1.15** (.980-1.26)	2543
	05-06	**.191** (.170-.216)	**.200** (.170-.220)	**.400** (.360-.460)	**.780** (.700-.860)	**1.05** (.960-1.17)	2576
	07-08	**.185** (.172-.198)	**.180** (.170-.200)	**.380** (.360-.400)	**.700** (.650-.770)	**1.00** (.920-1.12)	2627
	09-10	**.179** (.169-.190)	**.180** (.170-.200)	**.370** (.340-.400)	**.690** (.630-.770)	**1.03** (.910-1.13)	2848
Age group							
6-11 years	99-00**	*	**.078** (.061-.101)	**.141** (.115-.173)	**.219** (.178-.233)	**.279** (.211-.507)	310
	01-02**	**.061** (<LOD-.081)	**.077** (.067-.092)	**.140** (.112-.160)	**.219** (.184-.262)	**.282** (.260-.326)	368
	03-04	**.077** (.065-.090)	**.080** (.060-.090)	**.120** (.100-.160)	**.180** (.160-.310)	**.310** (.170-.610)	287
	05-06	**.066** (.056-.078)	**.060** (.050-.080)	**.110** (.090-.130)	**.180** (.130-.240)	**.240** (.160-.290)	355
	07-08	**.064** (.058-.071)	**.060** (.050-.070)	**.110** (.090-.130)	**.180** (.140-.210)	**.230** (.180-.310)	394
	09-10	**.057** (.053-.061)	**.060** (.050-.060)	**.090** (.080-.100)	**.130** (.120-.160)	**.170** (.140-.230)	378
12-19 years	99-00**	**.092** (.067-.126)	**.128** (.107-.148)	**.203** (.183-.232)	**.329** (.272-.372)	**.426** (.366-.596)	648
	01-02**	**.109** (.087-.136)	**.135** (.114-.157)	**.210** (.189-.247)	**.327** (.289-.366)	**.452** (.366-.480)	762
	03-04	**.121** (.109-.134)	**.130** (.110-.150)	**.200** (.170-.210)	**.300** (.260-.360)	**.390** (.330-.490)	724
	05-06	**.099** (.090-.109)	**.110** (.100-.120)	**.170** (.150-.190)	**.240** (.210-.280)	**.310** (.250-.430)	701
	07-08	**.089** (.080-.100)	**.080** (.070-.110)	**.160** (.140-.170)	**.260** (.200-.300)	**.330** (.280-.410)	376
	09-10	**.081** (.076-.086)	**.080** (.070-.080)	**.140** (.120-.150)	**.220** (.180-.250)	**.280** (.240-.300)	451
20 years and older	99-00**	**.281** (.253-.313)	**.306** (.261-.339)	**.551** (.510-.623)	**.980** (.836-1.13)	**1.32** (1.13-1.57)	1299
	01-02**	**.273** (.249-.299)	**.280** (.261-.308)	**.545** (.493-.607)	**.972** (.855-1.06)	**1.28** (1.20-1.43)	1560
	03-04	**.260** (.238-.284)	**.270** (.240-.300)	**.530** (.470-.580)	**.890** (.800-.990)	**1.25** (1.09-1.46)	1532
	05-06	**.241** (.213-.272)	**.250** (.220-.290)	**.490** (.440-.560)	**.860** (.790-.930)	**1.21** (1.06-1.32)	1520
	07-08	**.232** (.215-.251)	**.240** (.210-.260)	**.450** (.410-.490)	**.790** (.730-.870)	**1.13** (.990-1.44)	1857
	09-10	**.229** (.213-.245)	**.230** (.210-.260)	**.430** (.400-.470)	**.790** (.700-.910)	**1.13** (1.03-1.28)	2019
Gender							
Males	99-00**	**.199** (.165-.241)	**.227** (.193-.263)	**.462** (.381-.539)	**.892** (.748-1.15)	**1.41** (.980-1.83)	1121
	01-02**	**.201** (.177-.229)	**.223** (.191-.257)	**.445** (.393-.481)	**.875** (.741-1.03)	**1.22** (1.12-1.38)	1335
	03-04	**.206** (.190-.222)	**.210** (.190-.230)	**.440** (.390-.490)	**.790** (.700-.870)	**1.01** (.890-1.25)	1277
	05-06	**.195** (.176-.217)	**.210** (.190-.230)	**.400** (.360-.440)	**.800** (.730-.890)	**1.17** (1.01-1.30)	1271
	07-08	**.179** (.162-.197)	**.180** (.160-.200)	**.360** (.320-.400)	**.670** (.540-.780)	**.950** (.800-1.16)	1327
	09-10	**.170** (.157-.185)	**.180** (.150-.200)	**.350** (.310-.380)	**.650** (.560-.700)	**.950** (.770-1.14)	1398
Females	99-00**	**.187** (.153-.229)	**.239** (.220-.255)	**.492** (.456-.540)	**.818** (.705-.980)	**1.10** (1.01-1.19)	1136
	01-02**	**.219** (.192-.251)	**.234** (.202-.265)	**.466** (.433-.519)	**.817** (.733-.886)	**1.17** (.918-1.36)	1355
	03-04	**.216** (.195-.238)	**.210** (.200-.240)	**.450** (.400-.530)	**.820** (.700-.960)	**1.20** (1.02-1.37)	1266
	05-06	**.188** (.160-.221)	**.190** (.160-.220)	**.400** (.350-.480)	**.750** (.640-.860)	**.980** (.830-1.20)	1305
	07-08	**.191** (.177-.207)	**.190** (.170-.200)	**.400** (.370-.430)	**.740** (.660-.840)	**1.09** (.940-1.38)	1300
	09-10	**.188** (.172-.206)	**.200** (.170-.210)	**.400** (.360-.440)	**.740** (.620-.880)	**1.07** (.910-1.31)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.06, 0.06, 0.06, 0.042, 0.042, and 0.042 respectively.
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* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**All results are corrected for molybdenum oxide interference in the ICP-MS method.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
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Urinary Cadmium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00**	**.191** (.157-.233)	**.202** (.167-.221)	**.447** (.351-.551)	**.813** (.686-.977)	**1.12** (.886-1.38)	780
	01-02**	**.160** (.135-.189)	**.181** (.171-.198)	**.322** (.285-.362)	**.559** (.430-.733)	**.766** (.633-1.15)	683
	03-04	**.175** (.151-.203)	**.170** (.150-.210)	**.350** (.290-.430)	**.680** (.520-.820)	**1.04** (.820-1.20)	614
	05-06	**.173** (.152-.196)	**.180** (.160-.200)	**.340** (.300-.380)	**.560** (.500-.630)	**.780** (.660-.900)	652
	07-08	**.159** (.139-.181)	**.170** (.140-.200)	**.320** (.290-.370)	**.570** (.510-.620)	**.710** (.630-.830)	515
	09-10	**.153** (.136-.173)	**.150** (.130-.170)	**.300** (.240-.360)	**.530** (.440-.680)	**.790** (.610-.840)	613
Non-Hispanic blacks	99-00**	**.283** (.208-.387)	**.316** (.243-.412)	**.633** (.498-.806)	**1.22** (.892-1.38)	**1.48** (1.30-1.72)	546
	01-02**	**.277** (.229-.336)	**.302** (.257-.354)	**.589** (.476-.713)	**1.04** (.843-1.38)	**1.51** (1.28-1.74)	667
	03-04	**.265** (.237-.295)	**.270** (.220-.320)	**.550** (.440-.640)	**.960** (.810-1.17)	**1.52** (1.06-1.82)	717
	05-06	**.236** (.218-.254)	**.240** (.210-.260)	**.480** (.420-.530)	**.830** (.670-.930)	**1.04** (.870-1.26)	692
	07-08	**.246** (.218-.277)	**.260** (.220-.300)	**.460** (.420-.530)	**.840** (.690-.980)	**1.40** (.900-1.85)	589
	09-10	**.234** (.211-.260)	**.240** (.220-.270)	**.450** (.410-.540)	**.910** (.750-1.06)	**1.42** (.990-1.74)	544
Non-Hispanic whites	99-00**	**.175** (.148-.206)	**.220** (.194-.246)	**.455** (.388-.510)	**.848** (.714-1.01)	**1.17** (.963-1.47)	760
	01-02**	**.204** (.179-.231)	**.221** (.191-.255)	**.445** (.394-.479)	**.817** (.717-.875)	**1.17** (.989-1.24)	1132
	03-04	**.209** (.192-.226)	**.200** (.190-.220)	**.440** (.390-.500)	**.790** (.700-.860)	**1.13** (.940-1.26)	1070
	05-06	**.185** (.159-.216)	**.200** (.160-.230)	**.400** (.330-.480)	**.780** (.670-.920)	**1.05** (.940-1.25)	1041
	07-08	**.177** (.161-.195)	**.170** (.150-.190)	**.370** (.320-.400)	**.690** (.620-.780)	**1.00** (.880-1.13)	1095
	09-10	**.171** (.158-.186)	**.180** (.150-.200)	**.350** (.320-.390)	**.680** (.590-.780)	**1.05** (.880-1.18)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.06, 0.06, 0.06, 0.042, 0.042, and 0.042 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result
.**All results are corrected for molybdenum oxide interference in the ICP-MS method.

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Urinary Cadmium (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.155** (.143-.169)	**.153** (.134-.175)	**.310** (.281-.352)	**.629** (.590-.670)	**.874** (.806-1.08)	2504
Age group							
6-11 years	11-12	*	**< LOD**	**.070** (.056-.076)	**.107** (.088-.128)	**.148** (.118-.200)	399
12-19 years	11-12	*	**.069** (<LOD-.080)	**.118** (.100-.152)	**.218** (.191-.267)	**.280** (.219-.339)	390
20 years and older	11-12	**.194** (.178-.211)	**.192** (.175-.217)	**.375** (.336-.417)	**.715** (.664-.790)	**1.08** (.846-1.27)	1715
Gender							
Males	11-12	**.150** (.136-.166)	**.152** (.131-.170)	**.292** (.262-.331)	**.589** (.518-.675)	**.832** (.769-.941)	1262
Females	11-12	**.160** (.142-.181)	**.153** (.123-.192)	**.332** (.292-.375)	**.669** (.607-.741)	**1.07** (.798-1.31)	1242
Race/ethnicity							
Mexican Americans	11-12	**.121** (.112-.132)	**.115** (.094-.139)	**.221** (.183-.274)	**.456** (.386-.547)	**.643** (.539-.705)	317
Non-Hispanic blacks	11-12	**.193** (.172-.216)	**.199** (.174-.216)	**.366** (.304-.445)	**.719** (.594-.831)	**1.05** (.825-1.38)	669
Non-Hispanic whites	11-12	**.152** (.135-.170)	**.148** (.123-.183)	**.303** (.269-.352)	**.615** (.524-.684)	**.846** (.759-1.09)	820
All Hispanics	11-12	**.133** (.118-.150)	**.127** (.105-.153)	**.267** (.207-.325)	**.546** (.452-.609)	**.782** (.646-.976)	573
Asians	11-12	**.218** (.190-.249)	**.215** (.172-.251)	**.453** (.405-.604)	**.865** (.762-1.23)	**1.34** (1.02-1.75)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.056.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cadmium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00**	**.181** (.157-.209)	**.219** (.199-.238)	**.423** (.391-.446)	**.712** (.645-.757)	**.941** (.826-1.07)	2257
	01-02**	**.199** (.181-.218)	**.212** (.194-.232)	**.404** (.377-.440)	**.690** (.630-.754)	**.919** (.813-.998)	2689
	03-04	**.210** (.201-.219)	**.208** (.189-.226)	**.412** (.381-.438)	**.678** (.650-.716)	**.940** (.833-1.04)	2543
	05-06	**.189** (.169-.210)	**.180** (.160-.200)	**.370** (.310-.430)	**.650** (.590-.720)	**.910** (.770-1.08)	2576
	07-08	**.193** (.177-.210)	**.190** (.180-.210)	**.370** (.330-.410)	**.660** (.580-.740)	**.960** (.840-1.06)	2627
	09-10	**.191** (.184-.199)	**.180** (.170-.190)	**.370** (.340-.400)	**.680** (.630-.730)	**.910** (.840-1.00)	2848
Age group							
6-11 years	99-00**	*	**.085** (.063-.107)	**.148** (.123-.182)	**.210** (.171-.316)	**.316** (.184-.607)	310
	01-02**	**.075** (<LOD-.094)	**.100** (.083-.112)	**.166** (.136-.192)	**.233** (.206-.281)	**.318** (.221-.440)	368
	03-04	**.090** (.078-.104)	**.091** (.075-.104)	**.126** (.111-.156)	**.200** (.147-.350)	**.308** (.178-.415)	287
	05-06	**.081** (.072-.092)	**.080** (.070-.090)	**.130** (.110-.140)	**.170** (.150-.190)	**.200** (.180-.240)	355
	07-08	**.084** (.076-.092)	**.080** (.080-.090)	**.120** (.110-.140)	**.170** (.150-.240)	**.260** (.180-.430)	394
	09-10	**.077** (.070-.085)	**.080** (.070-.090)	**.110** (.100-.130)	**.160** (.130-.220)	**.230** (.140-.280)	378
12-19 years	99-00**	**.071** (.051-.098)	**.093** (.084-.106)	**.147** (.130-.163)	**.215** (.204-.240)	**.283** (.222-.404)	648
	01-02**	**.078** (.067-.091)	**.091** (.085-.101)	**.137** (.123-.143)	**.191** (.175-.234)	**.280** (.234-.321)	762
	03-04	**.086** (.077-.096)	**.084** (.074-.097)	**.122** (.113-.135)	**.176** (.154-.198)	**.234** (.187-.274)	724
	05-06	**.076** (.071-.081)	**.080** (.070-.090)	**.120** (.110-.130)	**.150** (.140-.180)	**.210** (.160-.240)	701
	07-08	**.070** (.062-.079)	**.070** (.070-.080)	**.110** (.100-.110)	**.150** (.140-.160)	**.180** (.160-.210)	376
	09-10	**.076** (.068-.084)	**.080** (.070-.090)	**.120** (.100-.130)	**.160** (.140-.180)	**.190** (.170-.270)	451
20 years and older	99-00**	**.267** (.247-.289)	**.288** (.261-.304)	**.484** (.433-.545)	**.769** (.727-.818)	**1.07** (.927-1.17)	1299
	01-02**	**.261** (.236-.289)	**.273** (.247-.303)	**.481** (.426-.518)	**.779** (.691-.850)	**.979** (.874-1.12)	1559
	03-04	**.268** (.255-.281)	**.270** (.247-.292)	**.490** (.444-.538)	**.767** (.688-.830)	**1.02** (.909-1.14)	1532
	05-06	**.240** (.216-.267)	**.230** (.200-.260)	**.440** (.400-.500)	**.730** (.660-.820)	**1.02** (.850-1.18)	1520
	07-08	**.247** (.227-.270)	**.240** (.220-.270)	**.430** (.390-.470)	**.740** (.670-.840)	**1.05** (.930-1.16)	1857
	09-10	**.242** (.232-.253)	**.230** (.220-.250)	**.440** (.420-.460)	**.760** (.700-.820)	**1.01** (.910-1.14)	2019
Gender							
Males	99-00**	**.154** (.131-.182)	**.176** (.158-.191)	**.329** (.293-.382)	**.617** (.537-.700)	**.789** (.696-.929)	1121
	01-02**	**.159** (.143-.177)	**.168** (.157-.182)	**.335** (.304-.364)	**.536** (.491-.653)	**.757** (.690-.856)	1334
	03-04	**.173** (.161-.187)	**.162** (.143-.185)	**.325** (.300-.352)	**.591** (.560-.631)	**.740** (.678-.795)	1277
	05-06	**.160** (.145-.177)	**.150** (.130-.160)	**.300** (.260-.340)	**.620** (.560-.670)	**.820** (.710-.990)	1271
	07-08	**.160** (.146-.175)	**.160** (.140-.180)	**.290** (.260-.330)	**.520** (.440-.650)	**.740** (.600-.960)	1327
	09-10	**.155** (.149-.161)	**.140** (.140-.160)	**.280** (.250-.300)	**.540** (.510-.600)	**.800** (.670-.900)	1398
Females	99-00**	**.211** (.170-.261)	**.267** (.239-.308)	**.473** (.423-.551)	**.783** (.690-.917)	**1.09** (.813-1.38)	1136
	01-02**	**.245** (.216-.278)	**.263** (.228-.297)	**.479** (.414-.541)	**.792** (.687-.884)	**.985** (.876-1.16)	1355
	03-04	**.252** (.238-.266)	**.253** (.227-.288)	**.487** (.438-.533)	**.802** (.716-.906)	**1.06** (.940-1.21)	1266
	05-06	**.220** (.193-.252)	**.220** (.180-.250)	**.420** (.370-.470)	**.690** (.590-.850)	**.990** (.780-1.31)	1305
	07-08	**.231** (.210-.254)	**.230** (.200-.270)	**.440** (.390-.480)	**.770** (.700-.860)	**1.08** (.970-1.16)	1300
	09-10	**.233** (.218-.248)	**.240** (.220-.260)	**.450** (.420-.490)	**.770** (.680-.860)	**1.09** (.910-1.19)	1450

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**All results are corrected for molybdenum oxide interference in the ICP-MS method.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cadmium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00**	**.175** (.137-.223)	**.181** (.144-.225)	**.331** (.266-.418)	**.622** (.441-.828)	**.856** (.674-1.13)	780
	01-02**	**.156** (.136-.178)	**.170** (.150-.184)	**.282** (.263-.340)	**.501** (.388-.614)	**.693** (.507-.839)	682
	03-04	**.163** (.147-.181)	**.159** (.140-.183)	**.296** (.256-.311)	**.531** (.418-.667)	**.718** (.562-.950)	614
	05-06	**.162** (.146-.181)	**.150** (.140-.170)	**.280** (.220-.340)	**.480** (.430-.510)	**.570** (.520-.640)	652
	07-08	**.159** (.141-.178)	**.160** (.130-.180)	**.270** (.220-.330)	**.480** (.370-.620)	**.720** (.520-.950)	515
	09-10	**.161** (.149-.173)	**.150** (.130-.170)	**.280** (.240-.320)	**.510** (.410-.630)	**.720** (.540-.890)	613
Non-Hispanic blacks	99-00**	**.183** (.140-.240)	**.202** (.168-.241)	**.414** (.343-.472)	**.663** (.516-.827)	**.873** (.722-.962)	546
	01-02**	**.190** (.156-.232)	**.196** (.174-.225)	**.387** (.336-.449)	**.686** (.559-.850)	**.917** (.725-1.08)	667
	03-04	**.190** (.173-.210)	**.185** (.168-.207)	**.338** (.288-.431)	**.700** (.500-.818)	**.865** (.708-1.10)	717
	05-06	**.171** (.159-.183)	**.160** (.140-.180)	**.320** (.290-.370)	**.550** (.500-.580)	**.700** (.610-.730)	692
	07-08	**.180** (.164-.197)	**.170** (.160-.190)	**.330** (.290-.390)	**.600** (.470-.700)	**.770** (.690-.900)	589
	09-10	**.186** (.170-.203)	**.180** (.160-.200)	**.360** (.310-.430)	**.680** (.570-.760)	**.860** (.740-1.04)	544
Non-Hispanic whites	99-00**	**.175** (.146-.209)	**.219** (.191-.250)	**.432** (.387-.470)	**.729** (.666-.783)	**1.00** (.826-1.16)	760
	01-02**	**.205** (.184-.229)	**.224** (.208-.242)	**.421** (.382-.470)	**.719** (.668-.784)	**.931** (.806-1.05)	1132
	03-04	**.220** (.207-.235)	**.221** (.197-.253)	**.434** (.398-.476)	**.687** (.647-.767)	**1.00** (.830-1.08)	1070
	05-06	**.193** (.169-.221)	**.180** (.160-.220)	**.390** (.310-.480)	**.680** (.630-.750)	**.930** (.800-1.07)	1041
	07-08	**.199** (.178-.222)	**.200** (.180-.230)	**.380** (.340-.440)	**.700** (.630-.810)	**1.03** (.880-1.13)	1095
	09-10	**.192** (.183-.201)	**.180** (.170-.200)	**.390** (.340-.420)	**.700** (.630-.760)	**.910** (.840-1.02)	1225

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**All results are corrected for molybdenum oxide interference in the ICP-MS method.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cadmium (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.176** (.165-.187)	**.172** (.159-.182)	**.346** (.313-.378)	**.582** (.551-.639)	**.907** (.772-.997)	2502
Age group							
6-11 years	11-12	*	**< LOD**	**.118** (.107-.129)	**.168** (.150-.211)	**.235** (.180-.300)	398
12-19 years	11-12	*	**.071** (<LOD-.078)	**.118** (.103-.135)	**.176** (.153-.204)	**.250** (.176-.444)	390
20 years and older	11-12	**.220** (.204-.237)	**.213** (.198-.230)	**.416** (.374-.443)	**.678** (.594-.772)	**.977** (.892-1.15)	1714
Gender							
Males	11-12	**.140** (.127-.156)	**.136** (.120-.148)	**.244** (.213-.309)	**.492** (.424-.554)	**.713** (.583-.801)	1261
Females	11-12	**.218** (.202-.236)	**.222** (.200-.243)	**.430** (.382-.456)	**.707** (.594-.868)	**1.08** (.904-1.22)	1241
Race/ethnicity							
Mexican Americans	11-12	**.137** (.127-.147)	**.124** (.105-.144)	**.244** (.196-.315)	**.409** (.367-.506)	**.519** (.406-1.00)	317
Non-Hispanic blacks	11-12	**.150** (.135-.166)	**.139** (.126-.164)	**.286** (.259-.307)	**.476** (.416-.659)	**.761** (.636-.857)	669
Non-Hispanic whites	11-12	**.183** (.167-.202)	**.180** (.158-.200)	**.370** (.327-.416)	**.582** (.543-.677)	**.932** (.725-1.15)	818
All Hispanics	11-12	**.149** (.143-.156)	**.144** (.132-.163)	**.281** (.244-.320)	**.471** (.400-.519)	**.686** (.516-.942)	573
Asians	11-12	**.291** (.262-.323)	**.286** (.223-.342)	**.610** (.532-.732)	**1.03** (.913-1.12)	**1.36** (1.07-1.59)	353

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cesium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**4.35** (4.00-4.74)	**4.90** (4.40-5.40)	**7.10** (6.60-7.70)	**9.60** (8.80-10.3)	**11.5** (10.2-13.0)	2464
	01-02	**4.81** (4.40-5.26)	**5.49** (5.12-5.90)	**7.91** (7.47-8.39)	**10.4** (9.56-11.4)	**12.6** (11.1-13.8)	2690
	03-04	**4.67** (4.39-4.97)	**5.14** (4.84-5.49)	**7.68** (7.20-8.21)	**10.6** (9.55-11.4)	**12.7** (11.5-13.9)	2558
	05-06	**4.69** (4.41-4.98)	**5.19** (4.91-5.43)	**7.68** (7.21-8.09)	**10.1** (9.65-10.9)	**12.6** (12.0-13.4)	2576
	07-08	**4.42** (4.25-4.60)	**4.90** (4.64-5.12)	**7.02** (6.79-7.38)	**9.46** (9.04-9.86)	**11.3** (10.5-11.8)	2627
	09-10	**4.06** (3.87-4.26)	**4.47** (4.22-4.66)	**6.54** (6.35-6.75)	**8.98** (8.25-9.68)	**11.0** (10.1-11.6)	2848
Age group							
6-11 years	99-00	**4.87** (4.08-5.81)	**5.70** (4.60-6.70)	**7.30** (6.70-8.00)	**9.00** (7.90-10.1)	**9.70** (9.00-10.8)	340
	01-02	**4.87** (4.08-5.82)	**5.64** (4.69-6.56)	**7.96** (6.77-8.84)	**9.88** (8.64-10.6)	**11.1** (10.2-12.4)	368
	03-04	**5.21** (4.74-5.71)	**5.50** (4.76-6.37)	**8.08** (7.10-8.83)	**11.5** (8.86-12.9)	**12.9** (10.8-13.6)	290
	05-06	**4.74** (4.31-5.21)	**5.38** (4.67-5.60)	**7.00** (6.38-7.50)	**9.30** (8.60-9.95)	**11.2** (9.62-12.9)	355
	07-08	**4.58** (4.22-4.96)	**5.10** (4.50-5.44)	**6.91** (6.45-7.47)	**8.25** (7.77-8.93)	**9.88** (8.47-10.9)	394
	09-10	**4.21** (3.84-4.62)	**4.58** (4.01-5.12)	**6.68** (6.25-6.98)	**8.28** (7.47-9.11)	**9.56** (8.68-11.9)	378
12-19 years	99-00	**4.55** (4.09-5.05)	**5.20** (4.40-5.60)	**6.90** (6.10-7.80)	**8.80** (8.10-9.50)	**10.7** (8.90-12.5)	718
	01-02	**5.22** (4.57-5.95)	**5.62** (5.16-6.12)	**7.55** (7.13-8.04)	**9.77** (9.12-11.1)	**12.0** (10.0-15.0)	762
	03-04	**5.04** (4.59-5.54)	**5.70** (5.16-6.07)	**7.53** (6.91-8.37)	**9.71** (8.80-10.4)	**11.6** (9.92-13.2)	725
	05-06	**4.76** (4.24-5.34)	**5.27** (4.80-5.74)	**7.50** (6.71-8.04)	**9.60** (8.52-10.5)	**10.6** (9.68-11.8)	701
	07-08	**4.58** (4.10-5.13)	**5.14** (4.30-5.76)	**6.93** (6.33-7.37)	**9.20** (7.67-9.91)	**10.6** (8.91-15.1)	376
	09-10	**3.70** (3.39-4.02)	**4.11** (3.54-4.70)	**6.17** (5.72-6.47)	**8.20** (7.16-8.79)	**9.52** (8.66-10.6)	451
20 years and older	99-00	**4.26** (3.94-4.62)	**4.80** (4.40-5.30)	**7.10** (6.50-7.60)	**9.80** (8.90-10.7)	**11.7** (10.2-13.4)	1406
	01-02	**4.74** (4.32-5.20)	**5.43** (5.05-5.87)	**7.97** (7.43-8.52)	**10.6** (9.73-11.5)	**12.9** (11.2-14.2)	1560
	03-04	**4.56** (4.23-4.90)	**5.03** (4.60-5.42)	**7.66** (7.01-8.34)	**10.7** (9.40-11.5)	**12.9** (11.5-14.9)	1543
	05-06	**4.67** (4.38-4.99)	**5.14** (4.84-5.44)	**7.77** (7.32-8.30)	**10.4** (9.72-11.5)	**13.2** (12.4-13.9)	1520
	07-08	**4.38** (4.20-4.58)	**4.79** (4.59-4.99)	**7.12** (6.81-7.52)	**9.69** (9.23-10.2)	**11.4** (10.6-12.0)	1857
	09-10	**4.10** (3.88-4.34)	**4.49** (4.21-4.71)	**6.57** (6.33-6.84)	**9.26** (8.37-10.1)	**11.1** (10.3-11.9)	2019
Gender							
Males	99-00	**4.84** (4.35-5.38)	**5.50** (4.60-6.00)	**7.50** (7.00-8.20)	**9.70** (8.80-11.3)	**11.7** (10.3-13.0)	1226
	01-02	**5.34** (4.89-5.84)	**6.13** (5.61-6.64)	**8.27** (7.84-9.08)	**10.8** (10.1-12.1)	**12.8** (11.3-15.0)	1335
	03-04	**5.03** (4.73-5.36)	**5.59** (5.17-6.00)	**7.98** (7.31-8.63)	**11.0** (9.53-11.8)	**12.9** (11.5-16.1)	1281
	05-06	**5.13** (4.78-5.51)	**5.37** (5.03-5.71)	**7.92** (7.61-8.41)	**10.9** (9.96-11.6)	**13.2** (12.4-13.9)	1271
	07-08	**4.77** (4.59-4.96)	**5.26** (4.98-5.43)	**7.18** (6.93-7.54)	**9.68** (8.93-10.6)	**11.6** (10.6-12.6)	1327
	09-10	**4.27** (4.00-4.55)	**4.70** (4.46-5.00)	**6.57** (6.39-6.81)	**8.67** (7.91-9.57)	**10.7** (9.66-11.3)	1398
Females	99-00	**3.95** (3.63-4.29)	**4.50** (4.20-4.90)	**6.70** (6.20-7.30)	**9.10** (8.30-10.0)	**11.2** (9.90-12.9)	1238
	01-02	**4.36** (3.95-4.81)	**4.87** (4.45-5.25)	**7.33** (6.71-8.01)	**9.77** (9.07-11.0)	**12.4** (10.4-13.8)	1355
	03-04	**4.35** (4.03-4.70)	**4.79** (4.25-5.26)	**7.30** (6.87-7.81)	**10.2** (9.40-11.0)	**12.1** (11.2-13.6)	1277
	05-06	**4.30** (3.98-4.65)	**4.89** (4.58-5.25)	**7.43** (6.99-7.83)	**9.79** (9.30-10.5)	**12.1** (10.6-13.1)	1305
	07-08	**4.12** (3.88-4.37)	**4.40** (4.17-4.74)	**6.84** (6.32-7.36)	**9.31** (8.69-9.76)	**10.5** (9.93-11.7)	1300
	09-10	**3.88** (3.63-4.14)	**4.13** (3.83-4.55)	**6.46** (5.95-6.90)	**9.29** (8.62-10.0)	**11.2** (10.3-12.1)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.14, 0.14, 0.2, 0.066, 0.066, and 0.066 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cesium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**4.32** (3.82-4.89)	**4.80** (4.30-5.20)	**6.70** (6.40-7.20)	**9.10** (8.00-9.90)	**11.1** (9.60-12.7)	884
	01-02	**4.63** (4.10-5.24)	**5.29** (4.59-5.89)	**7.08** (6.42-7.99)	**9.13** (7.86-11.3)	**11.3** (8.81-14.9)	683
	03-04	**4.94** (4.64-5.27)	**5.62** (5.01-6.09)	**7.86** (7.15-8.46)	**10.3** (8.99-11.3)	**11.9** (10.7-14.7)	618
	05-06	**4.64** (4.41-4.88)	**5.18** (4.91-5.55)	**7.29** (6.74-7.73)	**9.52** (8.76-9.98)	**11.5** (9.88-11.9)	652
	07-08	**4.50** (4.06-4.99)	**4.93** (4.40-5.56)	**6.98** (6.38-7.49)	**9.12** (8.25-9.82)	**10.8** (9.45-12.1)	515
	09-10	**4.20** (3.95-4.48)	**4.47** (4.16-4.87)	**6.49** (6.00-7.01)	**8.64** (7.81-9.40)	**10.2** (9.15-11.4)	613
Non-Hispanic blacks	99-00	**4.94** (4.33-5.64)	**5.40** (4.80-6.40)	**7.50** (6.90-8.40)	**9.80** (8.80-10.8)	**11.6** (9.80-13.1)	568
	01-02	**4.93** (4.70-5.17)	**5.33** (5.05-5.64)	**7.36** (6.97-7.59)	**9.44** (8.71-9.68)	**10.7** (10.1-12.3)	667
	03-04	**4.71** (4.47-4.97)	**5.12** (4.71-5.49)	**7.17** (6.72-7.60)	**9.13** (8.52-9.99)	**10.7** (9.99-11.4)	723
	05-06	**4.78** (4.42-5.18)	**5.26** (5.03-5.44)	**7.20** (6.63-7.66)	**9.14** (8.26-10.6)	**11.0** (9.63-13.7)	692
	07-08	**4.64** (4.29-5.01)	**4.90** (4.48-5.31)	**6.90** (6.35-7.42)	**9.39** (8.29-10.3)	**11.3** (9.59-12.6)	589
	09-10	**4.07** (3.82-4.35)	**4.68** (4.29-4.84)	**6.56** (6.19-7.01)	**8.98** (8.12-9.31)	**9.97** (9.27-11.3)	544
Non-Hispanic whites	99-00	**4.25** (3.83-4.72)	**4.80** (4.20-5.50)	**7.20** (6.60-7.90)	**9.70** (8.90-10.7)	**11.8** (10.3-13.3)	821
	01-02	**4.77** (4.27-5.32)	**5.49** (4.99-6.05)	**7.98** (7.45-8.61)	**10.4** (9.54-11.4)	**12.6** (11.0-13.8)	1132
	03-04	**4.56** (4.22-4.94)	**5.02** (4.59-5.42)	**7.60** (7.00-8.23)	**10.7** (9.26-11.8)	**12.9** (11.5-14.7)	1074
	05-06	**4.64** (4.25-5.05)	**5.19** (4.76-5.49)	**7.77** (7.18-8.46)	**10.3** (9.62-11.5)	**13.1** (12.1-13.9)	1041
	07-08	**4.29** (4.07-4.53)	**4.76** (4.48-5.08)	**7.02** (6.67-7.49)	**9.50** (8.91-9.93)	**11.3** (10.3-12.2)	1095
	09-10	**3.96** (3.73-4.20)	**4.38** (4.10-4.64)	**6.43** (6.15-6.63)	**8.62** (7.86-9.29)	**10.5** (9.35-11.5)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.14, 0.14, 0.2, 0.066, 0.066, and 0.066 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cesium (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**3.82** (3.58-4.08)	**4.11** (3.90-4.42)	**6.31** (5.96-6.63)	**8.81** (8.39-9.21)	**10.5** (9.76-11.1)	2503
Age group							
6-11 years	11-12	**3.91** (3.50-4.36)	**4.52** (3.75-4.96)	**6.71** (6.18-7.16)	**8.61** (7.39-9.28)	**10.2** (9.02-10.6)	399
12-19 years	11-12	**3.56** (3.08-4.13)	**3.96** (3.45-4.56)	**5.96** (5.19-6.73)	**7.74** (7.17-8.99)	**9.55** (7.81-10.6)	390
20 years and older	11-12	**3.85** (3.61-4.10)	**4.11** (3.85-4.43)	**6.31** (5.94-6.67)	**9.08** (8.51-9.44)	**10.7** (9.81-11.2)	1714
Gender							
Males	11-12	**4.20** (3.94-4.47)	**4.49** (4.21-4.98)	**6.53** (6.15-6.95)	**9.08** (8.43-9.55)	**10.6** (9.80-11.1)	1261
Females	11-12	**3.49** (3.16-3.85)	**3.75** (3.48-3.99)	**5.94** (5.38-6.55)	**8.58** (7.58-9.33)	**10.3** (9.44-11.2)	1242
Race/ethnicity							
Mexican Americans	11-12	**3.76** (3.43-4.12)	**4.12** (3.61-4.54)	**5.50** (5.21-6.21)	**7.77** (7.32-8.75)	**9.68** (8.07-10.4)	317
Non-Hispanic blacks	11-12	**3.97** (3.68-4.29)	**4.49** (4.10-4.88)	**6.49** (5.98-6.88)	**8.12** (7.56-9.21)	**9.59** (8.61-11.0)	669
Non-Hispanic whites	11-12	**3.78** (3.50-4.07)	**4.01** (3.75-4.30)	**6.30** (5.85-6.85)	**9.08** (8.53-9.48)	**10.6** (9.88-11.1)	820
All Hispanics	11-12	**3.80** (3.44-4.20)	**4.13** (3.65-4.62)	**5.87** (5.40-6.34)	**7.77** (7.16-8.73)	**9.52** (8.08-10.3)	573
Asians	11-12	**4.22** (3.88-4.60)	**4.43** (4.00-5.02)	**7.42** (6.58-7.92)	**10.7** (9.27-11.4)	**12.4** (11.1-15.6)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.12.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cesium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**4.10** (3.96-4.25)	**4.13** (3.97-4.27)	**5.41** (5.21-5.70)	**7.14** (6.83-7.50)	**8.64** (8.00-9.30)	2464
	01-02	**4.54** (4.30-4.79)	**4.44** (4.20-4.64)	**6.06** (5.66-6.47)	**8.18** (7.62-8.95)	**10.2** (8.84-11.7)	2689
	03-04	**4.64** (4.42-4.87)	**4.42** (4.21-4.74)	**6.11** (5.76-6.48)	**8.51** (7.99-9.15)	**10.6** (9.75-11.0)	2558
	05-06	**4.62** (4.37-4.88)	**4.51** (4.20-4.76)	**6.19** (5.90-6.55)	**8.84** (8.14-9.24)	**10.8** (9.71-12.1)	2576
	07-08	**4.62** (4.42-4.82)	**4.58** (4.36-4.79)	**6.23** (5.96-6.61)	**8.67** (7.79-9.52)	**10.6** (9.78-11.2)	2627
	09-10	**4.33** (4.17-4.49)	**4.28** (4.12-4.45)	**6.00** (5.70-6.23)	**8.06** (7.76-8.36)	**9.75** (9.05-10.4)	2848
Age group							
6-11 years	99-00	**5.34** (5.03-5.67)	**5.42** (5.03-6.04)	**6.63** (6.18-7.13)	**8.23** (7.13-9.41)	**9.90** (7.88-10.1)	340
	01-02	**5.95** (5.48-6.46)	**5.91** (5.43-6.53)	**7.77** (7.00-8.28)	**9.27** (8.35-11.9)	**11.9** (9.38-12.3)	368
	03-04	**6.07** (5.63-6.53)	**6.02** (5.45-6.49)	**8.30** (7.16-8.99)	**10.8** (9.15-11.8)	**11.9** (10.3-15.8)	290
	05-06	**5.85** (5.41-6.34)	**5.74** (5.21-6.41)	**7.65** (6.67-9.11)	**10.1** (9.38-10.8)	**11.6** (10.1-14.9)	355
	07-08	**5.96** (5.53-6.43)	**6.12** (5.79-6.55)	**7.88** (7.33-8.53)	**10.7** (8.91-12.1)	**12.5** (10.9-14.1)	394
	09-10	**5.74** (5.30-6.22)	**5.58** (5.15-6.12)	**7.16** (6.71-7.87)	**9.19** (8.13-10.4)	**12.2** (8.69-14.8)	378
12-19 years	99-00	**3.43** (3.29-3.58)	**3.54** (3.29-3.68)	**4.35** (4.17-4.56)	**5.31** (4.97-5.79)	**6.67** (5.33-8.09)	718
	01-02	**3.73** (3.41-4.08)	**3.55** (3.36-3.74)	**4.74** (4.40-5.14)	**6.10** (5.35-7.63)	**8.08** (6.44-9.82)	762
	03-04	**3.60** (3.37-3.85)	**3.51** (3.33-3.72)	**4.53** (4.24-4.87)	**6.08** (5.14-6.94)	**7.27** (6.13-9.07)	725
	05-06	**3.66** (3.40-3.93)	**3.59** (3.40-3.83)	**4.76** (4.30-5.20)	**5.93** (5.62-6.62)	**7.62** (6.03-8.07)	701
	07-08	**3.58** (3.31-3.88)	**3.70** (3.22-3.96)	**4.98** (4.60-5.17)	**6.36** (5.38-7.28)	**7.93** (6.06-9.76)	376
	09-10	**3.46** (3.27-3.65)	**3.48** (3.23-3.74)	**4.39** (4.16-4.70)	**5.54** (5.01-6.32)	**6.56** (5.95-7.35)	451
20 years and older	99-00	**4.08** (3.88-4.29)	**4.06** (3.85-4.29)	**5.39** (5.04-5.85)	**7.17** (6.84-7.58)	**8.61** (7.91-9.30)	1406
	01-02	**4.54** (4.30-4.78)	**4.43** (4.20-4.59)	**5.94** (5.64-6.40)	**8.15** (7.46-8.97)	**10.2** (8.74-11.7)	1559
	03-04	**4.68** (4.46-4.91)	**4.47** (4.27-4.80)	**6.11** (5.83-6.43)	**8.47** (7.76-9.17)	**10.5** (9.68-11.2)	1543
	05-06	**4.67** (4.42-4.93)	**4.54** (4.25-4.78)	**6.24** (5.93-6.66)	**8.92** (8.29-9.31)	**11.2** (9.71-12.7)	1520
	07-08	**4.67** (4.46-4.88)	**4.58** (4.34-4.82)	**6.19** (5.93-6.61)	**8.65** (7.79-9.52)	**10.6** (9.68-11.3)	1857
	09-10	**4.34** (4.17-4.53)	**4.28** (4.10-4.49)	**6.07** (5.70-6.33)	**8.20** (7.81-8.65)	**9.80** (9.05-11.1)	2019
Gender							
Males	99-00	**3.78** (3.65-3.91)	**3.78** (3.61-3.96)	**4.96** (4.72-5.20)	**6.50** (6.18-6.70)	**7.71** (7.01-8.64)	1226
	01-02	**4.22** (3.96-4.51)	**4.10** (3.87-4.41)	**5.60** (5.27-6.03)	**7.67** (6.90-8.48)	**9.46** (8.22-11.5)	1334
	03-04	**4.24** (3.99-4.50)	**4.12** (3.89-4.37)	**5.66** (5.19-6.06)	**7.66** (6.90-8.40)	**9.00** (8.36-10.3)	1281
	05-06	**4.21** (3.94-4.50)	**4.11** (3.72-4.46)	**5.75** (5.14-6.11)	**7.68** (6.91-8.78)	**9.33** (8.84-9.84)	1271
	07-08	**4.27** (4.04-4.51)	**4.19** (4.02-4.42)	**5.81** (5.46-6.29)	**7.84** (7.20-8.65)	**9.61** (8.65-10.2)	1327
	09-10	**3.89** (3.70-4.09)	**3.85** (3.60-4.06)	**5.29** (4.89-5.69)	**7.02** (6.76-7.42)	**8.38** (7.87-9.18)	1398
Females	99-00	**4.43** (4.20-4.68)	**4.45** (4.14-4.77)	**5.92** (5.36-6.47)	**7.70** (7.16-8.07)	**9.41** (8.00-10.4)	1238
	01-02	**4.86** (4.58-5.16)	**4.72** (4.50-5.06)	**6.54** (5.93-7.00)	**8.50** (7.84-9.79)	**10.3** (8.95-12.2)	1355
	03-04	**5.05** (4.77-5.35)	**4.77** (4.44-5.14)	**6.58** (6.14-7.22)	**9.43** (8.56-10.5)	**11.3** (10.7-12.3)	1277
	05-06	**5.05** (4.78-5.33)	**4.86** (4.57-5.17)	**6.72** (6.31-7.23)	**9.65** (9.23-10.3)	**12.6** (11.0-13.3)	1305
	07-08	**4.98** (4.76-5.20)	**4.90** (4.69-5.20)	**6.72** (6.20-7.06)	**9.50** (8.37-10.5)	**11.3** (10.7-12.1)	1300
	09-10	**4.79** (4.63-4.97)	**4.69** (4.50-4.93)	**6.57** (6.34-6.85)	**8.88** (8.36-9.33)	**10.5** (9.56-12.0)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cesium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**3.99** (3.73-4.25)	**3.95** (3.65-4.17)	**5.09** (4.79-5.39)	**6.65** (6.08-7.10)	**7.98** (7.20-8.95)	884
	01-02	**4.51** (4.00-5.08)	**4.51** (3.82-4.95)	**5.91** (5.31-6.64)	**7.77** (6.60-10.0)	**10.0** (7.60-20.5)	682
	03-04	**4.58** (4.16-5.05)	**4.51** (4.10-4.92)	**5.74** (5.42-6.09)	**7.53** (6.59-8.91)	**9.44** (8.24-10.6)	618
	05-06	**4.36** (4.10-4.64)	**4.40** (3.97-4.73)	**5.69** (5.24-6.22)	**7.23** (6.69-7.80)	**8.14** (7.65-9.33)	652
	07-08	**4.50** (4.22-4.79)	**4.39** (3.96-4.86)	**6.07** (5.57-6.59)	**7.63** (7.30-7.89)	**9.06** (7.89-10.5)	515
	09-10	**4.41** (4.17-4.65)	**4.38** (4.04-4.59)	**5.70** (5.34-6.07)	**7.68** (7.17-8.24)	**8.89** (8.50-9.52)	613
Non-Hispanic blacks	99-00	**3.21** (2.90-3.56)	**3.26** (3.05-3.44)	**4.30** (4.00-4.55)	**5.50** (5.00-5.98)	**6.33** (5.91-7.04)	568
	01-02	**3.38** (3.19-3.57)	**3.35** (3.05-3.60)	**4.41** (4.15-4.78)	**5.87** (5.63-6.29)	**6.75** (6.41-7.03)	667
	03-04	**3.38** (3.21-3.56)	**3.30** (3.08-3.50)	**4.31** (4.02-4.62)	**5.79** (5.12-6.47)	**6.98** (6.38-7.18)	723
	05-06	**3.47** (3.34-3.60)	**3.40** (3.21-3.60)	**4.47** (4.25-4.68)	**5.94** (5.52-6.31)	**6.95** (6.20-7.51)	692
	07-08	**3.39** (3.21-3.58)	**3.33** (3.18-3.54)	**4.50** (4.21-4.78)	**5.84** (5.41-6.18)	**6.87** (5.94-7.58)	589
	09-10	**3.23** (3.05-3.42)	**3.20** (2.99-3.46)	**4.31** (4.12-4.59)	**5.88** (5.30-6.28)	**6.69** (6.32-7.89)	544
Non-Hispanic whites	99-00	**4.26** (4.07-4.47)	**4.28** (4.05-4.50)	**5.66** (5.26-6.05)	**7.27** (6.84-7.83)	**8.75** (7.93-9.38)	821
	01-02	**4.81** (4.55-5.08)	**4.63** (4.42-4.96)	**6.33** (5.91-6.68)	**8.46** (7.84-9.39)	**10.3** (9.04-11.8)	1132
	03-04	**4.81** (4.52-5.12)	**4.56** (4.31-4.98)	**6.28** (5.95-6.71)	**8.63** (7.99-9.28)	**10.6** (9.43-11.0)	1074
	05-06	**4.82** (4.50-5.17)	**4.68** (4.32-5.04)	**6.41** (6.00-6.81)	**9.18** (8.67-9.53)	**11.0** (9.71-12.7)	1041
	07-08	**4.81** (4.54-5.09)	**4.73** (4.42-5.12)	**6.43** (6.01-6.80)	**9.24** (8.20-9.82)	**11.0** (10.2-11.7)	1095
	09-10	**4.42** (4.23-4.63)	**4.36** (4.15-4.54)	**6.16** (5.82-6.51)	**8.13** (7.68-8.65)	**9.83** (8.79-11.4)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cesium (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**4.33** (4.13-4.53)	**4.27** (4.08-4.50)	**5.91** (5.63-6.33)	**8.12** (7.43-8.63)	**10.2** (8.93-10.7)	2501
Age group							
6-11 years	11-12	**5.56** (5.16-5.99)	**5.47** (5.06-5.98)	**7.15** (6.68-7.43)	**9.42** (7.88-10.7)	**10.7** (9.45-13.0)	398
12-19 years	11-12	**3.41** (3.16-3.67)	**3.35** (3.05-3.82)	**4.34** (3.95-4.93)	**5.30** (5.07-6.17)	**6.34** (5.66-6.64)	390
20 years and older	11-12	**4.36** (4.15-4.59)	**4.29** (4.10-4.54)	**6.00** (5.65-6.45)	**8.22** (7.64-8.78)	**10.2** (9.47-11.2)	1713
Gender							
Males	11-12	**3.93** (3.73-4.14)	**3.80** (3.63-4.10)	**5.31** (4.87-5.91)	**7.58** (6.78-8.26)	**8.80** (8.28-10.2)	1260
Females	11-12	**4.74** (4.52-4.97)	**4.73** (4.55-4.93)	**6.43** (5.91-6.82)	**8.55** (8.05-9.48)	**11.2** (9.48-12.5)	1241
Race/ethnicity							
Mexican Americans	11-12	**4.23** (3.96-4.51)	**4.14** (3.72-4.53)	**5.63** (5.11-5.91)	**7.06** (6.41-8.03)	**8.78** (7.48-10.3)	317
Non-Hispanic blacks	11-12	**3.09** (2.92-3.27)	**3.12** (2.89-3.32)	**4.13** (3.90-4.40)	**5.31** (4.98-5.63)	**6.29** (5.67-6.84)	669
Non-Hispanic whites	11-12	**4.56** (4.29-4.85)	**4.50** (4.19-4.80)	**6.34** (5.74-6.88)	**8.26** (7.86-9.36)	**10.3** (9.27-11.5)	818
All Hispanics	11-12	**4.25** (4.00-4.52)	**4.25** (3.88-4.49)	**5.69** (5.35-5.91)	**7.43** (6.61-8.23)	**8.67** (8.12-9.70)	573
Asians	11-12	**5.65** (5.13-6.22)	**5.40** (5.12-5.95)	**7.88** (6.84-9.33)	**12.0** (10.1-13.7)	**14.7** (12.2-19.4)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cobalt (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.375** (.336-.419)	**.410** (.370-.450)	**.630** (.570-.680)	**.950** (.890-1.03)	**1.32** (1.16-1.48)	2465
	01-02	**.379** (.355-.404)	**.410** (.380-.430)	**.610** (.570-.660)	**.940** (.870-1.00)	**1.28** (1.15-1.44)	2690
	03-04	**.316** (.291-.343)	**.330** (.300-.350)	**.520** (.490-.550)	**.820** (.750-.890)	**1.16** (1.08-1.26)	2558
	05-06	**.374** (.357-.392)	**.390** (.370-.410)	**.600** (.560-.630)	**.880** (.840-.950)	**1.33** (1.17-1.47)	2576
	07-08	**.369** (.351-.389)	**.380** (.360-.390)	**.580** (.550-.600)	**.920** (.840-1.01)	**1.32** (1.10-1.43)	2627
	09-10	**.369** (.341-.398)	**.380** (.350-.400)	**.600** (.560-.650)	**.960** (.870-1.06)	**1.40** (1.20-1.58)	2848
Age group							
6-11 years	99-00	**.499** (.427-.583)	**.530** (.450-.640)	**.750** (.610-.900)	**1.03** (.880-1.12)	**1.22** (1.03-1.50)	340
	01-02	**.452** (.377-.543)	**.520** (.430-.610)	**.710** (.670-.810)	**1.07** (.940-1.21)	**1.32** (1.17-1.53)	368
	03-04	**.454** (.393-.523)	**.460** (.410-.520)	**.750** (.590-.900)	**1.24** (.910-1.47)	**1.68** (1.26-1.81)	290
	05-06	**.424** (.383-.468)	**.450** (.410-.490)	**.660** (.580-.710)	**.870** (.830-1.04)	**1.16** (.910-1.39)	355
	07-08	**.433** (.367-.509)	**.450** (.360-.550)	**.700** (.560-.810)	**.960** (.790-1.28)	**1.40** (.880-1.82)	394
	09-10	**.424** (.379-.474)	**.440** (.400-.490)	**.670** (.610-.740)	**.960** (.850-1.10)	**1.14** (1.01-1.69)	378
12-19 years	99-00	**.519** (.463-.581)	**.520** (.490-.570)	**.820** (.670-.890)	**1.17** (1.01-1.47)	**1.52** (1.26-2.56)	719
	01-02	**.515** (.469-.564)	**.520** (.480-.570)	**.750** (.690-.840)	**1.24** (1.07-1.32)	**1.59** (1.37-1.99)	762
	03-04	**.461** (.428-.496)	**.480** (.450-.520)	**.740** (.650-.800)	**1.03** (.940-1.23)	**1.60** (1.14-1.92)	725
	05-06	**.510** (.451-.577)	**.500** (.460-.570)	**.820** (.690-.980)	**1.30** (1.08-1.40)	**1.74** (1.39-2.08)	701
	07-08	**.529** (.478-.585)	**.510** (.450-.570)	**.820** (.690-.960)	**1.36** (1.09-1.53)	**1.70** (1.40-1.78)	376
	09-10	**.465** (.406-.533)	**.460** (.430-.530)	**.830** (.710-.920)	**1.21** (1.05-1.51)	**1.56** (1.19-2.11)	451
20 years and older	99-00	**.343** (.305-.386)	**.370** (.330-.420)	**.570** (.520-.640)	**.880** (.810-.980)	**1.28** (1.07-1.39)	1406
	01-02	**.352** (.333-.373)	**.380** (.350-.410)	**.560** (.520-.590)	**.860** (.800-.930)	**1.15** (1.04-1.42)	1560
	03-04	**.285** (.259-.313)	**.300** (.270-.330)	**.460** (.410-.510)	**.690** (.660-.730)	**1.06** (.890-1.14)	1543
	05-06	**.351** (.332-.371)	**.370** (.350-.390)	**.550** (.520-.600)	**.810** (.760-.880)	**1.30** (1.05-1.47)	1520
	07-08	**.343** (.326-.362)	**.350** (.340-.370)	**.530** (.500-.560)	**.830** (.750-.920)	**1.20** (1.00-1.38)	1857
	09-10	**.351** (.322-.382)	**.350** (.330-.380)	**.570** (.520-.630)	**.890** (.800-1.02)	**1.35** (1.12-1.58)	2019
Gender							
Males	99-00	**.371** (.331-.416)	**.410** (.370-.450)	**.580** (.540-.640)	**.820** (.740-.900)	**1.01** (.900-1.12)	1227
	01-02	**.367** (.338-.399)	**.390** (.360-.420)	**.550** (.520-.600)	**.790** (.740-.850)	**1.05** (.960-1.14)	1335
	03-04	**.294** (.270-.319)	**.320** (.290-.340)	**.480** (.440-.500)	**.670** (.620-.710)	**.870** (.790-.920)	1281
	05-06	**.369** (.354-.383)	**.380** (.370-.400)	**.540** (.510-.570)	**.760** (.690-.850)	**1.06** (.910-1.27)	1271
	07-08	**.350** (.330-.371)	**.370** (.350-.390)	**.530** (.500-.560)	**.750** (.690-.820)	**1.00** (.860-1.14)	1327
	09-10	**.336** (.307-.368)	**.360** (.330-.380)	**.530** (.480-.570)	**.750** (.690-.850)	**.960** (.850-1.12)	1398
Females	99-00	**.379** (.333-.431)	**.410** (.340-.460)	**.680** (.590-.790)	**1.17** (.930-1.36)	**1.50** (1.28-2.05)	1238
	01-02	**.390** (.364-.417)	**.430** (.400-.450)	**.670** (.620-.700)	**1.06** (.980-1.16)	**1.46** (1.22-1.81)	1355
	03-04	**.339** (.308-.372)	**.340** (.310-.370)	**.580** (.540-.610)	**1.04** (.900-1.13)	**1.47** (1.33-1.73)	1277
	05-06	**.379** (.351-.409)	**.410** (.370-.440)	**.660** (.620-.700)	**1.04** (.900-1.21)	**1.54** (1.30-1.93)	1305
	07-08	**.389** (.367-.411)	**.390** (.360-.410)	**.650** (.590-.690)	**1.08** (.980-1.26)	**1.43** (1.34-1.62)	1300
	09-10	**.403** (.364-.447)	**.400** (.360-.440)	**.700** (.640-.770)	**1.19** (1.05-1.36)	**1.68** (1.51-2.11)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.07, 0.07, 0.08, 0.041, 0.041, and 0.041 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Urinary Cobalt (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.418** (.348-.502)	**.470** (.370-.530)	**.670** (.630-.770)	**1.05** (.950-1.19)	**1.47** (1.25-1.67)	884
	01-02	**.398** (.373-.424)	**.430** (.410-.450)	**.650** (.600-.710)	**.950** (.850-1.03)	**1.20** (1.06-1.48)	683
	03-04	**.374** (.350-.398)	**.350** (.340-.390)	**.580** (.530-.620)	**1.09** (.920-1.16)	**1.33** (1.16-1.73)	618
	05-06	**.437** (.404-.473)	**.450** (.420-.500)	**.680** (.620-.720)	**1.11** (.940-1.30)	**1.58** (1.33-1.79)	652
	07-08	**.396** (.349-.450)	**.400** (.330-.480)	**.610** (.560-.710)	**.980** (.870-1.08)	**1.26** (1.05-1.69)	515
	09-10	**.378** (.351-.407)	**.380** (.360-.410)	**.590** (.560-.640)	**.920** (.860-1.04)	**1.24** (1.04-1.58)	613
Non-Hispanic blacks	99-00	**.434** (.405-.465)	**.430** (.390-.470)	**.680** (.620-.760)	**1.17** (1.04-1.26)	**1.45** (1.23-2.04)	568
	01-02	**.435** (.388-.487)	**.420** (.380-.460)	**.650** (.540-.810)	**1.16** (.850-1.64)	**1.75** (1.32-2.22)	667
	03-04	**.380** (.348-.414)	**.380** (.360-.410)	**.600** (.540-.680)	**1.01** (.890-1.09)	**1.28** (1.01-2.03)	723
	05-06	**.412** (.374-.453)	**.410** (.360-.440)	**.600** (.560-.670)	**.930** (.830-1.11)	**1.47** (1.12-2.00)	692
	07-08	**.403** (.367-.443)	**.390** (.360-.420)	**.620** (.560-.740)	**1.06** (.880-1.31)	**1.57** (1.22-1.86)	589
	09-10	**.368** (.335-.403)	**.380** (.340-.400)	**.590** (.520-.650)	**.990** (.870-1.15)	**1.47** (1.20-1.58)	544
Non-Hispanic whites	99-00	**.369** (.316-.431)	**.410** (.350-.460)	**.630** (.550-.700)	**.930** (.830-1.08)	**1.29** (1.02-1.65)	822
	01-02	**.359** (.327-.394)	**.390** (.360-.430)	**.590** (.520-.660)	**.870** (.800-.950)	**1.16** (1.04-1.32)	1132
	03-04	**.301** (.270-.334)	**.310** (.280-.340)	**.500** (.460-.540)	**.760** (.690-.850)	**1.09** (.950-1.26)	1074
	05-06	**.361** (.340-.384)	**.380** (.360-.410)	**.580** (.530-.630)	**.860** (.800-.940)	**1.30** (1.06-1.50)	1041
	07-08	**.358** (.338-.379)	**.370** (.350-.390)	**.560** (.520-.600)	**.900** (.780-1.00)	**1.32** (1.02-1.46)	1095
	09-10	**.369** (.335-.408)	**.370** (.350-.400)	**.600** (.540-.660)	**.970** (.850-1.10)	**1.40** (1.17-1.64)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.07, 0.07, 0.08, 0.041, 0.041, and 0.041 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Urinary Cobalt (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.326** (.309-.344)	**.323** (.306-.347)	**.543** (.510-.577)	**.860** (.800-.979)	**1.27** (1.09-1.45)	2504
Age group							
6-11 years	11-12	**.397** (.356-.442)	**.452** (.361-.510)	**.704** (.616-.772)	**1.00** (.846-1.38)	**1.42** (1.00-1.78)	399
12-19 years	11-12	**.416** (.358-.484)	**.429** (.341-.527)	**.700** (.622-.806)	**1.12** (.960-1.30)	**1.56** (1.16-1.96)	390
20 years and older	11-12	**.307** (.288-.327)	**.308** (.289-.328)	**.491** (.457-.534)	**.800** (.695-.940)	**1.16** (.984-1.36)	1715
Gender							
Males	11-12	**.317** (.299-.336)	**.316** (.293-.339)	**.496** (.452-.547)	**.715** (.659-.798)	**.963** (.858-1.03)	1262
Females	11-12	**.335** (.310-.361)	**.340** (.308-.382)	**.591** (.554-.643)	**1.07** (.891-1.20)	**1.49** (1.30-1.74)	1242
Race/ethnicity							
Mexican Americans	11-12	**.350** (.322-.381)	**.350** (.307-.377)	**.550** (.490-.598)	**.891** (.721-1.18)	**1.41** (1.14-2.08)	317
Non-Hispanic blacks	11-12	**.340** (.311-.373)	**.333** (.304-.358)	**.519** (.489-.576)	**.909** (.790-.986)	**1.44** (1.06-1.60)	669
Non-Hispanic whites	11-12	**.320** (.295-.348)	**.320** (.296-.357)	**.543** (.485-.591)	**.858** (.750-.995)	**1.20** (1.03-1.35)	820
All Hispanics	11-12	**.338** (.321-.357)	**.326** (.306-.350)	**.530** (.490-.583)	**.891** (.763-1.14)	**1.41** (1.10-1.81)	573
Asians	11-12	**.317** (.282-.357)	**.323** (.300-.355)	**.519** (.445-.634)	**.968** (.723-1.58)	**1.78** (.980-2.31)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.048.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Urinary Cobalt (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.353** (.319-.391)	**.328** (.302-.365)	**.515** (.457-.581)	**.821** (.679-.963)	**1.16** (.938-1.50)	2465
	01-02	**.358** (.333-.384)	**.335** (.313-.360)	**.523** (.487-.562)	**.844** (.750-.955)	**1.16** (1.00-1.28)	2689
	03-04	**.314** (.303-.325)	**.290** (.278-.306)	**.455** (.434-.481)	**.737** (.703-.781)	**1.02** (.911-1.10)	2558
	05-06	**.368** (.353-.384)	**.340** (.320-.360)	**.520** (.490-.550)	**.810** (.750-.920)	**1.17** (.990-1.27)	2576
	07-08	**.385** (.366-.406)	**.360** (.350-.380)	**.560** (.520-.590)	**.870** (.760-.990)	**1.22** (1.01-1.46)	2627
	09-10	**.393** (.372-.415)	**.370** (.350-.390)	**.560** (.530-.600)	**.890** (.830-.940)	**1.29** (1.08-1.49)	2848
Age group							
6-11 years	99-00	**.547** (.467-.640)	**.554** (.449-.647)	**.774** (.626-.938)	**1.00** (.833-1.49)	**1.25** (.895-1.50)	340
	01-02	**.552** (.508-.599)	**.548** (.503-.609)	**.756** (.660-.829)	**1.00** (.900-1.27)	**1.30** (1.03-1.73)	368
	03-04	**.529** (.471-.593)	**.500** (.463-.543)	**.689** (.634-.750)	**1.04** (.760-1.29)	**1.29** (1.04-1.36)	290
	05-06	**.523** (.494-.554)	**.520** (.480-.570)	**.720** (.660-.760)	**.900** (.840-1.04)	**1.27** (.980-1.45)	355
	07-08	**.564** (.501-.635)	**.580** (.500-.630)	**.760** (.660-.910)	**1.12** (.830-1.46)	**1.39** (1.06-1.81)	394
	09-10	**.578** (.538-.620)	**.570** (.530-.620)	**.760** (.690-.840)	**1.06** (.920-1.21)	**1.26** (1.06-1.58)	378
12-19 years	99-00	**.391** (.353-.433)	**.378** (.329-.407)	**.537** (.469-.595)	**.824** (.638-1.17)	**1.44** (.821-3.54)	719
	01-02	**.368** (.343-.396)	**.352** (.327-.372)	**.534** (.471-.611)	**.851** (.673-.949)	**1.06** (.932-1.24)	762
	03-04	**.329** (.304-.355)	**.316** (.277-.348)	**.495** (.442-.561)	**.738** (.630-.847)	**.952** (.792-1.09)	725
	05-06	**.392** (.360-.427)	**.360** (.330-.400)	**.530** (.480-.620)	**.810** (.720-.920)	**1.02** (.870-1.48)	701
	07-08	**.414** (.382-.448)	**.390** (.340-.450)	**.610** (.520-.700)	**.880** (.750-1.13)	**1.17** (.890-1.35)	376
	09-10	**.435** (.398-.476)	**.410** (.370-.470)	**.610** (.550-.700)	**.960** (.790-1.07)	**1.30** (1.00-1.53)	451
20 years and older	99-00	**.328** (.297-.362)	**.306** (.280-.328)	**.471** (.428-.522)	**.727** (.632-.905)	**1.12** (.861-1.36)	1406
	01-02	**.337** (.313-.363)	**.313** (.294-.337)	**.475** (.435-.513)	**.792** (.704-.955)	**1.15** (.963-1.33)	1559
	03-04	**.293** (.282-.304)	**.271** (.257-.286)	**.400** (.380-.429)	**.691** (.616-.744)	**.976** (.829-1.10)	1543
	05-06	**.350** (.334-.367)	**.320** (.300-.340)	**.490** (.450-.520)	**.780** (.690-.940)	**1.17** (.970-1.31)	1520
	07-08	**.366** (.348-.384)	**.340** (.330-.360)	**.510** (.480-.540)	**.830** (.720-.960)	**1.19** (.980-1.47)	1857
	09-10	**.371** (.350-.394)	**.340** (.320-.360)	**.520** (.490-.550)	**.840** (.750-.930)	**1.29** (1.02-1.52)	2019
Gender							
Males	99-00	**.290** (.259-.324)	**.279** (.248-.301)	**.402** (.365-.449)	**.608** (.534-.728)	**.838** (.667-1.10)	1227
	01-02	**.290** (.272-.310)	**.278** (.256-.297)	**.392** (.361-.425)	**.644** (.574-.707)	**.848** (.786-.929)	1334
	03-04	**.247** (.237-.259)	**.234** (.215-.250)	**.333** (.313-.352)	**.513** (.476-.585)	**.700** (.630-.753)	1281
	05-06	**.302** (.289-.317)	**.290** (.270-.300)	**.410** (.370-.440)	**.610** (.580-.640)	**.770** (.710-.850)	1271
	07-08	**.313** (.298-.329)	**.300** (.280-.310)	**.420** (.400-.440)	**.630** (.580-.680)	**.830** (.680-1.02)	1327
	09-10	**.306** (.290-.323)	**.290** (.280-.300)	**.420** (.390-.450)	**.630** (.570-.690)	**.810** (.720-.920)	1398
Females	99-00	**.426** (.378-.479)	**.407** (.362-.457)	**.606** (.550-.694)	**.960** (.781-1.29)	**1.50** (1.11-1.83)	1238
	01-02	**.435** (.404-.468)	**.408** (.382-.438)	**.635** (.560-.708)	**1.00** (.879-1.19)	**1.29** (1.12-1.60)	1355
	03-04	**.393** (.378-.409)	**.361** (.342-.381)	**.554** (.513-.615)	**.937** (.850-1.00)	**1.29** (1.10-1.33)	1277
	05-06	**.445** (.423-.468)	**.420** (.400-.440)	**.630** (.590-.700)	**.990** (.900-1.17)	**1.34** (1.18-1.60)	1305
	07-08	**.470** (.442-.499)	**.450** (.430-.480)	**.690** (.630-.750)	**1.09** (.930-1.27)	**1.46** (1.26-1.69)	1300
	09-10	**.498** (.465-.534)	**.460** (.450-.480)	**.690** (.650-.720)	**1.09** (.990-1.33)	**1.64** (1.34-2.15)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Urinary Cobalt (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.386** (.339-.439)	**.376** (.333-.419)	**.598** (.500-.669)	**.898** (.826-1.00)	**1.23** (1.11-1.35)	884
	01-02	**.388** (.361-.417)	**.361** (.333-.394)	**.591** (.500-.662)	**.872** (.777-.990)	**1.10** (.990-1.27)	682
	03-04	**.346** (.326-.368)	**.327** (.296-.349)	**.542** (.487-.594)	**.850** (.753-.963)	**1.14** (.963-1.35)	618
	05-06	**.411** (.388-.436)	**.380** (.360-.400)	**.580** (.520-.650)	**.900** (.820-1.02)	**1.19** (1.05-1.35)	652
	07-08	**.396** (.348-.450)	**.370** (.330-.410)	**.560** (.470-.690)	**.900** (.770-1.12)	**1.17** (.990-1.54)	515
	09-10	**.396** (.367-.427)	**.380** (.340-.420)	**.590** (.530-.650)	**.930** (.820-1.03)	**1.22** (1.04-1.30)	613
Non-Hispanic blacks	99-00	**.282** (.275-.289)	**.257** (.243-.279)	**.417** (.378-.462)	**.723** (.600-.785)	**.975** (.757-1.60)	568
	01-02	**.298** (.275-.323)	**.268** (.251-.296)	**.444** (.393-.505)	**.728** (.582-.917)	**1.03** (.740-1.55)	667
	03-04	**.273** (.248-.300)	**.259** (.239-.281)	**.388** (.344-.461)	**.700** (.563-.842)	**.964** (.733-1.15)	723
	05-06	**.299** (.281-.318)	**.280** (.240-.300)	**.420** (.380-.460)	**.700** (.570-.780)	**.950** (.790-1.17)	692
	07-08	**.295** (.277-.314)	**.270** (.260-.290)	**.420** (.390-.450)	**.710** (.570-.860)	**1.07** (.850-1.28)	589
	09-10	**.291** (.271-.314)	**.280** (.240-.310)	**.420** (.380-.480)	**.700** (.610-.750)	**.840** (.750-1.06)	544
Non-Hispanic whites	99-00	**.369** (.324-.421)	**.352** (.313-.387)	**.533** (.452-.611)	**.861** (.667-1.16)	**1.25** (.895-1.57)	822
	01-02	**.362** (.331-.396)	**.343** (.313-.368)	**.523** (.479-.562)	**.830** (.736-.983)	**1.16** (.983-1.33)	1132
	03-04	**.317** (.301-.334)	**.291** (.274-.309)	**.457** (.425-.488)	**.738** (.683-.804)	**1.00** (.857-1.13)	1074
	05-06	**.376** (.357-.395)	**.350** (.330-.370)	**.520** (.490-.580)	**.810** (.710-.950)	**1.18** (.950-1.43)	1041
	07-08	**.401** (.380-.423)	**.380** (.360-.400)	**.590** (.530-.630)	**.890** (.760-1.06)	**1.27** (.980-1.55)	1095
	09-10	**.413** (.388-.440)	**.390** (.360-.410)	**.580** (.530-.620)	**.910** (.830-.980)	**1.33** (1.08-1.58)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Urinary Cobalt (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.370** (.349-.391)	**.347** (.330-.371)	**.557** (.513-.593)	**.880** (.768-1.03)	**1.29** (1.12-1.46)	2502
Age group							
6-11 years	11-12	**.567** (.535-.602)	**.571** (.526-.611)	**.778** (.713-.834)	**1.19** (.974-1.30)	**1.38** (1.10-1.67)	398
12-19 years	11-12	**.398** (.349-.455)	**.373** (.316-.441)	**.585** (.454-.700)	**.832** (.688-1.09)	**1.26** (.830-2.77)	390
20 years and older	11-12	**.349** (.330-.369)	**.327** (.300-.341)	**.508** (.467-.552)	**.803** (.711-.982)	**1.24** (1.10-1.50)	1714
Gender							
Males	11-12	**.297** (.280-.315)	**.276** (.254-.294)	**.426** (.397-.456)	**.637** (.564-.750)	**.865** (.748-1.17)	1261
Females	11-12	**.455** (.418-.496)	**.433** (.407-.466)	**.660** (.600-.729)	**1.10** (.900-1.36)	**1.54** (1.28-1.84)	1241
Race/ethnicity							
Mexican Americans	11-12	**.394** (.357-.435)	**.374** (.322-.400)	**.576** (.531-.637)	**1.02** (.877-1.24)	**1.50** (.988-2.02)	317
Non-Hispanic blacks	11-12	**.265** (.248-.282)	**.244** (.222-.267)	**.401** (.342-.457)	**.645** (.559-.816)	**1.02** (.737-1.41)	669
Non-Hispanic whites	11-12	**.387** (.360-.417)	**.365** (.336-.400)	**.574** (.513-.615)	**.860** (.749-1.09)	**1.29** (1.04-1.57)	818
All Hispanics	11-12	**.379** (.351-.409)	**.361** (.322-.384)	**.572** (.520-.626)	**.944** (.809-1.15)	**1.33** (1.13-1.91)	573
Asians	11-12	**.424** (.378-.475)	**.386** (.329-.457)	**.659** (.531-.785)	**1.18** (.907-1.51)	**1.61** (1.14-2.72)	353

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Serum Copper (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/dL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**114** (111-116)	**112** (109-114)	**130** (127-134)	**152** (145-162)	**169** (161-183)	2329
Age group							
6-11 years	11-12	**120** (117-124)	**121** (115-126)	**135** (130-140)	**154** (141-161)	**164** (154-175)	316
12-19 years	11-12	**106** (103-110)	**103** (99.7-106)	**120** (115-125)	**143** (130-161)	**169** (141-199)	366
20 years and older	11-12	**114** (111-117)	**112** (109-115)	**131** (127-136)	**153** (145-164)	**171** (162-184)	1647
Gender							
Males	11-12	**103** (101-106)	**103** (101-105)	**116** (114-119)	**132** (126-139)	**143** (135-155)	1162
Females	11-12	**124** (121-127)	**123** (119-125)	**142** (137-147)	**165** (160-172)	**187** (173-207)	1167
Race/ethnicity							
Mexican Americans	11-12	**111** (107-116)	**109** (105-115)	**125** (122-131)	**144** (137-152)	**156** (148-164)	285
Non-Hispanic blacks	11-12	**126** (122-130)	**127** (121-130)	**147** (142-151)	**168** (161-180)	**191** (176-214)	620
Non-Hispanic whites	11-12	**113** (110-115)	**111** (109-113)	**128** (125-132)	**150** (141-163)	**169** (155-192)	780
All Hispanics	11-12	**112** (108-115)	**109** (106-115)	**128** (124-132)	**145** (139-152)	**158** (151-164)	525
Asians	11-12	**105** (102-109)	**101** (96.2-107)	**120** (114-125)	**143** (132-151)	**166** (150-198)	323

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.5.

Blood Lead (1999 – 2010)

Geometric mean and selected percentiles of blood concentrations (in µg/dL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.66** (1.60-1.72)	**1.60** (1.60-1.70)	**2.50** (2.40-2.60)	**3.80** (3.60-4.00)	**5.00** (4.70-5.50)	7970
	01-02	**1.45** (1.39-1.51)	**1.40** (1.40-1.50)	**2.20** (2.10-2.30)	**3.40** (3.20-3.60)	**4.50** (4.20-4.70)	8945
	03-04	**1.43** (1.36-1.50)	**1.40** (1.30-1.50)	**2.10** (2.10-2.20)	**3.20** (3.10-3.30)	**4.20** (3.90-4.40)	8373
	05-06	**1.29** (1.23-1.36)	**1.27** (1.20-1.34)	**2.01** (1.91-2.11)	**3.05** (2.86-3.22)	**3.91** (3.64-4.18)	8407
	07-08	**1.27** (1.21-1.34)	**1.22** (1.18-1.30)	**1.90** (1.80-2.00)	**2.80** (2.67-2.96)	**3.70** (3.50-3.90)	8266
	09-10	**1.12** (1.08-1.16)	**1.07** (1.03-1.12)	**1.70** (1.62-1.77)	**2.58** (2.45-2.71)	**3.34** (3.14-3.57)	8793
Age group							
1-5 years	99-00	**2.23** (1.96-2.53)	**2.20** (1.90-2.50)	**3.40** (2.80-3.90)	**4.90** (4.00-6.60)	**7.00** (6.10-8.30)	723
	01-02	**1.70** (1.55-1.87)	**1.60** (1.50-1.80)	**2.50** (2.20-2.90)	**4.20** (3.50-5.20)	**5.80** (4.70-6.90)	898
	03-04	**1.77** (1.60-1.95)	**1.70** (1.50-1.90)	**2.50** (2.30-2.80)	**3.90** (3.30-4.60)	**5.10** (4.10-6.60)	911
	05-06	**1.46** (1.36-1.57)	**1.43** (1.34-1.55)	**2.10** (1.97-2.20)	**2.98** (2.72-3.32)	**3.80** (3.49-4.54)	968
	07-08	**1.51** (1.37-1.66)	**1.43** (1.30-1.60)	**2.20** (1.98-2.31)	**3.20** (2.65-3.85)	**4.10** (3.40-5.19)	817
	09-10	**1.17** (1.08-1.26)	**1.15** (1.03-1.27)	**1.70** (1.50-1.87)	**2.39** (2.08-2.65)	**3.37** (2.63-4.11)	836
6-11 years	99-00	**1.51** (1.36-1.66)	**1.40** (1.30-1.60)	**2.10** (1.80-2.50)	**3.30** (2.80-3.80)	**4.50** (3.40-6.20)	905
	01-02	**1.25** (1.14-1.36)	**1.20** (1.00-1.30)	**1.70** (1.60-2.00)	**2.80** (2.50-3.10)	**3.70** (3.00-4.70)	1044
	03-04	**1.25** (1.12-1.39)	**1.20** (1.10-1.40)	**1.80** (1.50-2.10)	**2.60** (2.10-3.10)	**3.30** (2.50-4.60)	856
	05-06	**1.02** (.948-1.10)	**.970** (.890-1.01)	**1.40** (1.28-1.55)	**2.06** (1.80-2.72)	**3.00** (2.26-3.81)	934
	07-08	**.988** (.914-1.07)	**.960** (.880-1.07)	**1.31** (1.22-1.49)	**1.90** (1.70-2.11)	**2.50** (2.10-2.88)	1011
	09-10	**.838** (.792-.887)	**.810** (.740-.840)	**1.13** (1.06-1.21)	**1.64** (1.45-1.84)	**2.01** (1.88-2.25)	1009
12-19 years	99-00	**1.10** (1.04-1.17)	**1.10** (1.00-1.20)	**1.50** (1.40-1.70)	**2.30** (2.10-2.40)	**2.90** (2.70-3.00)	2135
	01-02	**.942** (.899-.986)	**.900** (.900-1.00)	**1.30** (1.20-1.40)	**2.00** (1.90-2.10)	**2.70** (2.40-2.90)	2231
	03-04	**.946** (.878-1.02)	**.900** (.800-1.00)	**1.30** (1.20-1.40)	**1.90** (1.70-2.10)	**2.60** (2.20-3.00)	2081
	05-06	**.797** (.746-.852)	**.740** (.690-.790)	**1.08** (.990-1.20)	**1.69** (1.50-1.85)	**2.23** (1.98-2.46)	1996
	07-08	**.800** (.744-.859)	**.760** (.720-.820)	**1.04** (.980-1.16)	**1.50** (1.35-1.70)	**1.90** (1.70-2.32)	1074
	09-10	**.680** (.636-.727)	**.660** (.590-.700)	**.910** (.840-.990)	**1.29** (1.19-1.43)	**1.72** (1.52-1.86)	1183
20 years and older	99-00	**1.75** (1.68-1.81)	**1.70** (1.60-1.80)	**2.60** (2.50-2.70)	**3.90** (3.70-4.10)	**5.20** (4.80-5.60)	4207
	01-02	**1.56** (1.49-1.62)	**1.60** (1.50-1.60)	**2.30** (2.30-2.40)	**3.60** (3.40-3.70)	**4.60** (4.30-5.00)	4772
	03-04	**1.52** (1.45-1.60)	**1.50** (1.40-1.60)	**2.30** (2.20-2.40)	**3.30** (3.20-3.50)	**4.30** (4.00-4.60)	4525
	05-06	**1.41** (1.34-1.48)	**1.41** (1.33-1.48)	**2.17** (2.04-2.31)	**3.22** (3.05-3.43)	**4.12** (3.82-4.38)	4509
	07-08	**1.38** (1.31-1.46)	**1.34** (1.26-1.42)	**2.06** (1.94-2.18)	**3.00** (2.80-3.14)	**3.90** (3.68-4.23)	5364
	09-10	**1.23** (1.19-1.28)	**1.20** (1.14-1.25)	**1.85** (1.78-1.93)	**2.77** (2.60-2.93)	**3.57** (3.29-3.84)	5765
Gender							
Males	99-00	**2.01** (1.93-2.09)	**1.90** (1.90-2.00)	**2.90** (2.80-3.00)	**4.50** (4.10-4.80)	**6.00** (5.50-6.50)	3913
	01-02	**1.78** (1.71-1.86)	**1.80** (1.70-1.80)	**2.70** (2.50-2.80)	**3.90** (3.80-4.10)	**5.40** (5.00-5.50)	4339
	03-04	**1.69** (1.62-1.75)	**1.60** (1.50-1.70)	**2.50** (2.40-2.60)	**3.70** (3.40-3.90)	**4.80** (4.50-5.20)	4132
	05-06	**1.52** (1.42-1.62)	**1.49** (1.41-1.58)	**2.30** (2.12-2.51)	**3.48** (3.20-3.75)	**4.36** (4.04-4.76)	4092
	07-08	**1.47** (1.39-1.56)	**1.40** (1.32-1.50)	**2.17** (2.00-2.30)	**3.21** (3.01-3.53)	**4.41** (4.10-4.88)	4147
	09-10	**1.31** (1.25-1.36)	**1.26** (1.20-1.32)	**1.96** (1.89-2.03)	**2.93** (2.72-3.15)	**3.84** (3.54-4.39)	4366
Females	99-00	**1.37** (1.32-1.43)	**1.30** (1.30-1.40)	**2.00** (1.90-2.10)	**3.10** (2.90-3.30)	**4.00** (3.80-4.20)	4057
	01-02	**1.19** (1.14-1.25)	**1.20** (1.10-1.20)	**1.80** (1.70-1.90)	**2.60** (2.50-2.80)	**3.60** (3.10-4.00)	4606
	03-04	**1.22** (1.14-1.31)	**1.20** (1.10-1.30)	**1.80** (1.70-2.00)	**2.70** (2.50-3.00)	**3.50** (3.10-3.80)	4241
	05-06	**1.11** (1.05-1.17)	**1.06** (.980-1.15)	**1.73** (1.61-1.84)	**2.59** (2.44-2.74)	**3.25** (3.12-3.44)	4315
	07-08	**1.11** (1.06-1.16)	**1.09** (1.00-1.14)	**1.64** (1.54-1.74)	**2.41** (2.35-2.50)	**3.00** (2.81-3.20)	4119
	09-10	**.966** (.929-1.01)	**.940** (.890-.970)	**1.43** (1.36-1.53)	**2.18** (2.08-2.30)	**2.81** (2.63-2.93)	4427

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.3, 0.3, 0.28, 0.25, 0.25, and 0.25 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Blood Lead (1999 – 2010)

Geometric mean and selected percentiles of blood concentrations (in µg/dL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.83** (1.75-1.91)	**1.80** (1.70-1.90)	**2.80** (2.60-2.90)	**4.20** (3.90-4.60)	**5.80** (5.10-6.60)	2742
	01-02	**1.46** (1.34-1.60)	**1.50** (1.30-1.60)	**2.30** (2.10-2.60)	**3.60** (3.40-4.20)	**5.40** (4.40-6.70)	2268
	03-04	**1.55** (1.43-1.69)	**1.50** (1.40-1.60)	**2.30** (2.10-2.50)	**3.50** (2.90-4.20)	**4.90** (3.90-6.40)	2085
	05-06	**1.29** (1.21-1.38)	**1.26** (1.15-1.36)	**2.00** (1.87-2.20)	**3.16** (2.79-3.58)	**4.22** (3.47-5.36)	2236
	07-08	**1.25** (1.15-1.36)	**1.20** (1.10-1.31)	**1.88** (1.70-2.06)	**2.81** (2.60-3.20)	**3.92** (3.20-5.00)	1712
	09-10	**1.14** (1.03-1.28)	**1.04** (.940-1.18)	**1.76** (1.52-1.99)	**2.93** (2.63-3.30)	**3.92** (3.60-4.69)	1966
Non-Hispanic blacks	99-00	**1.87** (1.75-2.00)	**1.80** (1.70-2.00)	**2.80** (2.60-3.00)	**4.30** (4.00-4.60)	**5.70** (5.20-6.10)	1842
	01-02	**1.65** (1.52-1.80)	**1.60** (1.40-1.70)	**2.60** (2.30-2.90)	**4.20** (3.80-4.70)	**5.80** (5.30-6.50)	2219
	03-04	**1.69** (1.52-1.89)	**1.60** (1.40-1.80)	**2.60** (2.20-3.00)	**4.10** (3.50-4.70)	**5.30** (4.60-6.60)	2293
	05-06	**1.39** (1.26-1.53)	**1.31** (1.19-1.45)	**2.16** (1.95-2.42)	**3.48** (3.19-3.80)	**4.65** (4.21-5.14)	2193
	07-08	**1.39** (1.30-1.48)	**1.30** (1.20-1.42)	**2.10** (2.00-2.20)	**3.22** (3.08-3.50)	**4.50** (4.00-4.80)	1746
	09-10	**1.24** (1.18-1.30)	**1.19** (1.12-1.25)	**1.87** (1.76-1.99)	**2.90** (2.68-3.18)	**3.86** (3.57-4.29)	1593
Non-Hispanic whites	99-00	**1.62** (1.55-1.69)	**1.60** (1.50-1.70)	**2.40** (2.30-2.50)	**3.60** (3.40-3.90)	**5.00** (4.40-5.70)	2716
	01-02	**1.43** (1.37-1.48)	**1.40** (1.30-1.50)	**2.20** (2.10-2.20)	**3.20** (3.10-3.40)	**4.20** (3.90-4.50)	3806
	03-04	**1.37** (1.32-1.43)	**1.30** (1.30-1.40)	**2.10** (2.00-2.10)	**3.00** (2.80-3.20)	**3.90** (3.60-4.30)	3478
	05-06	**1.28** (1.19-1.37)	**1.27** (1.17-1.38)	**1.97** (1.86-2.14)	**2.99** (2.73-3.25)	**3.82** (3.41-4.20)	3310
	07-08	**1.24** (1.16-1.33)	**1.20** (1.10-1.30)	**1.86** (1.72-2.00)	**2.70** (2.54-2.90)	**3.50** (3.20-3.89)	3461
	09-10	**1.10** (1.04-1.16)	**1.07** (1.00-1.15)	**1.67** (1.59-1.76)	**2.49** (2.35-2.63)	**3.14** (2.99-3.36)	3760

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.3, 0.3, 0.28, 0.25, 0.25, and 0.25 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Blood Lead (2011 - 2012)

Geometric mean and selected percentiles of blood concentrations (in µg/dL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.973** (.916-1.04)	**.930** (.880-.980)	**1.52** (1.41-1.61)	**2.38** (2.17-2.61)	**3.16** (2.77-3.68)	7920
Gender							
Males	11-12	**1.13** (1.06-1.21)	**1.07** (1.01-1.14)	**1.74** (1.63-1.88)	**2.73** (2.48-3.01)	**3.68** (3.18-4.22)	3968
Females	11-12	**.842** (.796-.890)	**.820** (.780-.860)	**1.30** (1.22-1.39)	**1.98** (1.83-2.22)	**2.59** (2.32-2.94)	3952
Age group							
1-5 years	11-12	**.970** (.877-1.07)	**.950** (.870-1.04)	**1.34** (1.20-1.65)	**2.26** (1.88-2.65)	**2.91** (2.41-3.83)	713
6-11 years	11-12	**.681** (.623-.744)	**.640** (.600-.700)	**.930** (.820-1.05)	**1.34** (1.14-1.60)	**1.89** (1.36-2.94)	1048
12-19 years	11-12	**.554** (.511-.601)	**.530** (.490-.570)	**.740** (.660-.830)	**1.09** (.960-1.19)	**1.31** (1.16-1.65)	1129
20 years and older	11-12	**1.09** (1.03-1.16)	**1.05** (1.00-1.12)	**1.67** (1.56-1.79)	**2.56** (2.33-2.77)	**3.36** (2.98-3.93)	5030
Race/ethnicity							
Mexican Americans	11-12	**.838** (.767-.916)	**.780** (.690-.880)	**1.27** (1.15-1.40)	**2.05** (1.81-2.36)	**3.06** (2.34-3.59)	1077
Non-Hispanic blacks	11-12	**.998** (.947-1.05)	**.910** (.850-.990)	**1.53** (1.45-1.60)	**2.58** (2.31-2.91)	**3.72** (3.04-4.58)	2195
Non-Hispanic whites	11-12	**.993** (.914-1.08)	**.960** (.880-1.03)	**1.56** (1.40-1.73)	**2.43** (2.11-2.74)	**3.14** (2.67-3.85)	2493
All Hispanics	11-12	**.855** (.793-.922)	**.820** (.750-.880)	**1.27** (1.18-1.39)	**2.00** (1.86-2.23)	**2.84** (2.41-3.34)	1931
Asians	11-12	**1.15** (1.06-1.24)	**1.14** (1.02-1.26)	**1.70** (1.56-1.86)	**2.56** (2.36-2.72)	**3.28** (2.80-3.65)	1005

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.25.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Lead (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.766** (.708-.828)	**.800** (.800-.900)	**1.40** (1.30-1.50)	**2.20** (2.00-2.30)	**2.90** (2.60-3.30)	2465
	01-02	**.677** (.637-.718)	**.700** (.700-.800)	**1.20** (1.20-1.30)	**2.00** (1.90-2.20)	**2.70** (2.50-2.80)	2690
	03-04	**.636** (.595-.680)	**.640** (.580-.690)	**1.04** (.960-1.12)	**1.73** (1.52-1.86)	**2.29** (2.03-2.62)	2558
	05-06	**.554** (.523-.587)	**.570** (.540-.600)	**.990** (.910-1.05)	**1.58** (1.44-1.73)	**2.14** (1.94-2.45)	2576
	07-08	**.493** (.467-.520)	**.500** (.470-.530)	**.850** (.790-.910)	**1.38** (1.23-1.58)	**1.97** (1.75-2.17)	2627
	09-10	**.458** (.441-.476)	**.470** (.450-.480)	**.790** (.750-.830)	**1.24** (1.11-1.38)	**1.65** (1.46-1.84)	2848
Age group							
6-11 years	99-00	**1.07** (.955-1.20)	**1.10** (.900-1.30)	**1.50** (1.40-1.70)	**2.40** (1.80-3.10)	**3.40** (2.40-5.00)	340
	01-02	**.753** (.661-.857)	**.800** (.600-.900)	**1.20** (1.10-1.40)	**2.10** (1.60-2.40)	**2.60** (2.10-3.70)	368
	03-04	**.795** (.671-.941)	**.790** (.640-.900)	**1.35** (.970-1.86)	**2.27** (1.62-4.09)	**3.33** (2.23-4.41)	290
	05-06	**.508** (.447-.579)	**.510** (.440-.560)	**.740** (.620-.980)	**1.33** (1.00-1.86)	**1.90** (1.33-2.60)	355
	07-08	**.494** (.411-.593)	**.520** (.410-.590)	**.790** (.660-.900)	**1.23** (.980-1.73)	**1.90** (1.51-2.18)	394
	09-10	**.443** (.399-.493)	**.460** (.430-.490)	**.710** (.630-.820)	**1.09** (.880-1.33)	**1.40** (1.06-1.82)	378
12-19 years	99-00	**.659** (.579-.749)	**.700** (.600-.800)	**1.10** (.900-1.30)	**1.80** (1.40-2.20)	**2.20** (1.90-2.80)	719
	01-02	**.564** (.526-.605)	**.600** (.500-.600)	**1.00** (.800-1.10)	**1.60** (1.40-1.70)	**2.00** (1.80-2.40)	762
	03-04	**.604** (.553-.660)	**.630** (.570-.680)	**.920** (.810-1.02)	**1.32** (1.14-1.80)	**1.86** (1.44-2.29)	725
	05-06	**.472** (.421-.530)	**.490** (.450-.540)	**.780** (.710-.830)	**1.19** (1.10-1.45)	**1.65** (1.34-1.80)	701
	07-08	**.386** (.346-.431)	**.380** (.350-.410)	**.640** (.560-.720)	**1.03** (.870-1.24)	**1.38** (1.09-1.91)	376
	09-10	**.320** (.283-.361)	**.320** (.270-.370)	**.530** (.460-.630)	**.830** (.710-1.10)	**1.16** (.860-1.37)	451
20 years and older	99-00	**.752** (.691-.818)	**.800** (.700-.900)	**1.40** (1.30-1.50)	**2.20** (2.00-2.40)	**2.90** (2.60-3.30)	1406
	01-02	**.688** (.641-.738)	**.700** (.700-.800)	**1.20** (1.20-1.30)	**2.00** (1.90-2.30)	**2.80** (2.50-2.90)	1560
	03-04	**.625** (.579-.674)	**.620** (.560-.700)	**1.04** (.960-1.11)	**1.70** (1.52-1.80)	**2.21** (2.04-2.49)	1543
	05-06	**.574** (.539-.612)	**.600** (.560-.640)	**1.02** (.970-1.13)	**1.65** (1.53-1.81)	**2.21** (1.99-2.57)	1520
	07-08	**.512** (.485-.540)	**.530** (.490-.560)	**.900** (.820-.950)	**1.49** (1.29-1.64)	**2.01** (1.78-2.33)	1857
	09-10	**.486** (.465-.507)	**.490** (.470-.520)	**.830** (.780-.880)	**1.32** (1.16-1.46)	**1.71** (1.52-2.03)	2019
Gender							
Males	99-00	**.923** (.822-1.04)	**.900** (.900-1.00)	**1.60** (1.40-1.80)	**2.50** (2.20-2.90)	**3.40** (2.90-3.80)	1227
	01-02	**.808** (.757-.862)	**.800** (.800-.900)	**1.40** (1.30-1.50)	**2.50** (2.20-2.70)	**3.20** (2.90-3.50)	1335
	03-04	**.731** (.680-.785)	**.730** (.680-.800)	**1.17** (1.07-1.27)	**2.03** (1.78-2.22)	**2.66** (2.33-2.91)	1281
	05-06	**.672** (.638-.707)	**.690** (.620-.760)	**1.16** (1.04-1.28)	**1.78** (1.60-2.00)	**2.45** (2.00-2.97)	1271
	07-08	**.560** (.518-.606)	**.570** (.530-.620)	**.930** (.840-1.02)	**1.63** (1.36-1.97)	**2.30** (1.97-3.07)	1327
	09-10	**.527** (.491-.566)	**.540** (.480-.580)	**.880** (.820-.960)	**1.41** (1.25-1.58)	**1.83** (1.62-2.21)	1398
Females	99-00	**.642** (.589-.701)	**.700** (.600-.800)	**1.20** (1.10-1.30)	**1.90** (1.60-2.20)	**2.40** (2.10-3.00)	1238
	01-02	**.573** (.535-.613)	**.600** (.600-.600)	**1.10** (1.00-1.10)	**1.60** (1.50-1.80)	**2.20** (1.90-2.40)	1355
	03-04	**.558** (.506-.616)	**.540** (.480-.620)	**.920** (.820-1.04)	**1.49** (1.24-1.75)	**1.82** (1.59-2.30)	1277
	05-06	**.461** (.425-.499)	**.460** (.430-.510)	**.810** (.730-.880)	**1.27** (1.17-1.46)	**1.86** (1.54-2.17)	1305
	07-08	**.436** (.412-.461)	**.430** (.400-.480)	**.760** (.690-.830)	**1.22** (1.05-1.34)	**1.67** (1.44-1.81)	1300
	09-10	**.400** (.378-.424)	**.420** (.390-.440)	**.690** (.660-.740)	**1.05** (.990-1.13)	**1.42** (1.26-1.59)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.33, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Lead (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.02** (.915-1.13)	**1.10** (.900-1.20)	**1.80** (1.60-1.90)	**2.90** (2.50-3.40)	**4.30** (3.10-5.40)	884
	01-02	**.833** (.745-.931)	**.900** (.700-1.00)	**1.50** (1.20-1.70)	**2.50** (2.00-2.90)	**3.30** (2.70-3.80)	683
	03-04	**.815** (.710-.935)	**.840** (.700-.990)	**1.31** (1.18-1.59)	**2.19** (1.86-2.50)	**2.66** (2.13-3.97)	618
	05-06	**.729** (.653-.815)	**.770** (.680-.860)	**1.32** (1.15-1.59)	**2.22** (1.81-2.64)	**3.08** (2.50-4.03)	652
	07-08	**.607** (.528-.698)	**.610** (.530-.690)	**.990** (.890-1.21)	**1.76** (1.37-2.17)	**2.29** (1.82-2.80)	515
	09-10	**.546** (.483-.618)	**.520** (.460-.580)	**.930** (.800-1.09)	**1.66** (1.34-1.89)	**2.16** (1.80-2.87)	613
Non-Hispanic blacks	99-00	**1.11** (1.00-1.23)	**1.10** (1.00-1.20)	**1.90** (1.50-2.10)	**3.00** (2.40-3.50)	**4.20** (3.30-5.70)	568
	01-02	**.940** (.833-1.06)	**.900** (.800-1.00)	**1.60** (1.30-1.80)	**2.70** (2.10-3.40)	**3.70** (2.90-4.80)	667
	03-04	**.848** (.729-.986)	**.850** (.710-1.00)	**1.40** (1.10-1.72)	**2.14** (1.78-2.64)	**2.82** (2.31-3.89)	723
	05-06	**.666** (.604-.734)	**.660** (.590-.760)	**1.09** (.980-1.18)	**1.62** (1.42-1.85)	**2.24** (1.65-2.90)	692
	07-08	**.618** (.558-.685)	**.620** (.560-.690)	**1.01** (.920-1.13)	**1.56** (1.38-1.90)	**2.06** (1.88-2.60)	589
	09-10	**.560** (.522-.601)	**.550** (.490-.600)	**.910** (.830-1.01)	**1.53** (1.26-1.71)	**1.96** (1.68-2.80)	544
Non-Hispanic whites	99-00	**.695** (.625-.773)	**.700** (.700-.900)	**1.30** (1.10-1.40)	**2.00** (1.80-2.40)	**2.70** (2.30-3.10)	822
	01-02	**.610** (.572-.651)	**.700** (.600-.700)	**1.10** (1.10-1.20)	**1.90** (1.70-2.00)	**2.40** (2.30-2.60)	1132
	03-04	**.591** (.556-.628)	**.590** (.540-.650)	**.960** (.910-.990)	**1.52** (1.40-1.75)	**2.14** (1.78-2.51)	1074
	05-06	**.520** (.477-.566)	**.540** (.490-.580)	**.950** (.820-1.05)	**1.53** (1.30-1.76)	**2.07** (1.78-2.45)	1041
	07-08	**.452** (.422-.485)	**.460** (.430-.490)	**.780** (.700-.880)	**1.23** (1.03-1.50)	**1.79** (1.58-1.97)	1095
	09-10	**.431** (.406-.458)	**.450** (.410-.480)	**.750** (.690-.820)	**1.11** (1.05-1.24)	**1.51** (1.39-1.67)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.33, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Lead (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.360** (.328-.396)	**.370** (.340-.400)	**.650** (.580-.720)	**1.05** (.980-1.17)	**1.49** (1.26-1.75)	2504
Age group							
6-11 years	11-12	**.346** (.292-.410)	**.370** (.300-.440)	**.610** (.540-.770)	**1.12** (.830-1.51)	**1.54** (1.28-1.85)	399
12-19 years	11-12	**.259** (.219-.305)	**.260** (.220-.340)	**.470** (.380-.530)	**.720** (.540-.900)	**.970** (.720-1.17)	390
20 years and older	11-12	**.381** (.348-.416)	**.390** (.360-.420)	**.680** (.640-.730)	**1.11** (1.01-1.21)	**1.58** (1.28-1.90)	1715
Gender							
Males	11-12	**.414** (.367-.466)	**.420** (.380-.460)	**.730** (.640-.800)	**1.16** (.990-1.47)	**1.73** (1.33-2.18)	1262
Females	11-12	**.316** (.282-.355)	**.320** (.290-.360)	**.580** (.500-.660)	**.970** (.830-1.14)	**1.31** (1.15-1.41)	1242
Race/ethnicity							
Mexican Americans	11-12	**.372** (.320-.431)	**.380** (.320-.480)	**.670** (.550-.780)	**1.17** (.820-1.58)	**1.67** (1.17-2.18)	317
Non-Hispanic blacks	11-12	**.431** (.385-.483)	**.440** (.370-.520)	**.730** (.660-.830)	**1.15** (1.00-1.39)	**1.64** (1.39-1.87)	669
Non-Hispanic whites	11-12	**.346** (.311-.385)	**.360** (.330-.390)	**.610** (.540-.700)	**1.02** (.920-1.16)	**1.38** (1.14-1.85)	820
All Hispanics	11-12	**.372** (.327-.423)	**.370** (.320-.420)	**.670** (.590-.750)	**1.15** (.950-1.31)	**1.51** (1.18-2.13)	573
Asians	11-12	**.383** (.341-.429)	**.380** (.350-.460)	**.690** (.620-.790)	**1.15** (.950-1.32)	**1.38** (1.21-1.72)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.08.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Lead (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.721** (.700-.742)	**.701** (.677-.725)	**1.11** (1.05-1.15)	**1.70** (1.62-1.85)	**2.38** (2.22-2.79)	2465
	01-02	**.639** (.603-.677)	**.635** (.588-.676)	**1.03** (.963-1.08)	**1.52** (1.43-1.61)	**2.03** (1.89-2.22)	2689
	03-04	**.632** (.603-.662)	**.622** (.594-.655)	**.979** (.920-1.03)	**1.49** (1.33-1.64)	**1.97** (1.73-2.26)	2558
	05-06	**.546** (.520-.573)	**.530** (.510-.560)	**.860** (.810-.900)	**1.27** (1.15-1.37)	**1.71** (1.50-1.89)	2576
	07-08	**.514** (.482-.548)	**.500** (.460-.530)	**.800** (.720-.880)	**1.30** (1.23-1.42)	**1.85** (1.73-1.96)	2627
	09-10	**.488** (.466-.512)	**.470** (.440-.500)	**.760** (.710-.810)	**1.16** (1.08-1.28)	**1.53** (1.41-1.62)	2848
Age group							
6-11 years	99-00	**1.17** (.975-1.41)	**1.06** (.918-1.22)	**1.55** (1.22-1.97)	**2.71** (1.67-4.66)	**4.66** (1.97-18.0)	340
	01-02	**.918** (.841-1.00)	**.870** (.800-.933)	**1.27** (1.12-1.43)	**2.33** (1.59-3.64)	**3.64** (1.89-5.56)	368
	03-04	**.926** (.812-1.06)	**.914** (.781-1.03)	**1.45** (1.17-1.72)	**2.14** (1.62-3.47)	**3.47** (2.19-5.31)	290
	05-06	**.628** (.563-.701)	**.590** (.530-.680)	**.870** (.770-.940)	**1.29** (1.03-1.82)	**1.96** (1.32-2.42)	355
	07-08	**.643** (.543-.763)	**.630** (.530-.730)	**1.02** (.770-1.24)	**1.50** (1.24-2.02)	**2.04** (1.70-2.58)	394
	09-10	**.604** (.551-.662)	**.580** (.520-.650)	**.870** (.780-1.00)	**1.32** (1.09-1.51)	**1.60** (1.38-1.75)	378
12-19 years	99-00	**.496** (.460-.535)	**.469** (.408-.508)	**.709** (.655-.828)	**1.11** (.981-1.28)	**1.65** (1.15-2.79)	719
	01-02	**.404** (.380-.428)	**.375** (.342-.400)	**.603** (.541-.702)	**.990** (.882-1.18)	**1.41** (1.07-1.63)	762
	03-04	**.432** (.404-.461)	**.404** (.383-.436)	**.623** (.551-.730)	**.938** (.828-1.06)	**1.23** (1.09-1.35)	725
	05-06	**.363** (.333-.395)	**.340** (.310-.360)	**.510** (.460-.600)	**.800** (.690-.930)	**1.07** (.940-1.23)	701
	07-08	**.302** (.270-.337)	**.290** (.250-.340)	**.430** (.400-.490)	**.670** (.550-.790)	**.900** (.700-1.09)	376
	09-10	**.299** (.273-.328)	**.290** (.260-.320)	**.420** (.370-.490)	**.620** (.550-.760)	**.880** (.740-1.01)	451
20 years and older	99-00	**.720** (.683-.758)	**.712** (.667-.739)	**1.10** (1.02-1.18)	**1.69** (1.53-1.87)	**2.31** (2.15-2.62)	1406
	01-02	**.658** (.617-.703)	**.652** (.608-.702)	**1.05** (.992-1.11)	**1.51** (1.40-1.61)	**2.00** (1.85-2.19)	1559
	03-04	**.641** (.606-.679)	**.633** (.605-.670)	**.988** (.917-1.04)	**1.47** (1.28-1.63)	**1.94** (1.72-2.12)	1543
	05-06	**.573** (.548-.600)	**.570** (.530-.600)	**.890** (.850-.960)	**1.32** (1.22-1.41)	**1.77** (1.53-1.94)	1520
	07-08	**.545** (.513-.579)	**.530** (.490-.570)	**.840** (.760-.910)	**1.36** (1.27-1.49)	**1.92** (1.78-2.08)	1857
	09-10	**.514** (.489-.539)	**.500** (.460-.530)	**.790** (.730-.840)	**1.22** (1.10-1.35)	**1.57** (1.46-1.71)	2019
Gender							
Males	99-00	**.720** (.679-.763)	**.693** (.645-.734)	**1.10** (.992-1.22)	**1.68** (1.50-2.09)	**2.43** (2.15-3.03)	1227
	01-02	**.639** (.607-.673)	**.638** (.586-.686)	**1.01** (.957-1.08)	**1.55** (1.41-1.61)	**2.06** (1.88-2.43)	1334
	03-04	**.615** (.588-.644)	**.593** (.561-.639)	**.914** (.862-.977)	**1.44** (1.25-1.53)	**2.00** (1.71-2.28)	1281
	05-06	**.551** (.522-.582)	**.530** (.510-.580)	**.830** (.770-.910)	**1.25** (1.13-1.39)	**1.77** (1.42-2.20)	1271
	07-08	**.501** (.471-.534)	**.490** (.450-.530)	**.750** (.700-.810)	**1.29** (1.15-1.49)	**1.88** (1.71-1.98)	1327
	09-10	**.481** (.458-.505)	**.450** (.430-.490)	**.740** (.690-.800)	**1.15** (1.04-1.29)	**1.56** (1.37-1.70)	1398
Females	99-00	**.722** (.681-.765)	**.707** (.667-.746)	**1.11** (1.05-1.18)	**1.74** (1.50-2.02)	**2.38** (2.03-2.88)	1238
	01-02	**.639** (.594-.688)	**.625** (.571-.682)	**1.03** (.946-1.11)	**1.50** (1.39-1.61)	**1.98** (1.85-2.15)	1355
	03-04	**.648** (.601-.698)	**.649** (.604-.718)	**1.03** (.938-1.10)	**1.56** (1.34-1.73)	**1.96** (1.72-2.20)	1277
	05-06	**.541** (.507-.577)	**.530** (.500-.580)	**.880** (.820-.940)	**1.28** (1.12-1.41)	**1.64** (1.38-1.91)	1305
	07-08	**.527** (.489-.568)	**.500** (.470-.550)	**.840** (.740-.960)	**1.34** (1.23-1.47)	**1.79** (1.56-2.08)	1300
	09-10	**.495** (.466-.526)	**.480** (.450-.520)	**.780** (.710-.830)	**1.20** (1.08-1.32)	**1.52** (1.39-1.62)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Lead (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.940** (.876-1.01)	**.887** (.796-1.03)	**1.43** (1.37-1.58)	**2.38** (2.08-2.77)	**3.46** (2.78-4.18)	884
	01-02	**.810** (.731-.898)	**.774** (.702-.893)	**1.29** (1.09-1.44)	**2.05** (1.75-2.50)	**2.78** (2.56-3.33)	682
	03-04	**.755** (.681-.838)	**.708** (.612-.851)	**1.18** (1.09-1.31)	**1.86** (1.50-2.26)	**2.31** (1.98-2.92)	618
	05-06	**.686** (.638-.737)	**.680** (.620-.740)	**1.00** (.930-1.13)	**1.63** (1.39-1.88)	**2.20** (1.77-3.20)	652
	07-08	**.607** (.514-.717)	**.590** (.500-.690)	**.970** (.770-1.19)	**1.56** (1.25-2.07)	**2.20** (1.78-2.46)	515
	09-10	**.573** (.526-.623)	**.540** (.470-.610)	**.950** (.780-1.06)	**1.59** (1.41-1.82)	**2.02** (1.82-2.40)	613
Non-Hispanic blacks	99-00	**.722** (.659-.790)	**.671** (.583-.753)	**1.11** (.988-1.20)	**2.00** (1.56-2.51)	**2.83** (2.20-3.88)	568
	01-02	**.644** (.559-.742)	**.608** (.510-.710)	**.962** (.853-1.20)	**1.79** (1.36-2.33)	**2.75** (2.04-3.98)	667
	03-04	**.609** (.529-.701)	**.569** (.492-.698)	**.900** (.793-1.03)	**1.48** (1.11-1.97)	**2.24** (1.65-2.88)	723
	05-06	**.483** (.459-.508)	**.470** (.440-.490)	**.740** (.670-.820)	**1.18** (1.06-1.29)	**1.60** (1.37-1.85)	692
	07-08	**.452** (.414-.492)	**.440** (.400-.490)	**.710** (.610-.780)	**1.13** (.930-1.33)	**1.57** (1.21-1.88)	589
	09-10	**.444** (.417-.473)	**.420** (.390-.470)	**.680** (.600-.740)	**1.07** (.940-1.18)	**1.51** (1.18-1.65)	544
Non-Hispanic whites	99-00	**.696** (.668-.725)	**.677** (.645-.718)	**1.07** (.997-1.14)	**1.66** (1.50-1.83)	**2.31** (1.94-2.82)	822
	01-02	**.615** (.579-.654)	**.621** (.571-.667)	**1.00** (.933-1.07)	**1.46** (1.37-1.52)	**1.88** (1.62-2.03)	1132
	03-04	**.623** (.592-.655)	**.618** (.587-.657)	**.971** (.914-1.03)	**1.44** (1.25-1.61)	**1.85** (1.64-2.10)	1074
	05-06	**.541** (.500-.585)	**.530** (.490-.580)	**.850** (.790-.920)	**1.24** (1.12-1.37)	**1.62** (1.37-1.94)	1041
	07-08	**.506** (.466-.550)	**.490** (.460-.540)	**.790** (.700-.880)	**1.27** (1.15-1.42)	**1.81** (1.59-1.96)	1095
	09-10	**.482** (.448-.518)	**.460** (.430-.500)	**.740** (.690-.820)	**1.15** (1.01-1.30)	**1.46** (1.32-1.59)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Lead (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.409** (.380-.440)	**.396** (.374-.418)	**.634** (.583-.675)	**1.00** (.878-1.16)	**1.51** (1.24-1.71)	2502
Age group							
6-11 years	11-12	**.494** (.430-.567)	**.459** (.414-.529)	**.708** (.559-.930)	**1.18** (.884-1.56)	**1.56** (1.12-2.22)	398
12-19 years	11-12	**.247** (.218-.281)	**.224** (.206-.264)	**.385** (.317-.429)	**.541** (.440-.667)	**.667** (.513-1.03)	390
20 years and older	11-12	**.433** (.402-.466)	**.414** (.389-.437)	**.660** (.619-.712)	**1.05** (.929-1.22)	**1.61** (1.28-1.87)	1714
Gender							
Males	11-12	**.388** (.346-.436)	**.377** (.338-.418)	**.590** (.524-.658)	**.987** (.833-1.17)	**1.51** (1.16-1.89)	1261
Females	11-12	**.430** (.405-.457)	**.416** (.385-.444)	**.667** (.626-.709)	**1.03** (.905-1.21)	**1.49** (1.21-1.71)	1241
Race/ethnicity							
Mexican Americans	11-12	**.418** (.370-.471)	**.409** (.356-.462)	**.667** (.598-.716)	**1.05** (.822-1.25)	**1.32** (1.16-1.54)	317
Non-Hispanic blacks	11-12	**.335** (.301-.374)	**.316** (.269-.357)	**.529** (.464-.598)	**.906** (.770-1.07)	**1.34** (1.06-1.55)	669
Non-Hispanic whites	11-12	**.419** (.378-.465)	**.404** (.369-.439)	**.642** (.559-.722)	**.966** (.826-1.22)	**1.62** (1.16-2.00)	818
All Hispanics	11-12	**.416** (.377-.460)	**.401** (.366-.442)	**.641** (.561-.694)	**1.02** (.851-1.24)	**1.40** (1.16-1.65)	573
Asians	11-12	**.511** (.453-.577)	**.512** (.440-.588)	**.829** (.706-.980)	**1.28** (1.05-1.57)	**1.61** (1.40-2.22)	353

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Blood Manganese (2011 - 2012)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**9.35** (9.19-9.51)	**9.22** (9.04-9.40)	**11.5** (11.3-11.7)	**14.4** (14.2-14.6)	**16.7** (16.2-17.3)	7920
Age group							
1-5 years	11-12	**10.7** (10.2-11.2)	**10.6** (10.1-11.2)	**13.2** (12.6-13.5)	**15.3** (14.5-16.8)	**18.2** (15.3-19.7)	713
6-11 years	11-12	**10.3** (9.98-10.6)	**10.2** (9.83-10.4)	**12.6** (12.2-12.8)	**14.9** (14.2-15.5)	**16.5** (16.0-17.6)	1048
12-19 years	11-12	**10.1** (9.67-10.5)	**9.90** (9.42-10.8)	**12.5** (11.7-13.2)	**14.8** (14.1-15.4)	**16.6** (15.3-17.9)	1129
20 years and older	11-12	**9.09** (8.94-9.24)	**8.96** (8.83-9.11)	**11.1** (10.9-11.3)	**14.1** (13.7-14.5)	**16.7** (16.1-17.3)	5030
Gender							
Males	11-12	**8.74** (8.58-8.91)	**8.78** (8.65-8.91)	**10.6** (10.3-10.9)	**13.0** (12.7-13.4)	**14.9** (14.4-15.3)	3968
Females	11-12	**9.96** (9.75-10.2)	**9.72** (9.52-10.0)	**12.4** (12.0-12.9)	**15.5** (15.2-15.9)	**17.8** (17.4-18.4)	3952
Race/ethnicity							
Mexican Americans	11-12	**10.7** (10.4-11.0)	**10.7** (10.3-11.0)	**13.2** (12.9-13.5)	**16.4** (15.2-17.1)	**19.1** (17.7-20.3)	1077
Non-Hispanic blacks	11-12	**8.34** (8.19-8.49)	**8.18** (8.04-8.33)	**10.1** (9.81-10.4)	**12.7** (12.0-13.3)	**15.5** (14.5-16.5)	2195
Non-Hispanic whites	11-12	**9.08** (8.91-9.26)	**9.01** (8.79-9.21)	**11.1** (10.9-11.3)	**13.7** (13.3-14.2)	**15.9** (15.2-16.4)	2493
All Hispanics	11-12	**10.4** (10.1-10.8)	**10.3** (9.95-10.7)	**12.8** (12.3-13.3)	**15.7** (14.9-16.7)	**18.3** (17.3-19.2)	1931
Asians	11-12	**11.9** (11.5-12.4)	**11.8** (11.4-12.3)	**14.7** (14.1-15.3)	**17.6** (16.8-18.4)	**19.8** (19.0-21.1)	1005

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.06.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Urinary Manganese (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.123** (.112-.136)	**.120** (.100-.140)	**.200** (.180-.230)	**.300** (.270-.310)	**.370** (.320-.450)	2504
Age group							
6-11 years	11-12	**.143** (.126-.162)	**.150** (.120-.180)	**.250** (.210-.300)	**.340** (.310-.450)	**.460** (.350-.540)	399
12-19 years	11-12	**.128** (.107-.153)	**.120** (.090-.160)	**.220** (.160-.280)	**.310** (.250-.420)	**.430** (.310-.570)	390
20 years and older	11-12	**.121** (.109-.134)	**.120** (.100-.140)	**.190** (.180-.220)	**.280** (.250-.300)	**.350** (.300-.440)	1715
Gender							
Males	11-12	**.121** (.108-.136)	**.120** (.100-.140)	**.190** (.170-.220)	**.280** (.250-.310)	**.350** (.300-.390)	1262
Females	11-12	**.126** (.114-.138)	**.120** (.100-.140)	**.210** (.190-.240)	**.300** (.270-.350)	**.410** (.340-.520)	1242
Race/ethnicity							
Mexican Americans	11-12	**.129** (.116-.144)	**.130** (.110-.150)	**.220** (.190-.250)	**.300** (.260-.360)	**.360** (.300-.440)	317
Non-Hispanic blacks	11-12	**.132** (.116-.150)	**.140** (.100-.170)	**.220** (.200-.240)	**.310** (.280-.360)	**.380** (.320-.480)	669
Non-Hispanic whites	11-12	**.123** (.109-.138)	**.120** (.100-.140)	**.200** (.170-.230)	**.300** (.250-.340)	**.390** (.300-.510)	820
All Hispanics	11-12	**.120** (.110-.132)	**.120** (.100-.150)	**.200** (.180-.230)	**.290** (.260-.300)	**.330** (.300-.380)	573
Asians	11-12	**.125** (.108-.143)	**.120** (.090-.160)	**.220** (.180-.250)	**.300** (.270-.360)	**.410** (.300-.490)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.08.

Urinary Manganese (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.140** (.126-.155)	**.139** (.119-.154)	**.233** (.206-.273)	**.389** (.354-.444)	**.548** (.500-.625)	2502
Age group							
6-11 years	11-12	**.201** (.175-.231)	**.197** (.173-.238)	**.308** (.285-.358)	**.486** (.388-.600)	**.633** (.511-.750)	398
12-19 years	11-12	**.122** (.105-.143)	**.125** (.099-.150)	**.200** (.174-.213)	**.297** (.220-.429)	**.490** (.271-.814)	390
20 years and older	11-12	**.137** (.124-.151)	**.133** (.117-.148)	**.232** (.197-.276)	**.389** (.347-.455)	**.545** (.487-.600)	1714
Gender							
Males	11-12	**.113** (.101-.127)	**.111** (.098-.127)	**.182** (.165-.197)	**.318** (.248-.357)	**.388** (.349-.487)	1261
Females	11-12	**.171** (.153-.191)	**.161** (.145-.194)	**.286** (.250-.324)	**.500** (.406-.571)	**.635** (.571-.980)	1241
Race/ethnicity							
Mexican Americans	11-12	**.145** (.125-.169)	**.139** (.119-.172)	**.237** (.196-.277)	**.359** (.300-.419)	**.439** (.375-.600)	317
Non-Hispanic blacks	11-12	**.102** (.090-.117)	**.102** (.085-.117)	**.172** (.149-.200)	**.272** (.231-.351)	**.406** (.351-.547)	669
Non-Hispanic whites	11-12	**.148** (.132-.166)	**.145** (.127-.162)	**.248** (.212-.300)	**.410** (.375-.490)	**.550** (.512-.633)	818
All Hispanics	11-12	**.135** (.121-.150)	**.129** (.114-.146)	**.221** (.190-.250)	**.356** (.317-.380)	**.469** (.386-.574)	573
Asians	11-12	**.167** (.138-.201)	**.164** (.133-.198)	**.271** (.219-.360)	**.462** (.406-.577)	**.641** (.500-.980)	353

Blood Total Mercury (2003 – 2010)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**.797** (.703-.903)	**.800** (.700-.900)	**1.70** (1.50-1.90)	**3.30** (2.90-3.90)	**4.90** (4.30-5.50)	8373
	05-06	**.863** (.787-.946)	**.830** (.760-.920)	**1.66** (1.48-1.93)	**3.20** (2.87-3.54)	**4.64** (4.17-5.25)	8407
	07-08	**.769** (.689-.859)	**.740** (.660-.830)	**1.48** (1.29-1.69)	**2.95** (2.46-3.59)	**4.64** (3.74-5.79)	8266
	09-10	**.863** (.792-.941)	**.790** (.730-.880)	**1.68** (1.49-1.91)	**3.43** (3.07-3.84)	**5.13** (4.57-5.67)	8793
Age group							
1-5 years	03-04	**.326** (.285-.372)	**.300** (.300-.300)	**.500** (.500-.700)	**1.00** (.800-1.60)	**1.80** (1.30-2.50)	911
	05-06	*	**< LOD**	**.500** (.470-.550)	**.940** (.820-1.24)	**1.43** (1.25-1.59)	968
	07-08	*	**< LOD**	**.440** (.380-.540)	**.830** (.620-1.12)	**1.32** (.960-2.40)	817
	09-10	*	**< LOD**	**.490** (.430-.590)	**.890** (.740-1.08)	**1.30** (1.08-1.52)	836
6-11 years	03-04	**.419** (.363-.484)	**.400** (.400-.500)	**.700** (.700-.900)	**1.30** (1.00-1.60)	**1.90** (1.40-3.50)	856
	05-06	*	**.410** (.330-.460)	**.740** (.630-1.00)	**1.43** (1.21-1.87)	**2.34** (1.53-3.42)	934
	07-08	*	**.380** (.340-.440)	**.700** (.600-.790)	**1.21** (.970-1.36)	**1.56** (1.34-1.80)	1011
	09-10	*	**.360** (<LOD-.400)	**.670** (.590-.770)	**1.22** (1.05-1.45)	**1.88** (1.43-2.61)	1009
12-19 years	03-04	**.490** (.418-.574)	**.500** (.400-.600)	**1.00** (.800-1.20)	**1.80** (1.40-2.30)	**2.60** (2.10-3.30)	2081
	05-06	**.513** (.461-.570)	**.460** (.390-.530)	**.850** (.740-1.04)	**1.66** (1.31-1.98)	**2.41** (2.12-2.90)	1996
	07-08	**.469** (.426-.516)	**.440** (.390-.490)	**.800** (.670-.970)	**1.55** (1.30-1.72)	**2.05** (1.77-2.34)	1074
	09-10	**.534** (.473-.602)	**.450** (.370-.540)	**.910** (.770-1.11)	**2.04** (1.53-2.55)	**3.01** (2.53-3.63)	1183
20 years and older	03-04	**.979** (.860-1.12)	**1.00** (.800-1.10)	**2.00** (1.70-2.30)	**3.80** (3.20-4.40)	**5.40** (4.60-6.70)	4525
	05-06	**1.06** (.967-1.15)	**1.03** (.930-1.15)	**1.98** (1.73-2.22)	**3.64** (3.33-4.01)	**5.31** (4.82-5.67)	4509
	07-08	**.944** (.833-1.07)	**.890** (.780-1.03)	**1.73** (1.47-2.09)	**3.41** (2.82-4.17)	**5.32** (4.32-6.72)	5364
	09-10	**1.04** (.956-1.14)	**.970** (.870-1.08)	**2.00** (1.80-2.20)	**3.96** (3.55-4.27)	**5.75** (5.14-6.50)	5765
Gender							
Males	03-04	**.814** (.714-.927)	**.800** (.700-.900)	**1.80** (1.50-2.00)	**3.70** (3.20-4.30)	**5.40** (4.60-6.50)	4132
	05-06	**.864** (.783-.954)	**.810** (.720-.940)	**1.69** (1.48-2.01)	**3.30** (2.86-3.73)	**4.83** (4.08-5.45)	4092
	07-08	**.809** (.709-.923)	**.760** (.670-.850)	**1.56** (1.31-1.81)	**3.21** (2.72-4.06)	**5.16** (4.12-6.97)	4147
	09-10	**.883** (.810-.962)	**.790** (.730-.870)	**1.75** (1.54-2.02)	**3.84** (3.35-4.26)	**5.65** (5.13-6.34)	4366
Females	03-04	**.781** (.689-.886)	**.800** (.700-.900)	**1.60** (1.40-1.80)	**3.00** (2.50-3.50)	**4.40** (3.60-5.30)	4241
	05-06	**.864** (.791-.943)	**.850** (.770-.920)	**1.63** (1.44-1.89)	**3.09** (2.75-3.46)	**4.51** (4.01-5.28)	4315
	07-08	**.748** (.677-.827)	**.720** (.660-.810)	**1.42** (1.24-1.60)	**2.70** (2.27-3.27)	**3.93** (3.17-5.16)	4119
	09-10	**.845** (.772-.924)	**.800** (.720-.880)	**1.61** (1.43-1.81)	**3.13** (2.76-3.48)	**4.43** (4.04-5.11)	4427
Race/ethnicity							
Mexican Americans	03-04	**.563** (.472-.672)	**.600** (.500-.700)	**1.00** (.800-1.30)	**1.90** (1.60-2.40)	**3.00** (2.20-3.80)	2085
	05-06	**.597** (.524-.679)	**.580** (.490-.670)	**1.04** (.870-1.24)	**1.70** (1.40-2.12)	**2.58** (1.96-3.31)	2236
	07-08	**.594** (.536-.658)	**.580** (.520-.670)	**1.03** (.900-1.17)	**1.73** (1.49-2.04)	**2.48** (2.10-2.91)	1712
	09-10	**.613** (.571-.659)	**.580** (.540-.630)	**1.01** (.890-1.15)	**1.63** (1.47-1.90)	**2.45** (2.03-2.93)	1966
Non-Hispanic blacks	03-04	**.877** (.753-1.02)	**.900** (.800-1.00)	**1.60** (1.40-1.80)	**3.00** (2.30-4.00)	**4.40** (3.30-6.00)	2293
	05-06	**.823** (.697-.972)	**.800** (.670-.940)	**1.50** (1.21-1.92)	**2.72** (2.14-3.59)	**4.09** (3.22-5.16)	2193
	07-08	**.766** (.711-.825)	**.780** (.710-.830)	**1.32** (1.23-1.42)	**2.25** (1.99-2.58)	**3.42** (2.74-3.90)	1746
	09-10	**.928** (.805-1.07)	**.900** (.800-1.02)	**1.67** (1.38-1.96)	**2.93** (2.20-4.21)	**4.56** (3.34-6.69)	1593
Non-Hispanic whites	03-04	**.776** (.655-.919)	**.800** (.700-.900)	**1.70** (1.40-2.00)	**3.20** (2.60-3.90)	**4.70** (4.00-5.60)	3478
	05-06	**.891** (.801-.992)	**.870** (.770-1.00)	**1.74** (1.50-2.10)	**3.37** (2.88-3.76)	**4.76** (4.18-5.37)	3310
	07-08	**.743** (.651-.847)	**.720** (.620-.820)	**1.43** (1.18-1.70)	**2.79** (2.33-3.41)	**4.18** (3.57-4.83)	3461
	09-10	**.856** (.766-.957)	**.790** (.690-.920)	**1.70** (1.46-1.98)	**3.43** (2.94-3.94)	**4.92** (4.30-5.65)	3760

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.2, 0.33, 0.33, and 0.33 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Total Mercury (2011 - 2012)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.703** (.617-.801)	**.640** (.580-.730)	**1.38** (1.14-1.72)	**2.87** (2.39-3.62)	**4.40** (3.50-5.71)	7920
Age group							
1-5 years	11-12	**.262** (.237-.291)	**.250** (.220-.270)	**.390** (.340-.450)	**.680** (.540-.880)	**.990** (.790-1.21)	713
6-11 years	11-12	**.330** (.287-.379)	**.320** (.280-.360)	**.530** (.480-.600)	**.930** (.780-1.20)	**1.40** (1.02-2.17)	1048
12-19 years	11-12	**.411** (.355-.476)	**.370** (.320-.450)	**.680** (.590-.800)	**1.32** (1.08-1.75)	**2.25** (1.46-2.87)	1129
20 years and older	11-12	**.863** (.753-.990)	**.790** (.690-.940)	**1.68** (1.36-2.12)	**3.35** (2.71-4.31)	**5.02** (3.94-6.96)	5030
Gender							
Males	11-12	**.712** (.623-.815)	**.650** (.570-.730)	**1.40** (1.17-1.72)	**3.00** (2.44-3.91)	**4.94** (3.50-6.79)	3968
Females	11-12	**.694** (.609-.791)	**.640** (.580-.740)	**1.36** (1.09-1.75)	**2.81** (2.28-3.50)	**4.03** (3.29-5.08)	3952
Race/ethnicity							
Mexican Americans	11-12	**.483** (.424-.550)	**.480** (.400-.560)	**.810** (.720-.900)	**1.44** (1.16-1.63)	**1.90** (1.57-2.19)	1077
Non-Hispanic blacks	11-12	**.679** (.542-.852)	**.630** (.500-.790)	**1.24** (.880-1.72)	**2.45** (1.84-3.14)	**3.80** (2.70-5.37)	2195
Non-Hispanic whites	11-12	**.688** (.582-.813)	**.630** (.550-.750)	**1.38** (1.09-1.82)	**2.83** (2.18-3.82)	**4.25** (3.02-6.24)	2493
All Hispanics	11-12	**.612** (.527-.710)	**.590** (.490-.700)	**1.08** (.890-1.33)	**1.96** (1.60-2.68)	**3.03** (2.37-3.86)	1931
Asians	11-12	**1.86** (1.58-2.19)	**2.30** (1.84-2.64)	**4.32** (3.71-5.21)	**7.71** (6.38-8.79)	**10.3** (8.85-12.0)	1005

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.16.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Inorganic Mercury (2003 – 2010)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	.600 (.500-.600)	.700 (.700-.700)	8147
	05-06	*	< LOD	< LOD	.540 (.500-.580)	.660 (.620-.710)	8371
	07-08	*	< LOD	.350 (<LOD-.370)	.520 (.500-.540)	.650 (.620-.690)	8162
	09-10	*	< LOD	< LOD	.390 (.360-.430)	.510 (.480-.570)	8733
Age group							
1-5 years	03-04	*	< LOD	< LOD	< LOD	.500 (<LOD-.600)	792
	05-06	*	< LOD	< LOD	.430 (<LOD-.470)	.510 (.430-.670)	948
	07-08	*	< LOD	< LOD	.350 (<LOD-.450)	.500 (.410-.550)	726
	09-10	*	< LOD	< LOD	< LOD	.360 (<LOD-.460)	789
6-11 years	03-04	*	< LOD	< LOD	< LOD	.600 (.500-.600)	842
	05-06	*	< LOD	< LOD	.450 (<LOD-.520)	.560 (.470-.640)	932
	07-08	*	< LOD	< LOD	.380 (.350-.410)	.470 (.420-.520)	1010
	09-10	*	< LOD	< LOD	< LOD	.380 (.350-.440)	1006
12-19 years	03-04	*	< LOD	< LOD	.500 (<LOD-.500)	.600 (.500-.600)	2060
	05-06	*	< LOD	< LOD	.430 (.410-.460)	.540 (.480-.590)	1984
	07-08	*	< LOD	< LOD	.370 (<LOD-.400)	.480 (.410-.530)	1069
	09-10	*	< LOD	< LOD	< LOD	.420 (.350-.500)	1184
20 years and older	03-04	*	< LOD	< LOD	.600 (.500-.600)	.700 (.700-.800)	4453
	05-06	*	< LOD	< LOD	.570 (.530-.610)	.690 (.650-.750)	4507
	07-08	*	< LOD	.380 (.360-.390)	.550 (.530-.570)	.700 (.660-.730)	5357
	09-10	*	< LOD	< LOD	.420 (.390-.450)	.540 (.490-.600)	5754
Gender							
Males	03-04	*	< LOD	< LOD	.500 (.500-.600)	.600 (.600-.700)	4015
	05-06	*	< LOD	< LOD	.480 (.450-.520)	.600 (.550-.640)	4076
	07-08	*	< LOD	< LOD	.500 (.470-.520)	.600 (.570-.650)	4093
	09-10	*	< LOD	< LOD	.370 (<LOD-.420)	.500 (.440-.560)	4336
Females	03-04	*	< LOD	< LOD	.600 (.500-.600)	.700 (.700-.800)	4132
	05-06	*	< LOD	< LOD	.580 (.550-.640)	.700 (.670-.780)	4295
	07-08	*	< LOD	.380 (.360-.390)	.550 (.520-.570)	.700 (.670-.740)	4069
	09-10	*	< LOD	< LOD	.410 (.380-.440)	.530 (.490-.600)	4397

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, and 09-10 are 0.42, 0.4, 0.35, and 0.35 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Inorganic Mercury (2003 – 2010)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**.500** (.500-.600)	**.700** (.600-.800)	2007
	05-06	*	**< LOD**	**< LOD**	**.530** (.470-.580)	**.670** (.560-.830)	2224
	07-08	*	**< LOD**	**< LOD**	**.430** (.400-.480)	**.560** (.520-.610)	1685
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.470** (.390-.530)	1947
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**.600** (.500-.600)	**.700** (.600-.800)	2240
	05-06	*	**< LOD**	**< LOD**	**.530** (.470-.600)	**.670** (.600-.760)	2183
	07-08	*	**< LOD**	**< LOD**	**.490** (.450-.530)	**.610** (.560-.650)	1729
	09-10	*	**< LOD**	**< LOD**	**.370** (.350-.390)	**.480** (.410-.530)	1580
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**.600** (.500-.600)	**.700** (.600-.700)	3406
	05-06	*	**< LOD**	**< LOD**	**.540** (.500-.580)	**.650** (.610-.710)	3298
	07-08	*	**< LOD**	**.360** (<LOD-.390)	**.530** (.500-.550)	**.660** (.620-.700)	3421
	09-10	*	**< LOD**	**< LOD**	**.410** (.370-.450)	**.520** (.480-.590)	3739

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, and 09-10 are 0.42, 0.4, 0.35, and 0.35 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Inorganic Mercury (2011 - 2012)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	.440 (.390-.480)	.600 (.520-.680)	7841
1-5 years	11-12	*	< LOD	< LOD	< LOD	.280 (<LOD-.360)	657
6-11 years	11-12	*	< LOD	< LOD	.280 (<LOD-.320)	.360 (.290-.450)	1044
12-19 years	11-12	*	< LOD	< LOD	.280 (<LOD-.350)	.400 (.300-.540)	1121
20 years and older	11-12	*	< LOD	.290 (.270-.310)	.470 (.420-.530)	.630 (.550-.760)	5019
Males	11-12	*	< LOD	< LOD	.420 (.370-.480)	.600 (.490-.680)	3925
Females	11-12	*	< LOD	.280 (<LOD-.300)	.450 (.390-.490)	.610 (.520-.700)	3916
Mexican Americans	11-12	*	< LOD	< LOD	.390 (.330-.460)	.580 (.460-.710)	1058
Non-Hispanic blacks	11-12	*	< LOD	< LOD	.410 (.370-.470)	.570 (.480-.670)	2170
Non-Hispanic whites	11-12	*	< LOD	.270 (<LOD-.300)	.430 (.370-.490)	.590 (.480-.690)	2477
All Hispanics	11-12	*	< LOD	< LOD	.430 (.370-.490)	.630 (.540-.760)	1902
Asians	11-12	*	< LOD	.350 (.310-.390)	.550 (.500-.590)	.700 (.630-.760)	997

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.27.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Ethyl Mercury (2011 - 2012)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	7841
Age group							
1-5 years	11-12	*	< LOD	< LOD	< LOD	< LOD	657
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	1044
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	1121
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	5019
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	3925
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	3916
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	1058
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	2170
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	2477
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	1902
Asians	11-12	*	< LOD	< LOD	< LOD	**.160** (<LOD-.280)	997

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.16.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Methyl Mercury (2011 - 2012)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.498** (.423-.587)	**.480** (.400-.570)	**1.25** (.950-1.61)	**2.81** (2.29-3.55)	**4.43** (3.46-5.49)	7841
Age group							
1-5 years	11-12	*	**.140** (.120-.170)	**.270** (.220-.350)	**.540** (.420-.780)	**.970** (.590-1.14)	657
6-11 years	11-12	**.209** (.182-.241)	**.180** (.150-.220)	**.400** (.330-.490)	**.820** (.630-1.06)	**1.34** (.940-1.84)	1044
12-19 years	11-12	**.276** (.237-.322)	**.270** (.210-.310)	**.570** (.460-.670)	**1.27** (.870-1.67)	**2.15** (1.40-2.81)	1121
20 years and older	11-12	**.624** (.523-.746)	**.610** (.500-.760)	**1.53** (1.18-2.00)	**3.28** (2.56-4.31)	**4.97** (3.91-6.89)	5019
Gender							
Males	11-12	**.509** (.433-.598)	**.490** (.400-.590)	**1.30** (.990-1.62)	**2.84** (2.29-3.68)	**4.77** (3.44-6.74)	3925
Females	11-12	**.489** (.413-.580)	**.470** (.380-.560)	**1.19** (.900-1.61)	**2.72** (2.18-3.46)	**3.99** (3.28-4.99)	3916
Race/ethnicity							
Mexican Americans	11-12	**.320** (.264-.387)	**.330** (.260-.410)	**.610** (.500-.770)	**1.23** (.920-1.40)	**1.66** (1.33-2.06)	1058
Non-Hispanic blacks	11-12	**.517** (.392-.681)	**.510** (.380-.660)	**1.13** (.750-1.61)	**2.37** (1.66-3.08)	**3.63** (2.57-5.16)	2170
Non-Hispanic whites	11-12	**.478** (.392-.583)	**.470** (.360-.580)	**1.25** (.870-1.69)	**2.76** (2.06-3.69)	**4.24** (2.92-6.38)	2477
All Hispanics	11-12	**.429** (.350-.525)	**.420** (.340-.520)	**.890** (.700-1.17)	**1.81** (1.39-2.46)	**2.94** (2.19-3.71)	1902
Asians	11-12	**1.58** (1.29-1.94)	**2.16** (1.68-2.55)	**4.35** (3.64-5.13)	**7.57** (6.21-8.61)	**10.5** (8.48-12.5)	997

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.12.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Urinary Mercury (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**.447** (.406-.492)	**.420** (.360-.480)	**1.00** (.870-1.14)	**2.08** (1.78-2.42)	**3.19** (2.76-3.55)	2538
	05-06	**.468** (.426-.514)	**.460** (.410-.510)	**1.03** (.900-1.12)	**2.11** (1.88-2.36)	**2.94** (2.58-3.26)	2578
	07-08	**.443** (.408-.482)	**.440** (.400-.470)	**.880** (.760-1.00)	**1.74** (1.62-1.96)	**2.66** (2.29-3.08)	2634
	09-10	*	**.400** (.360-.450)	**.850** (.770-.910)	**1.53** (1.30-1.81)	**2.42** (2.07-2.72)	2865
Age group							
6-11 years	03-04	**.254** (.213-.304)	**.200** (.160-.250)	**.440** (.330-.580)	**1.16** (.610-1.61)	**1.96** (1.13-2.97)	287
	05-06	**.333** (.267-.416)	**.320** (.250-.390)	**.650** (.470-.840)	**1.32** (.930-1.88)	**2.18** (1.28-3.40)	355
	07-08	**.301** (.260-.347)	**.290** (.230-.340)	**.520** (.430-.620)	**1.03** (.770-1.23)	**1.87** (1.03-3.48)	398
	09-10	*	**.260** (.220-.320)	**.510** (.430-.620)	**1.03** (.730-1.31)	**1.58** (1.18-1.88)	379
12-19 years	03-04	**.358** (.313-.408)	**.330** (.290-.370)	**.700** (.530-.840)	**1.60** (1.14-2.52)	**2.93** (1.88-3.66)	722
	05-06	**.372** (.286-.486)	**.350** (.270-.470)	**.740** (.580-.920)	**1.61** (.970-2.81)	**2.59** (1.40-4.45)	703
	07-08	**.364** (.326-.406)	**.380** (.320-.450)	**.590** (.550-.650)	**1.24** (.830-1.71)	**1.82** (1.41-2.29)	375
	09-10	*	**.290** (.230-.360)	**.530** (.470-.630)	**1.09** (.890-1.31)	**1.73** (1.28-2.31)	455
20 years and older	03-04	**.495** (.442-.555)	**.480** (.410-.570)	**1.12** (.930-1.29)	**2.20** (1.85-2.65)	**3.33** (2.76-3.88)	1529
	05-06	**.505** (.468-.545)	**.510** (.460-.560)	**1.11** (1.04-1.16)	**2.23** (1.97-2.50)	**3.11** (2.64-3.37)	1520
	07-08	**.477** (.435-.523)	**.470** (.430-.520)	**.970** (.850-1.10)	**1.89** (1.69-2.20)	**2.82** (2.33-3.56)	1861
	09-10	*	**.450** (.390-.510)	**.890** (.810-1.00)	**1.66** (1.40-2.01)	**2.53** (2.21-2.84)	2031
Gender							
Males	03-04	**.433** (.405-.463)	**.400** (.350-.460)	**.940** (.840-1.05)	**1.88** (1.63-2.18)	**2.68** (2.34-3.05)	1266
	05-06	**.464** (.411-.523)	**.450** (.400-.520)	**.980** (.860-1.11)	**2.03** (1.57-2.48)	**3.00** (2.48-3.37)	1270
	07-08	**.457** (.417-.501)	**.460** (.400-.520)	**.880** (.780-1.01)	**1.68** (1.53-1.77)	**2.40** (2.11-2.76)	1326
	09-10	*	**.410** (.340-.480)	**.860** (.750-.950)	**1.46** (1.29-1.66)	**2.21** (1.93-2.53)	1404
Females	03-04	**.460** (.396-.534)	**.430** (.330-.530)	**1.07** (.870-1.28)	**2.26** (1.77-2.90)	**3.54** (2.76-4.31)	1272
	05-06	**.472** (.424-.525)	**.470** (.390-.550)	**1.07** (.900-1.19)	**2.14** (1.84-2.50)	**2.89** (2.60-3.38)	1308
	07-08	**.431** (.388-.478)	**.430** (.380-.460)	**.870** (.710-1.05)	**1.88** (1.55-2.38)	**2.92** (2.27-4.17)	1308
	09-10	*	**.390** (.360-.450)	**.840** (.730-.940)	**1.61** (1.29-2.03)	**2.61** (2.16-3.12)	1461
Race/ethnicity							
Mexican Americans	03-04	**.416** (.340-.509)	**.360** (.280-.430)	**.960** (.700-1.23)	**2.19** (1.39-3.24)	**3.16** (1.99-6.30)	619
	05-06	**.451** (.369-.551)	**.420** (.310-.560)	**1.01** (.780-1.25)	**2.22** (1.48-2.64)	**3.00** (2.27-4.01)	651
	07-08	**.409** (.349-.480)	**.370** (.330-.450)	**.780** (.700-.950)	**1.82** (1.26-1.97)	**2.55** (1.87-3.08)	514
	09-10	*	**.350** (.280-.430)	**.670** (.520-.890)	**1.53** (1.06-1.84)	**2.29** (1.81-2.76)	615
Non-Hispanic blacks	03-04	**.476** (.413-.549)	**.430** (.360-.530)	**.890** (.770-1.00)	**1.96** (1.60-2.31)	**3.09** (2.03-4.89)	713
	05-06	**.453** (.384-.533)	**.450** (.380-.550)	**.890** (.710-1.13)	**1.78** (1.34-2.29)	**2.57** (2.21-3.15)	691
	07-08	**.478** (.411-.556)	**.460** (.380-.540)	**.910** (.770-1.06)	**1.85** (1.42-2.41)	**2.76** (1.97-4.19)	589
	09-10	*	**.410** (.340-.490)	**.840** (.650-1.08)	**1.66** (1.34-1.95)	**2.64** (1.88-3.30)	546
Non-Hispanic whites	03-04	**.441** (.382-.509)	**.420** (.330-.520)	**1.01** (.840-1.23)	**2.08** (1.67-2.46)	**3.24** (2.67-3.60)	1066
	05-06	**.459** (.409-.513)	**.440** (.400-.510)	**1.00** (.860-1.12)	**2.07** (1.77-2.40)	**2.81** (2.47-3.37)	1044
	07-08	**.431** (.378-.493)	**.430** (.380-.480)	**.880** (.700-1.07)	**1.71** (1.50-2.18)	**2.70** (2.18-3.59)	1100
	09-10	*	**.390** (.330-.470)	**.850** (.750-.950)	**1.52** (1.26-2.01)	**2.42** (1.93-2.85)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.14, 0.11, 0.08, and 0.08 respectively.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Urinary Mercury (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.324** (.285-.368)	**.320** (.280-.370)	**.660** (.580-.770)	**1.37** (1.15-1.59)	**1.83** (1.62-2.14)	2507
Age group							
6-11 years	11-12	**.241** (.206-.283)	**.220** (.190-.270)	**.450** (.390-.530)	**.930** (.680-1.36)	**1.37** (.990-2.03)	401
12-19 years	11-12	**.257** (.212-.312)	**.270** (.220-.340)	**.490** (.390-.600)	**.840** (.650-1.24)	**1.31** (.920-1.75)	390
20 years and older	11-12	**.346** (.303-.396)	**.340** (.290-.400)	**.720** (.620-.850)	**1.49** (1.20-1.67)	**1.93** (1.67-2.29)	1716
Gender							
Males	11-12	**.342** (.293-.399)	**.330** (.290-.380)	**.670** (.580-.810)	**1.34** (1.03-1.67)	**1.91** (1.54-2.51)	1260
Females	11-12	**.307** (.262-.360)	**.300** (.250-.360)	**.660** (.540-.770)	**1.37** (1.17-1.54)	**1.82** (1.54-2.14)	1247
Race/ethnicity							
Mexican Americans	11-12	**.301** (.261-.348)	**.300** (.200-.400)	**.620** (.510-.680)	**1.25** (.910-1.53)	**1.75** (1.32-2.25)	317
Non-Hispanic blacks	11-12	**.360** (.316-.410)	**.360** (.320-.400)	**.670** (.570-.800)	**1.33** (1.06-1.60)	**1.99** (1.48-3.06)	671
Non-Hispanic whites	11-12	**.308** (.260-.365)	**.290** (.260-.360)	**.630** (.510-.810)	**1.37** (1.09-1.64)	**1.77** (1.49-2.14)	819
All Hispanics	11-12	**.330** (.299-.364)	**.330** (.270-.390)	**.680** (.610-.760)	**1.30** (1.15-1.53)	**1.98** (1.61-2.42)	574
Asians	11-12	**.430** (.351-.527)	**.450** (.330-.580)	**.910** (.750-1.12)	**1.69** (1.31-2.06)	**2.41** (1.77-3.53)	355

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.05.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Urinary Mercury (creatinine corrected) (2003 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**.443** (.404-.486)	**.447** (.392-.498)	**.909** (.785-1.00)	**1.65** (1.40-1.86)	**2.35** (1.88-2.85)	2537
	05-06	**.460** (.414-.511)	**.450** (.410-.510)	**.870** (.790-1.00)	**1.63** (1.44-1.75)	**2.26** (2.12-2.50)	2578
	07-08	**.462** (.425-.502)	**.450** (.400-.490)	**.820** (.750-.960)	**1.57** (1.38-1.73)	**2.32** (2.00-2.89)	2634
	09-10	*	**.409** (.367-.459)	**.793** (.691-.893)	**1.43** (1.24-1.67)	**2.09** (1.79-2.39)	2865
Age group							
6-11 years	03-04	**.297** (.246-.358)	**.276** (.208-.347)	**.485** (.391-.630)	**1.25** (.667-1.79)	**1.79** (1.11-2.61)	286
	05-06	**.411** (.323-.524)	**.390** (.290-.500)	**.710** (.510-.960)	**1.30** (.990-2.12)	**2.55** (1.38-3.50)	355
	07-08	**.393** (.351-.440)	**.350** (.300-.440)	**.630** (.540-.770)	**1.15** (.860-1.50)	**1.68** (1.18-2.99)	398
	09-10	*	**.357** (.306-.406)	**.632** (.500-.750)	**1.04** (.863-1.26)	**1.62** (1.19-1.98)	379
12-19 years	03-04	**.255** (.225-.289)	**.217** (.196-.275)	**.464** (.376-.535)	**1.06** (.714-1.39)	**1.67** (1.13-2.03)	722
	05-06	**.286** (.230-.356)	**.260** (.200-.320)	**.500** (.380-.660)	**1.09** (.660-1.70)	**1.76** (1.11-2.67)	703
	07-08	**.284** (.251-.320)	**.280** (.230-.300)	**.500** (.400-.550)	**.890** (.620-1.08)	**1.18** (.980-1.36)	375
	09-10	*	**.226** (.202-.287)	**.481** (.429-.553)	**.917** (.736-1.18)	**1.41** (1.12-1.62)	455
20 years and older	03-04	**.508** (.455-.566)	**.525** (.447-.616)	**1.00** (.875-1.09)	**1.76** (1.46-2.11)	**2.54** (2.04-3.00)	1529
	05-06	**.503** (.461-.549)	**.510** (.470-.550)	**.940** (.850-1.07)	**1.69** (1.50-1.86)	**2.31** (2.12-2.54)	1520
	07-08	**.507** (.463-.555)	**.500** (.450-.550)	**.940** (.810-1.02)	**1.69** (1.51-2.01)	**2.56** (2.09-3.17)	1861
	09-10	*	**.454** (.395-.517)	**.861** (.731-.988)	**1.51** (1.29-1.85)	**2.15** (1.88-2.57)	2031
Gender							
Males	03-04	**.365** (.333-.400)	**.362** (.309-.417)	**.696** (.620-.784)	**1.31** (1.18-1.44)	**1.87** (1.51-2.30)	1266
	05-06	**.380** (.336-.431)	**.390** (.330-.440)	**.740** (.600-.890)	**1.27** (1.09-1.47)	**1.73** (1.62-1.85)	1270
	07-08	**.408** (.374-.445)	**.390** (.350-.450)	**.730** (.650-.810)	**1.22** (1.11-1.36)	**1.69** (1.54-2.11)	1326
	09-10	*	**.337** (.298-.391)	**.675** (.585-.802)	**1.19** (1.06-1.29)	**1.50** (1.33-1.78)	1404
Females	03-04	**.532** (.472-.599)	**.545** (.455-.652)	**1.06** (.969-1.21)	**1.88** (1.64-2.30)	**2.77** (2.12-3.56)	1271
	05-06	**.552** (.494-.617)	**.540** (.490-.620)	**1.09** (.850-1.27)	**1.96** (1.72-2.14)	**2.78** (2.35-3.17)	1308
	07-08	**.520** (.469-.576)	**.490** (.460-.540)	**.960** (.820-1.11)	**1.92** (1.58-2.24)	**2.83** (2.24-3.50)	1308
	09-10	*	**.475** (.423-.552)	**.890** (.771-1.07)	**1.81** (1.43-2.09)	**2.57** (2.09-2.94)	1461
Race/ethnicity							
Mexican Americans	03-04	**.384** (.307-.480)	**.365** (.280-.455)	**.768** (.619-.990)	**1.62** (1.23-2.16)	**2.32** (1.78-4.01)	618
	05-06	**.425** (.337-.536)	**.400** (.310-.490)	**.840** (.560-1.29)	**1.82** (1.30-2.47)	**2.63** (2.22-3.20)	651
	07-08	**.409** (.350-.479)	**.380** (.310-.480)	**.790** (.690-.850)	**1.55** (1.08-1.98)	**2.03** (1.55-2.70)	514
	09-10	*	**.333** (.272-.400)	**.660** (.494-.861)	**1.29** (1.02-1.54)	**1.95** (1.52-2.89)	615
Non-Hispanic blacks	03-04	**.343** (.301-.391)	**.306** (.265-.368)	**.587** (.522-.687)	**1.28** (.964-1.63)	**2.13** (1.41-2.87)	713
	05-06	**.328** (.285-.378)	**.320** (.270-.370)	**.610** (.470-.780)	**1.15** (.930-1.40)	**1.64** (1.29-1.96)	691
	07-08	**.350** (.303-.404)	**.330** (.280-.380)	**.590** (.490-.690)	**1.10** (.840-1.46)	**1.85** (1.13-2.77)	589
	09-10	*	**.317** (.259-.393)	**.582** (.500-.659)	**1.05** (.900-1.30)	**1.55** (1.18-1.96)	546
Non-Hispanic whites	03-04	**.463** (.400-.537)	**.476** (.385-.588)	**.970** (.800-1.07)	**1.67** (1.32-2.11)	**2.40** (1.88-2.90)	1066
	05-06	**.475** (.426-.531)	**.490** (.440-.540)	**.890** (.820-1.02)	**1.61** (1.42-1.75)	**2.23** (1.98-2.50)	1044
	07-08	**.481** (.423-.546)	**.480** (.390-.540)	**.890** (.750-1.03)	**1.58** (1.34-2.02)	**2.49** (1.89-3.18)	1100
	09-10	*	**.434** (.370-.500)	**.833** (.689-1.04)	**1.50** (1.26-1.87)	**2.12** (1.80-2.64)	1225

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Urinary Mercury (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.367** (.333-.405)	**.353** (.306-.394)	**.676** (.623-.754)	**1.33** (1.13-1.50)	**1.75** (1.49-2.32)	2505
Age group							
6-11 years	11-12	**.345** (.298-.398)	**.306** (.276-.344)	**.537** (.441-.613)	**1.08** (.884-1.43)	**1.62** (1.07-2.34)	400
12-19 years	11-12	**.246** (.219-.277)	**.221** (.190-.269)	**.405** (.368-.453)	**.735** (.571-1.11)	**1.21** (.742-1.49)	390
20 years and older	11-12	**.393** (.351-.439)	**.383** (.330-.437)	**.750** (.673-.805)	**1.38** (1.17-1.63)	**1.95** (1.50-2.48)	1715
Gender							
Males	11-12	**.320** (.278-.368)	**.294** (.267-.358)	**.558** (.478-.667)	**1.11** (.791-1.44)	**1.57** (1.21-2.00)	1259
Females	11-12	**.418** (.374-.466)	**.409** (.355-.453)	**.800** (.706-.900)	**1.46** (1.29-1.65)	**2.00** (1.63-2.60)	1246
Race/ethnicity							
Mexican Americans	11-12	**.339** (.288-.399)	**.286** (.225-.393)	**.641** (.433-.789)	**1.17** (1.00-1.42)	**1.70** (1.31-2.24)	317
Non-Hispanic blacks	11-12	**.280** (.245-.320)	**.261** (.224-.294)	**.467** (.411-.529)	**.896** (.638-1.14)	**1.43** (1.10-1.57)	671
Non-Hispanic whites	11-12	**.372** (.323-.428)	**.364** (.294-.433)	**.700** (.619-.805)	**1.35** (1.05-1.63)	**1.75** (1.41-2.48)	817
All Hispanics	11-12	**.369** (.342-.399)	**.331** (.283-.384)	**.674** (.612-.772)	**1.24** (1.13-1.44)	**1.86** (1.47-2.92)	574
Asians	11-12	**.577** (.473-.705)	**.562** (.467-.700)	**1.16** (.872-1.44)	**1.82** (1.54-2.00)	**2.29** (1.90-3.12)	355

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Urinary Molybdenum (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**45.9** (40.1-52.6)	**50.7** (44.6-58.4)	**84.9** (78.7-92.3)	**135** (125-146)	**180** (154-216)	2257
	01-02	**45.0** (42.1-48.0)	**52.4** (48.9-55.5)	**83.4** (79.1-88.7)	**124** (117-130)	**165** (145-176)	2690
	03-04	**39.7** (37.7-41.7)	**44.5** (41.6-46.7)	**78.5** (74.9-82.3)	**111** (105-118)	**138** (133-146)	2558
	05-06	**45.0** (42.4-47.8)	**51.0** (47.2-54.7)	**81.5** (77.4-85.8)	**127** (117-132)	**158** (144-174)	2576
	07-08	**45.2** (43.1-47.3)	**49.7** (47.4-52.0)	**86.2** (82.3-89.3)	**136** (128-142)	**163** (154-171)	2627
	09-10	**42.7** (40.8-44.7)	**45.2** (43.6-47.3)	**79.9** (75.9-83.0)	**121** (112-130)	**160** (147-180)	2848
Age group							
6-11 years	99-00	**78.2** (61.0-100)	**84.8** (67.7-105)	**126** (106-147)	**178** (147-259)	**267** (159-840)	310
	01-02	**63.3** (53.4-75.0)	**69.2** (63.0-77.6)	**109** (94.5-124)	**169** (138-197)	**197** (161-291)	368
	03-04	**62.2** (56.7-68.3)	**71.3** (55.7-84.1)	**108** (92.7-122)	**138** (127-152)	**181** (138-235)	290
	05-06	**65.6** (56.6-76.0)	**73.5** (62.8-85.5)	**108** (98.6-115)	**154** (130-176)	**181** (154-205)	355
	07-08	**69.3** (60.8-79.0)	**72.8** (62.1-83.9)	**123** (99.9-148)	**169** (154-217)	**235** (169-282)	394
	09-10	**65.0** (57.8-73.2)	**69.7** (61.1-84.2)	**123** (103-138)	**180** (146-205)	**218** (180-263)	378
12-19 years	99-00	**54.3** (47.6-62.0)	**60.6** (52.2-70.3)	**93.3** (79.9-109)	**146** (112-171)	**188** (146-216)	648
	01-02	**60.6** (55.5-66.2)	**65.7** (58.7-73.1)	**97.1** (91.8-108)	**145** (129-159)	**179** (155-227)	762
	03-04	**52.5** (49.0-56.3)	**59.6** (55.5-65.1)	**87.3** (84.5-91.4)	**118** (105-125)	**143** (130-156)	725
	05-06	**59.1** (53.7-65.1)	**63.8** (57.9-69.4)	**96.6** (86.3-103)	**136** (127-147)	**173** (148-202)	701
	07-08	**64.1** (58.6-70.2)	**68.6** (63.7-80.2)	**107** (97.2-118)	**149** (125-167)	**174** (151-196)	376
	09-10	**52.4** (47.5-57.7)	**58.5** (51.4-65.6)	**96.2** (85.0-104)	**148** (120-170)	**178** (151-201)	451
20 years and older	99-00	**41.7** (36.7-47.4)	**46.6** (40.5-52.5)	**76.7** (73.4-82.2)	**126** (114-134)	**168** (143-206)	1299
	01-02	**41.1** (38.3-44.1)	**47.6** (43.7-51.2)	**79.1** (71.9-83.6)	**114** (103-124)	**150** (130-166)	1560
	03-04	**35.9** (34.0-38.0)	**40.3** (37.6-42.1)	**71.5** (67.3-75.2)	**105** (98.6-111)	**133** (119-144)	1543
	05-06	**41.3** (38.7-44.0)	**46.0** (41.7-49.6)	**75.7** (72.1-80.3)	**116** (107-127)	**153** (135-171)	1520
	07-08	**40.8** (38.7-43.0)	**44.5** (42.2-47.8)	**77.7** (74.1-81.2)	**123** (114-135)	**152** (145-164)	1857
	09-10	**39.6** (37.5-41.8)	**42.0** (39.8-43.9)	**73.5** (69.0-76.8)	**107** (100-113)	**144** (130-163)	2019
Gender							
Males	99-00	**52.7** (45.7-60.7)	**57.5** (48.5-68.4)	**93.2** (83.8-106)	**150** (128-187)	**215** (161-278)	1121
	01-02	**51.0** (46.6-55.7)	**56.9** (52.0-62.6)	**88.5** (81.6-96.5)	**130** (120-141)	**169** (145-194)	1335
	03-04	**45.5** (43.3-47.8)	**51.0** (48.1-55.4)	**85.8** (82.8-90.7)	**119** (112-130)	**148** (136-163)	1281
	05-06	**50.9** (48.2-53.9)	**56.0** (51.0-60.3)	**85.7** (80.3-92.8)	**130** (122-136)	**161** (145-177)	1271
	07-08	**50.6** (48.1-53.2)	**56.7** (52.4-60.6)	**93.6** (88.7-98.7)	**148** (137-150)	**171** (159-178)	1327
	09-10	**46.2** (43.5-49.1)	**50.2** (46.4-52.7)	**81.8** (77.0-85.9)	**127** (113-144)	**169** (147-197)	1398
Females	99-00	**40.4** (34.8-46.8)	**45.6** (40.4-52.0)	**77.3** (71.0-85.7)	**119** (105-138)	**154** (132-180)	1136
	01-02	**39.9** (37.2-42.9)	**45.8** (42.8-49.3)	**78.4** (72.6-82.9)	**115** (104-128)	**158** (130-177)	1355
	03-04	**34.9** (32.2-37.7)	**37.9** (33.5-41.6)	**67.3** (64.6-72.2)	**101** (97.3-108)	**127** (114-139)	1277
	05-06	**40.0** (36.4-43.8)	**45.6** (40.0-51.0)	**75.6** (71.2-82.0)	**118** (107-128)	**154** (136-179)	1305
	07-08	**40.5** (38.1-43.0)	**43.5** (39.0-48.0)	**77.0** (72.0-84.5)	**123** (114-134)	**152** (142-165)	1300
	09-10	**39.6** (36.9-42.4)	**41.4** (39.0-43.8)	**76.8** (70.7-82.0)	**114** (106-127)	**151** (135-170)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.8, 0.8, 1.5, 0.92, 0.92, and 0.92 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Molybdenum (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**47.0** (42.1-52.4)	**53.2** (49.2-59.0)	**80.6** (73.7-91.7)	**121** (103-139)	**152** (120-217)	780
	01-02	**49.3** (46.5-52.3)	**55.7** (50.4-61.0)	**86.4** (80.8-94.1)	**133** (113-155)	**177** (142-207)	683
	03-04	**47.0** (43.1-51.1)	**54.4** (48.2-59.9)	**82.9** (73.2-91.0)	**121** (106-143)	**152** (141-169)	618
	05-06	**55.1** (51.7-58.7)	**58.4** (54.1-63.6)	**98.3** (91.5-105)	**140** (134-150)	**177** (153-200)	652
	07-08	**53.3** (47.6-59.6)	**57.3** (49.6-64.3)	**90.4** (82.5-97.2)	**140** (125-156)	**176** (154-191)	515
	09-10	**49.4** (45.9-53.2)	**51.1** (46.4-55.4)	**81.4** (76.2-85.9)	**134** (115-149)	**180** (148-231)	613
Non-Hispanic blacks	99-00	**57.7** (51.0-65.2)	**62.2** (55.0-71.5)	**97.8** (85.0-110)	**153** (126-188)	**206** (150-274)	546
	01-02	**53.2** (49.9-56.7)	**60.3** (55.1-63.8)	**90.0** (81.0-101)	**132** (121-147)	**166** (147-170)	667
	03-04	**46.0** (41.7-50.8)	**46.2** (40.9-55.2)	**82.3** (73.3-91.3)	**117** (109-129)	**156** (135-175)	723
	05-06	**48.1** (44.7-51.8)	**52.0** (48.3-55.7)	**80.0** (71.6-89.4)	**125** (112-133)	**160** (139-189)	692
	07-08	**51.9** (45.6-59.1)	**56.9** (47.5-65.8)	**90.3** (83.0-102)	**137** (118-158)	**168** (147-180)	589
	09-10	**45.8** (41.4-50.8)	**52.1** (47.9-55.6)	**85.6** (77.7-94.0)	**132** (107-166)	**184** (152-216)	544
Non-Hispanic whites	99-00	**44.5** (37.0-53.4)	**48.5** (41.1-59.8)	**85.0** (76.7-96.5)	**135** (119-154)	**187** (146-223)	760
	01-02	**42.2** (38.5-46.2)	**48.9** (44.2-53.2)	**80.7** (71.9-85.8)	**117** (108-129)	**152** (134-180)	1132
	03-04	**37.1** (34.7-39.6)	**41.3** (38.1-44.5)	**75.2** (69.2-79.6)	**107** (99.3-115)	**130** (119-142)	1074
	05-06	**42.8** (39.7-46.1)	**48.6** (42.3-53.4)	**79.0** (73.5-84.0)	**123** (108-132)	**156** (136-178)	1041
	07-08	**41.7** (39.2-44.5)	**46.5** (42.9-49.8)	**81.2** (76.6-86.6)	**131** (119-142)	**153** (149-164)	1095
	09-10	**40.6** (38.1-43.1)	**42.6** (39.6-45.3)	**75.9** (70.6-81.0)	**114** (104-123)	**148** (134-166)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.8, 0.8, 1.5, 0.92, 0.92, and 0.92 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Molybdenum (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**37.1** (35.1-39.1)	**40.0** (37.6-42.2)	**69.1** (64.9-74.8)	**111** (102-123)	**146** (140-160)	2504
Age group							
6-11 years	11-12	**58.4** (51.5-66.2)	**65.1** (52.8-74.5)	**116** (95.6-129)	**168** (145-199)	**211** (187-283)	399
12-19 years	11-12	**46.4** (40.2-53.7)	**51.0** (44.2-61.8)	**83.6** (70.1-97.7)	**141** (106-153)	**163** (145-173)	390
20 years and older	11-12	**34.1** (31.8-36.5)	**37.3** (33.6-39.8)	**63.6** (59.2-69.2)	**101** (92.9-109)	**136** (120-146)	1715
Gender							
Males	11-12	**42.5** (38.6-46.9)	**45.9** (39.7-52.6)	**77.1** (71.2-84.0)	**122** (105-135)	**146** (136-173)	1262
Females	11-12	**32.5** (30.0-35.2)	**33.7** (30.5-38.7)	**61.5** (57.7-66.9)	**102** (92.9-117)	**148** (121-170)	1242
Race/ethnicity							
Mexican Americans	11-12	**44.1** (39.8-49.0)	**49.4** (41.6-52.9)	**78.8** (72.1-87.0)	**117** (102-146)	**167** (136-214)	317
Non-Hispanic blacks	11-12	**44.4** (41.3-47.7)	**48.6** (44.6-51.8)	**78.5** (70.8-89.4)	**125** (110-139)	**158** (138-177)	669
Non-Hispanic whites	11-12	**33.8** (31.4-36.4)	**36.9** (32.0-40.2)	**64.4** (59.4-69.4)	**103** (94.2-117)	**141** (125-146)	820
All Hispanics	11-12	**43.3** (38.9-48.2)	**47.6** (40.2-53.7)	**81.4** (70.5-90.3)	**123** (113-141)	**167** (145-184)	573
Asians	11-12	**44.2** (38.8-50.4)	**49.7** (44.0-55.2)	**83.0** (72.0-95.9)	**124** (106-157)	**166** (126-227)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.99.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Molybdenum (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**43.2** (40.0-46.6)	**41.6** (38.5-45.2)	**63.5** (59.3-68.8)	**108** (97.3-115)	**144** (125-171)	2257
	01-02	**42.5** (39.9-45.2)	**42.2** (40.1-45.2)	**62.0** (58.4-66.4)	**98.8** (90.1-109)	**130** (120-149)	2689
	03-04	**39.4** (37.6-41.3)	**39.2** (37.9-40.7)	**58.3** (55.6-61.5)	**89.0** (80.5-99.0)	**120** (107-135)	2558
	05-06	**44.3** (42.4-46.3)	**43.9** (41.8-45.7)	**65.9** (61.8-68.6)	**97.3** (92.5-103)	**132** (125-143)	2576
	07-08	**47.1** (45.8-48.4)	**46.3** (44.8-47.7)	**72.4** (68.7-74.3)	**104** (96.7-111)	**137** (127-152)	2627
	09-10	**45.5** (43.2-47.8)	**44.4** (41.9-47.4)	**67.2** (64.7-69.4)	**105** (95.4-121)	**143** (129-157)	2848
Age group							
6-11 years	99-00	**85.9** (73.7-100)	**79.3** (71.6-88.4)	**122** (107-133)	**173** (130-243)	**214** (154-1040)	310
	01-02	**77.2** (73.1-81.5)	**77.6** (71.8-84.5)	**109** (99.4-120)	**159** (129-170)	**185** (165-219)	368
	03-04	**72.5** (65.2-80.7)	**73.5** (65.1-79.9)	**101** (84.9-117)	**132** (107-158)	**160** (129-257)	290
	05-06	**81.0** (71.9-91.3)	**78.6** (72.1-89.0)	**112** (93.7-134)	**161** (133-199)	**201** (160-261)	355
	07-08	**90.4** (81.8-99.8)	**88.2** (79.2-101)	**133** (113-147)	**206** (159-259)	**274** (224-354)	394
	09-10	**88.6** (81.9-95.9)	**89.0** (79.2-95.4)	**131** (123-148)	**174** (154-191)	**195** (178-216)	378
12-19 years	99-00	**41.9** (39.3-44.6)	**40.5** (37.7-44.4)	**57.3** (51.5-62.5)	**85.4** (67.4-107)	**112** (78.4-185)	648
	01-02	**43.4** (40.8-46.1)	**44.1** (40.8-47.2)	**60.8** (57.6-63.7)	**85.5** (79.7-93.8)	**106** (94.8-118)	762
	03-04	**37.5** (35.4-39.8)	**38.9** (36.9-41.8)	**53.2** (50.3-56.1)	**71.9** (64.6-76.9)	**81.0** (74.3-102)	725
	05-06	**45.5** (42.5-48.7)	**45.7** (41.3-49.2)	**64.6** (58.5-71.2)	**91.4** (75.3-102)	**109** (95.0-131)	701
	07-08	**50.1** (47.2-53.2)	**50.1** (44.2-53.4)	**71.6** (64.0-79.6)	**95.8** (85.1-107)	**129** (99.5-138)	376
	09-10	**49.0** (45.3-53.0)	**50.7** (44.6-56.2)	**67.6** (63.0-73.1)	**93.6** (85.8-101)	**126** (96.4-134)	451
20 years and older	99-00	**39.6** (36.9-42.6)	**38.5** (36.1-41.0)	**56.4** (53.5-60.7)	**92.5** (83.1-100)	**122** (116-147)	1299
	01-02	**39.3** (36.8-42.0)	**39.6** (36.4-42.1)	**57.2** (52.9-61.0)	**86.7** (75.2-96.8)	**123** (109-139)	1559
	03-04	**36.9** (35.0-38.9)	**37.0** (35.7-38.4)	**53.5** (50.0-56.9)	**79.8** (75.9-87.5)	**118** (101-134)	1543
	05-06	**41.2** (39.3-43.1)	**40.5** (38.8-42.7)	**59.1** (55.6-62.8)	**87.9** (79.7-96.9)	**119** (103-132)	1520
	07-08	**43.5** (42.1-44.9)	**42.9** (41.3-44.7)	**64.9** (61.7-69.9)	**94.7** (90.8-97.1)	**122** (110-132)	1857
	09-10	**41.9** (40.0-43.9)	**41.2** (39.4-43.0)	**61.9** (59.0-64.0)	**90.4** (84.3-98.5)	**127** (115-141)	2019
Gender							
Males	99-00	**40.8** (37.5-44.3)	**38.5** (37.2-40.4)	**62.4** (55.9-68.4)	**101** (83.9-118)	**131** (112-179)	1121
	01-02	**40.3** (37.1-43.8)	**40.2** (36.3-43.3)	**60.5** (54.8-66.3)	**91.3** (83.4-106)	**123** (107-155)	1334
	03-04	**38.3** (36.1-40.7)	**37.8** (36.1-39.3)	**56.3** (53.3-59.3)	**85.7** (77.2-96.7)	**118** (100-139)	1281
	05-06	**41.8** (39.5-44.2)	**41.7** (39.2-44.1)	**62.1** (58.1-67.4)	**94.6** (84.2-101)	**126** (112-132)	1271
	07-08	**45.3** (43.8-46.8)	**44.6** (42.9-46.7)	**72.3** (65.4-74.8)	**105** (96.0-118)	**135** (126-152)	1327
	09-10	**42.1** (39.6-44.9)	**41.3** (38.7-44.2)	**63.4** (59.4-67.4)	**101** (88.3-121)	**139** (123-151)	1398
Females	99-00	**45.5** (41.5-50.0)	**44.1** (39.5-48.8)	**64.4** (59.5-70.5)	**112** (95.2-121)	**152** (122-181)	1136
	01-02	**44.6** (42.2-47.1)	**45.1** (42.2-46.9)	**63.6** (59.5-69.4)	**107** (92.5-119)	**136** (117-169)	1355
	03-04	**40.5** (38.1-43.0)	**41.1** (38.7-43.7)	**61.4** (56.8-65.1)	**90.1** (82.2-103)	**122** (115-142)	1277
	05-06	**46.9** (44.7-49.2)	**46.5** (43.9-48.8)	**67.2** (63.3-71.7)	**103** (93.6-110)	**157** (126-173)	1305
	07-08	**48.9** (47.2-50.7)	**48.3** (45.7-51.0)	**72.6** (69.2-74.4)	**103** (93.6-116)	**139** (113-177)	1300
	09-10	**48.9** (46.4-51.5)	**48.8** (45.8-51.5)	**70.1** (67.2-73.9)	**109** (97.1-125)	**148** (137-162)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Molybdenum (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**42.9** (40.6-45.4)	**43.2** (40.9-45.6)	**61.6** (57.2-65.5)	**89.5** (80.0-103)	**115** (93.7-137)	780
	01-02	**48.1** (44.3-52.2)	**48.4** (44.8-52.3)	**71.7** (66.4-76.0)	**103** (90.0-120)	**129** (109-155)	682
	03-04	**43.5** (40.5-46.8)	**43.5** (41.0-46.2)	**62.8** (56.8-67.2)	**85.9** (79.5-97.0)	**112** (97.0-133)	618
	05-06	**51.8** (49.9-53.8)	**52.1** (49.7-54.7)	**73.5** (69.5-77.4)	**106** (99.5-111)	**133** (112-151)	652
	07-08	**53.3** (50.2-56.5)	**51.9** (47.1-55.3)	**77.9** (70.6-82.1)	**113** (103-129)	**151** (132-185)	515
	09-10	**51.8** (48.9-54.9)	**51.4** (48.3-54.8)	**74.0** (68.7-78.8)	**109** (92.7-125)	**148** (125-173)	613
Non-Hispanic blacks	99-00	**37.2** (33.4-41.6)	**37.1** (33.0-41.2)	**55.9** (49.6-63.3)	**88.2** (69.1-112)	**119** (88.3-141)	546
	01-02	**36.5** (34.1-39.0)	**37.5** (35.1-38.9)	**57.1** (49.7-62.4)	**78.3** (71.5-92.0)	**109** (81.1-127)	667
	03-04	**33.1** (30.5-35.9)	**31.7** (30.1-34.7)	**47.2** (43.7-52.1)	**72.9** (64.6-78.4)	**90.5** (78.4-118)	723
	05-06	**34.9** (33.1-36.8)	**35.4** (32.7-38.1)	**53.5** (49.7-55.8)	**81.1** (75.4-89.4)	**102** (89.4-119)	692
	07-08	**38.0** (34.8-41.4)	**38.7** (34.2-43.0)	**57.0** (52.7-60.2)	**82.0** (73.2-92.4)	**105** (92.0-118)	589
	09-10	**36.3** (32.9-40.1)	**37.2** (35.1-39.5)	**54.7** (50.3-60.4)	**85.2** (68.6-110)	**121** (97.1-155)	544
Non-Hispanic whites	99-00	**44.5** (40.2-49.2)	**42.1** (38.8-47.3)	**65.3** (58.9-71.3)	**116** (101-126)	**172** (131-195)	760
	01-02	**42.5** (39.3-46.0)	**41.9** (39.3-45.6)	**61.2** (57.1-67.2)	**104** (88.7-120)	**138** (120-163)	1132
	03-04	**39.1** (37.2-41.1)	**39.3** (37.7-40.8)	**58.1** (54.6-61.4)	**87.4** (78.9-96.7)	**118** (106-134)	1074
	05-06	**44.5** (42.4-46.6)	**43.9** (41.7-45.7)	**65.0** (59.9-68.5)	**97.3** (90.7-105)	**132** (119-152)	1041
	07-08	**46.7** (45.0-48.6)	**46.1** (43.6-48.4)	**72.4** (65.8-75.1)	**103** (95.7-113)	**135** (120-152)	1095
	09-10	**45.3** (42.4-48.5)	**44.2** (41.5-48.4)	**66.6** (63.1-69.3)	**101** (88.4-124)	**141** (121-159)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Molybdenum (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**42.0** (40.4-43.6)	**41.0** (38.6-44.4)	**62.9** (61.2-65.5)	**95.1** (90.9-101)	**130** (118-148)	2502
Age group							
6-11 years	11-12	**83.5** (76.1-91.6)	**81.7** (74.3-91.2)	**120** (110-129)	**178** (146-240)	**259** (185-300)	398
12-19 years	11-12	**44.4** (40.8-48.4)	**43.7** (39.1-48.0)	**62.0** (57.8-65.9)	**90.4** (76.5-94.8)	**109** (92.4-131)	390
20 years and older	11-12	**38.6** (37.1-40.2)	**38.5** (36.1-41.0)	**57.9** (53.9-61.2)	**85.0** (79.5-89.3)	**112** (102-123)	1714
Gender							
Males	11-12	**39.8** (37.5-42.2)	**40.0** (36.0-43.6)	**59.5** (56.1-62.9)	**88.2** (84.7-96.7)	**118** (108-131)	1261
Females	11-12	**44.2** (41.5-47.0)	**43.3** (39.2-45.5)	**67.1** (62.8-69.7)	**102** (92.4-111)	**149** (118-157)	1241
Race/ethnicity							
Mexican Americans	11-12	**49.6** (43.1-57.1)	**48.9** (43.0-56.0)	**72.8** (63.6-85.3)	**114** (85.7-149)	**164** (114-224)	317
Non-Hispanic blacks	11-12	**34.5** (32.1-37.1)	**34.0** (32.0-36.1)	**52.4** (48.0-58.3)	**80.7** (70.7-91.7)	**104** (87.4-120)	669
Non-Hispanic whites	11-12	**40.8** (38.4-43.4)	**40.0** (37.0-44.6)	**61.3** (57.2-64.6)	**91.6** (84.9-101)	**118** (109-148)	818
All Hispanics	11-12	**48.5** (44.5-52.8)	**48.7** (44.4-51.9)	**71.5** (65.5-76.8)	**105** (90.4-122)	**146** (112-181)	573
Asians	11-12	**59.1** (54.2-64.5)	**59.5** (51.6-65.2)	**91.5** (81.6-102)	**158** (137-174)	**202** (163-248)	353

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Platinum (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2690
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	**.009** (<LOD-.012)	**.014** (.009-.025)	2576
	07-08	*	< LOD	< LOD	< LOD	< LOD	2627
	09-10	*	< LOD	< LOD	**.009** (<LOD-.015)	**.016** (.009-.049)	2847
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	**.010** (<LOD-.011)	**.014** (.010-.020)	355
	07-08	*	< LOD	< LOD	< LOD	**.009** (<LOD-.011)	394
	09-10	*	< LOD	< LOD	**.010** (<LOD-.014)	**.015** (.009-.036)	378
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	< LOD	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	**.012** (.009-.019)	701
	07-08	*	< LOD	< LOD	< LOD	**.009** (<LOD-.017)	376
	09-10	*	< LOD	< LOD	**.010** (<LOD-.019)	**.018** (<LOD-.078)	451
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1560
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	**.009** (<LOD-.014)	**.014** (.009-.032)	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1857
	09-10	*	< LOD	< LOD	**.009** (<LOD-.016)	**.017** (.009-.049)	2018
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	< LOD	1335
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	**.009** (<LOD-.012)	**.012** (.009-.020)	1271
	07-08	*	< LOD	< LOD	< LOD	< LOD	1327
	09-10	*	< LOD	< LOD	**.009** (<LOD-.015)	**.016** (<LOD-.047)	1397
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	**.010** (<LOD-.014)	**.015** (.010-.033)	1305
	07-08	*	< LOD	< LOD	< LOD	**.009** (<LOD-.009)	1300
	09-10	*	< LOD	< LOD	**.010** (<LOD-.015)	**.017** (.009-.051)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.07, 0.009, 0.009, and 0.009 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Platinum_BiomonitoringSummary.html

Urinary Platinum (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	884
	01-02	*	< LOD	< LOD	< LOD	< LOD	683
	03-04	*	< LOD	< LOD	< LOD	< LOD	618
	05-06	*	< LOD	< LOD	.010 (<LOD-.014)	.014 (.009-.023)	652
	07-08	*	< LOD	< LOD	< LOD	.009 (<LOD-.010)	515
	09-10	*	< LOD	< LOD	< LOD	.010 (.009-.012)	613
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	568
	01-02	*	< LOD	< LOD	< LOD	< LOD	667
	03-04	*	< LOD	< LOD	< LOD	< LOD	723
	05-06	*	< LOD	< LOD	< LOD	.011 (.009-.016)	692
	07-08	*	< LOD	< LOD	< LOD	.009 (<LOD-.013)	589
	09-10	*	< LOD	< LOD	.012 (<LOD-.032)	.024 (.009-.103)	544
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	822
	01-02	*	< LOD	< LOD	< LOD	< LOD	1132
	03-04	*	< LOD	< LOD	< LOD	< LOD	1074
	05-06	*	< LOD	< LOD	.009 (<LOD-.012)	.013 (.009-.026)	1041
	07-08	*	< LOD	< LOD	< LOD	.009 (<LOD-.009)	1095
	09-10	*	< LOD	< LOD	.009 (<LOD-.019)	.018 (<LOD-.073)	1224

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.07, 0.009, 0.009, and 0.009 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Platinum_BiomonitoringSummary.html

Urinary Platinum (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2689
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	**.021** (<LOD-.023)	**.029** (.026-.035)	2576
	07-08	*	< LOD	< LOD	< LOD	< LOD	2627
	09-10	*	< LOD	< LOD	**.023** (<LOD-.027)	**.033** (.026-.046)	2847
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	**.020** (<LOD-.027)	**.030** (.021-.050)	355
	07-08	*	< LOD	< LOD	< LOD	**.026** (<LOD-.032)	394
	09-10	*	< LOD	< LOD	**.026** (<LOD-.030)	**.043** (.027-.050)	378
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	< LOD	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	**.017** (.012-.026)	701
	07-08	*	< LOD	< LOD	< LOD	**.017** (<LOD-.025)	376
	09-10	*	< LOD	< LOD	**.021** (<LOD-.029)	**.032** (<LOD-.050)	451
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1559
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	**.022** (<LOD-.025)	**.030** (.026-.035)	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1857
	09-10	*	< LOD	< LOD	**.023** (<LOD-.030)	**.035** (.024-.050)	2018
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	< LOD	1334
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	**.014** (<LOD-.016)	**.021** (.016-.025)	1271
	07-08	*	< LOD	< LOD	< LOD	< LOD	1327
	09-10	*	< LOD	< LOD	**.019** (<LOD-.025)	**.027** (<LOD-.036)	1397
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	**.026** (<LOD-.030)	**.033** (.029-.050)	1305
	07-08	*	< LOD	< LOD	< LOD	**.033** (<LOD-.043)	1300
	09-10	*	< LOD	< LOD	**.027** (<LOD-.032)	**.038** (.030-.054)	1450

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Platinum_BiomonitoringSummary.html

Urinary Platinum (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	884
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	682
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	618
	05-06	*	**< LOD**	**< LOD**	**.016** (<LOD-.019)	**.023** (.017-.032)	652
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.025** (<LOD-.033)	515
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.025** (.021-.029)	613
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	568
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	667
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	723
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.018** (.014-.022)	692
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.017** (<LOD-.021)	589
	09-10	*	**< LOD**	**< LOD**	**.017** (<LOD-.024)	**.027** (.019-.050)	544
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	822
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1132
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1074
	05-06	*	**< LOD**	**< LOD**	**.023** (<LOD-.025)	**.030** (.027-.035)	1041
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.030** (<LOD-.038)	1095
	09-10	*	**< LOD**	**< LOD**	**.025** (<LOD-.032)	**.036** (<LOD-.058)	1224

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Platinum_BiomonitoringSummary.html

Blood Selenium (2011 - 2012)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**190** (187-193)	**190** (187-193)	**206** (203-210)	**223** (219-228)	**236** (231-241)	7920
Age group							
1-5 years	11-12	**167** (164-171)	**167** (163-172)	**181** (175-187)	**196** (187-201)	**201** (197-207)	713
6-11 years	11-12	**176** (172-180)	**177** (172-181)	**189** (185-193)	**201** (197-206)	**208** (205-215)	1048
12-19 years	11-12	**189** (184-193)	**189** (182-194)	**206** (198-211)	**220** (212-231)	**232** (221-245)	1129
20 years and older	11-12	**193** (190-196)	**193** (190-196)	**209** (205-213)	**227** (222-231)	**238** (233-243)	5030
Gender							
Males	11-12	**192** (189-195)	**192** (188-195)	**208** (204-213)	**227** (221-232)	**238** (232-243)	3968
Females	11-12	**188** (185-191)	**188** (186-191)	**204** (201-207)	**220** (218-224)	**233** (227-240)	3952
Race/ethnicity							
Mexican Americans	11-12	**189** (184-194)	**189** (183-195)	**205** (200-209)	**220** (217-223)	**229** (224-233)	1077
Non-Hispanic blacks	11-12	**184** (181-187)	**183** (180-187)	**199** (196-202)	**216** (211-220)	**226** (220-233)	2195
Non-Hispanic whites	11-12	**192** (188-196)	**192** (188-196)	**208** (204-213)	**227** (220-232)	**238** (231-245)	2493
All Hispanics	11-12	**187** (183-191)	**188** (183-192)	**203** (198-208)	**218** (214-222)	**228** (223-234)	1931
Asians	11-12	**193** (189-197)	**192** (188-196)	**210** (204-215)	**227** (223-235)	**243** (233-253)	1005

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 30.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Serum Selenium (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**127** (125-130)	**127** (124-130)	**139** (136-142)	**151** (148-155)	**161** (156-164)	2329
Age group							
6-11 years	11-12	**117** (115-119)	**118** (115-120)	**128** (124-130)	**133** (132-136)	**138** (135-140)	316
12-19 years	11-12	**125** (122-128)	**124** (121-127)	**136** (130-139)	**145** (139-153)	**154** (143-178)	366
20 years and older	11-12	**129** (126-132)	**129** (125-132)	**141** (138-144)	**153** (149-157)	**163** (158-166)	1647
Gender							
Males	11-12	**129** (127-132)	**129** (126-132)	**142** (138-145)	**153** (147-162)	**163** (155-167)	1162
Females	11-12	**125** (123-128)	**125** (122-129)	**137** (134-141)	**149** (145-154)	**158** (151-166)	1167
Race/ethnicity							
Mexican Americans	11-12	**126** (124-128)	**124** (122-127)	**137** (134-140)	**151** (142-157)	**157** (153-163)	285
Non-Hispanic blacks	11-12	**122** (120-124)	**122** (119-124)	**132** (130-134)	**143** (139-145)	**149** (145-157)	620
Non-Hispanic whites	11-12	**129** (126-133)	**129** (125-133)	**142** (138-145)	**154** (149-158)	**163** (158-167)	780
All Hispanics	11-12	**125** (123-126)	**123** (122-125)	**135** (131-140)	**149** (144-153)	**157** (151-163)	525
Asians	11-12	**126** (123-129)	**124** (120-128)	**137** (135-140)	**152** (143-158)	**158** (152-171)	323

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 4.5.

Urinary Strontium (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**85.8** (80.8-91.1)	**90.5** (82.6-98.2)	**167** (156-176)	**249** (229-269)	**321** (288-352)	2503
Age group							
6-11 years	11-12	**81.9** (69.7-96.2)	**91.7** (72.8-106)	**179** (135-226)	**285** (236-319)	**349** (265-466)	399
12-19 years	11-12	**96.8** (82.3-114)	**101** (86.4-128)	**185** (160-215)	**296** (226-348)	**350** (274-426)	390
20 years and older	11-12	**84.6** (79.5-90.1)	**87.8** (79.9-95.5)	**160** (154-171)	**239** (222-262)	**307** (271-346)	1714
Gender							
Males	11-12	**95.8** (88.7-103)	**102** (95.6-114)	**172** (157-189)	**255** (215-291)	**307** (277-358)	1262
Females	11-12	**77.2** (71.5-83.4)	**78.3** (72.4-85.2)	**156** (140-173)	**243** (221-270)	**331** (276-355)	1241
Race/ethnicity							
Mexican Americans	11-12	**85.8** (76.0-96.8)	**89.4** (76.1-103)	**189** (165-200)	**258** (228-266)	**302** (260-345)	317
Non-Hispanic blacks	11-12	**74.9** (68.0-82.4)	**82.8** (75.8-91.3)	**143** (132-160)	**221** (194-239)	**269** (239-298)	669
Non-Hispanic whites	11-12	**87.2** (80.4-94.6)	**91.1** (81.0-100)	**169** (154-180)	**256** (214-296)	**343** (278-391)	819
All Hispanics	11-12	**85.6** (74.8-98.0)	**89.4** (77.8-108)	**170** (151-198)	**246** (221-262)	**289** (260-325)	573
Asians	11-12	**97.0** (85.7-110)	**98.4** (84.8-121)	**187** (161-206)	**280** (239-303)	**343** (288-384)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.5.

Urinary Strontium (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**97.2** (90.1-105)	**99.7** (91.4-110)	**156** (143-174)	**240** (221-258)	**320** (287-341)	2501
Age group							
6-11 years	11-12	**118** (104-133)	**124** (105-150)	**222** (185-245)	**288** (271-338)	**354** (299-507)	398
12-19 years	11-12	**92.6** (79.6-108)	**95.3** (73.9-119)	**150** (122-172)	**221** (175-248)	**279** (228-320)	390
20 years and older	11-12	**95.9** (89.0-103)	**98.6** (91.0-109)	**155** (140-171)	**233** (213-255)	**315** (278-346)	1713
Gender							
Males	11-12	**89.5** (82.2-97.5)	**91.8** (86.2-101)	**142** (130-159)	**210** (190-237)	**275** (239-314)	1261
Females	11-12	**105** (96.6-114)	**110** (98.5-117)	**178** (152-203)	**261** (237-313)	**346** (315-371)	1240
Race/ethnicity							
Mexican Americans	11-12	**96.5** (88.0-106)	**103** (90.3-113)	**152** (137-181)	**233** (200-274)	**283** (258-316)	317
Non-Hispanic blacks	11-12	**58.2** (53.8-63.0)	**64.7** (60.3-68.3)	**97.8** (89.3-108)	**143** (130-160)	**172** (149-216)	669
Non-Hispanic whites	11-12	**105** (94.3-118)	**109** (95.1-118)	**168** (148-200)	**255** (235-295)	**341** (313-367)	817
All Hispanics	11-12	**95.8** (87.5-105)	**102** (92.4-112)	**150** (136-172)	**213** (195-240)	**274** (222-315)	573
Asians	11-12	**130** (120-141)	**132** (117-142)	**197** (179-217)	**295** (246-336)	**405** (314-474)	353

Urinary Thallium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.176** (.162-.192)	**.200** (.180-.220)	**.290** (.270-.330)	**.400** (.370-.420)	**.450** (.430-.480)	2413
	01-02	**.165** (.154-.177)	**.190** (.180-.200)	**.280** (.260-.290)	**.370** (.350-.390)	**.440** (.410-.470)	2653
	03-04	**.155** (.145-.165)	**.170** (.160-.180)	**.270** (.250-.290)	**.370** (.340-.400)	**.440** (.410-.490)	2558
	05-06	**.158** (.151-.165)	**.180** (.170-.190)	**.270** (.260-.280)	**.360** (.350-.390)	**.430** (.410-.460)	2576
	07-08	**.146** (.139-.153)	**.160** (.150-.170)	**.250** (.230-.260)	**.330** (.320-.360)	**.400** (.390-.420)	2627
	09-10	**.144** (.137-.152)	**.160** (.150-.170)	**.240** (.230-.250)	**.340** (.310-.360)	**.410** (.380-.440)	2848
Age group							
6-11 years	99-00	**.201** (.167-.243)	**.210** (.150-.280)	**.310** (.250-.350)	**.410** (.330-.450)	**.450** (.350-.590)	336
	01-02	**.172** (.147-.202)	**.200** (.160-.220)	**.290** (.230-.330)	**.350** (.340-.370)	**.390** (.360-.430)	362
	03-04	**.191** (.170-.215)	**.190** (.170-.230)	**.300** (.250-.370)	**.430** (.360-.500)	**.510** (.430-.690)	290
	05-06	**.174** (.158-.192)	**.190** (.170-.210)	**.280** (.250-.300)	**.380** (.320-.430)	**.430** (.400-.480)	355
	07-08	**.166** (.150-.185)	**.170** (.150-.200)	**.250** (.230-.270)	**.350** (.310-.410)	**.420** (.360-.470)	394
	09-10	**.161** (.147-.176)	**.170** (.150-.200)	**.280** (.230-.310)	**.360** (.330-.410)	**.440** (.400-.460)	378
12-19 years	99-00	**.202** (.181-.225)	**.220** (.200-.240)	**.300** (.270-.340)	**.410** (.390-.430)	**.470** (.430-.510)	697
	01-02	**.200** (.182-.220)	**.220** (.190-.250)	**.310** (.290-.320)	**.370** (.350-.420)	**.470** (.400-.500)	746
	03-04	**.201** (.185-.218)	**.220** (.210-.240)	**.310** (.290-.320)	**.410** (.360-.470)	**.500** (.420-.560)	725
	05-06	**.182** (.165-.200)	**.210** (.190-.230)	**.290** (.270-.310)	**.370** (.350-.400)	**.430** (.390-.480)	701
	07-08	**.172** (.155-.190)	**.180** (.160-.210)	**.270** (.230-.300)	**.330** (.310-.350)	**.390** (.340-.420)	376
	09-10	**.150** (.137-.163)	**.160** (.150-.180)	**.250** (.240-.270)	**.340** (.290-.380)	**.400** (.350-.430)	451
20 years and older	99-00	**.170** (.157-.183)	**.190** (.180-.210)	**.290** (.260-.320)	**.400** (.370-.420)	**.450** (.420-.480)	1380
	01-02	**.159** (.147-.173)	**.190** (.170-.200)	**.270** (.250-.290)	**.380** (.350-.400)	**.440** (.410-.490)	1545
	03-04	**.145** (.134-.156)	**.160** (.150-.170)	**.250** (.240-.270)	**.360** (.330-.390)	**.420** (.390-.460)	1543
	05-06	**.152** (.144-.161)	**.170** (.160-.180)	**.260** (.240-.270)	**.360** (.340-.390)	**.440** (.400-.470)	1520
	07-08	**.140** (.133-.148)	**.150** (.140-.160)	**.240** (.230-.250)	**.330** (.310-.360)	**.400** (.380-.440)	1857
	09-10	**.142** (.133-.150)	**.160** (.150-.170)	**.240** (.220-.250)	**.330** (.310-.360)	**.410** (.370-.440)	2019
Gender							
Males	99-00	**.197** (.179-.217)	**.220** (.200-.240)	**.320** (.280-.350)	**.400** (.370-.440)	**.450** (.420-.520)	1200
	01-02	**.184** (.173-.196)	**.210** (.200-.230)	**.290** (.280-.300)	**.380** (.360-.400)	**.430** (.400-.470)	1313
	03-04	**.167** (.156-.178)	**.190** (.180-.200)	**.280** (.260-.300)	**.370** (.340-.400)	**.430** (.400-.480)	1281
	05-06	**.171** (.163-.179)	**.190** (.180-.200)	**.270** (.260-.280)	**.370** (.360-.390)	**.430** (.410-.470)	1271
	07-08	**.154** (.148-.161)	**.170** (.160-.180)	**.250** (.240-.270)	**.340** (.320-.360)	**.390** (.380-.440)	1327
	09-10	**.152** (.140-.164)	**.170** (.150-.180)	**.250** (.240-.270)	**.330** (.310-.360)	**.410** (.360-.440)	1398
Females	99-00	**.159** (.145-.175)	**.180** (.150-.200)	**.270** (.250-.300)	**.390** (.350-.420)	**.460** (.410-.490)	1213
	01-02	**.149** (.137-.163)	**.160** (.150-.180)	**.260** (.230-.290)	**.370** (.330-.400)	**.440** (.400-.500)	1340
	03-04	**.144** (.133-.156)	**.160** (.140-.170)	**.250** (.230-.280)	**.370** (.330-.410)	**.450** (.410-.510)	1277
	05-06	**.146** (.138-.155)	**.160** (.150-.180)	**.260** (.240-.270)	**.360** (.350-.380)	**.440** (.400-.460)	1305
	07-08	**.139** (.129-.148)	**.150** (.130-.160)	**.240** (.220-.260)	**.330** (.300-.390)	**.410** (.380-.430)	1300
	09-10	**.137** (.129-.146)	**.150** (.140-.160)	**.230** (.210-.250)	**.340** (.310-.360)	**.410** (.380-.450)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.02, 0.02, 0.02, 0.015, 0.015, and 0.015 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Thallium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.172** (.150-.196)	**.200** (.160-.230)	**.270** (.250-.300)	**.370** (.320-.420)	**.450** (.370-.520)	861
	01-02	**.160** (.148-.173)	**.180** (.160-.200)	**.260** (.240-.270)	**.340** (.310-.360)	**.400** (.350-.440)	675
	03-04	**.171** (.160-.183)	**.200** (.170-.220)	**.280** (.260-.310)	**.360** (.340-.420)	**.450** (.390-.480)	618
	05-06	**.158** (.149-.167)	**.180** (.170-.190)	**.250** (.240-.270)	**.330** (.300-.360)	**.400** (.360-.440)	652
	07-08	**.151** (.140-.164)	**.170** (.150-.180)	**.250** (.220-.270)	**.330** (.310-.360)	**.380** (.350-.390)	515
	09-10	**.147** (.139-.155)	**.160** (.150-.180)	**.240** (.210-.260)	**.310** (.290-.320)	**.390** (.320-.430)	613
Non-Hispanic blacks	99-00	**.217** (.197-.239)	**.230** (.220-.260)	**.350** (.300-.390)	**.450** (.400-.520)	**.550** (.460-.630)	561
	01-02	**.202** (.187-.218)	**.220** (.200-.230)	**.300** (.270-.340)	**.410** (.380-.440)	**.520** (.440-.590)	657
	03-04	**.185** (.167-.206)	**.190** (.170-.220)	**.290** (.250-.330)	**.410** (.330-.490)	**.490** (.410-.640)	723
	05-06	**.188** (.169-.210)	**.210** (.180-.230)	**.300** (.270-.320)	**.390** (.360-.440)	**.500** (.430-.530)	692
	07-08	**.171** (.160-.182)	**.180** (.170-.190)	**.270** (.250-.290)	**.350** (.330-.390)	**.430** (.390-.460)	589
	09-10	**.162** (.148-.177)	**.180** (.160-.200)	**.270** (.250-.280)	**.350** (.330-.400)	**.450** (.390-.510)	544
Non-Hispanic whites	99-00	**.170** (.153-.188)	**.200** (.170-.220)	**.290** (.260-.330)	**.400** (.360-.420)	**.450** (.420-.480)	801
	01-02	**.159** (.147-.172)	**.180** (.170-.200)	**.270** (.250-.290)	**.360** (.330-.390)	**.430** (.390-.460)	1114
	03-04	**.146** (.135-.158)	**.160** (.150-.170)	**.260** (.240-.280)	**.360** (.330-.380)	**.410** (.380-.460)	1074
	05-06	**.150** (.140-.160)	**.170** (.160-.180)	**.260** (.240-.270)	**.350** (.320-.380)	**.420** (.390-.450)	1041
	07-08	**.138** (.130-.147)	**.150** (.130-.160)	**.240** (.220-.260)	**.320** (.300-.360)	**.390** (.350-.440)	1095
	09-10	**.139** (.130-.149)	**.150** (.140-.170)	**.240** (.210-.250)	**.330** (.300-.360)	**.400** (.360-.430)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.02, 0.02, 0.02, 0.015, 0.015, and 0.015 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Thallium (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.149** (.138-.160)	**.157** (.144-.169)	**.255** (.232-.278)	**.361** (.334-.377)	**.434** (.379-.521)	2504
Age group							
6-11 years	11-12	**.157** (.143-.172)	**.157** (.136-.195)	**.272** (.232-.308)	**.365** (.330-.474)	**.509** (.372-.629)	399
12-19 years	11-12	**.155** (.131-.184)	**.169** (.141-.196)	**.288** (.240-.301)	**.376** (.320-.403)	**.447** (.387-.545)	390
20 years and older	11-12	**.147** (.136-.159)	**.155** (.142-.167)	**.247** (.223-.274)	**.356** (.324-.377)	**.431** (.375-.520)	1715
Gender							
Males	11-12	**.165** (.150-.181)	**.173** (.151-.195)	**.272** (.239-.301)	**.369** (.343-.387)	**.431** (.381-.524)	1262
Females	11-12	**.135** (.122-.148)	**.141** (.131-.155)	**.237** (.208-.260)	**.348** (.304-.376)	**.434** (.367-.522)	1242
Race/ethnicity							
Mexican Americans	11-12	**.142** (.135-.150)	**.162** (.143-.174)	**.231** (.210-.248)	**.298** (.268-.321)	**.344** (.306-.381)	317
Non-Hispanic blacks	11-12	**.176** (.150-.206)	**.184** (.158-.214)	**.294** (.244-.364)	**.431** (.370-.503)	**.524** (.429-.657)	669
Non-Hispanic whites	11-12	**.143** (.133-.155)	**.149** (.135-.166)	**.245** (.218-.277)	**.353** (.322-.372)	**.412** (.367-.522)	820
All Hispanics	11-12	**.145** (.134-.157)	**.158** (.148-.169)	**.237** (.219-.257)	**.305** (.289-.340)	**.381** (.326-.438)	573
Asians	11-12	**.177** (.160-.197)	**.183** (.163-.214)	**.292** (.255-.319)	**.417** (.372-.489)	**.541** (.431-.664)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.02.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Thallium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.166** (.159-.173)	**.168** (.162-.176)	**.224** (.217-.233)	**.297** (.273-.319)	**.366** (.338-.387)	2413
	01-02	**.156** (.151-.162)	**.156** (.148-.164)	**.215** (.208-.222)	**.287** (.278-.300)	**.349** (.337-.365)	2652
	03-04	**.154** (.149-.158)	**.153** (.146-.160)	**.214** (.203-.222)	**.286** (.274-.304)	**.350** (.328-.369)	2558
	05-06	**.155** (.149-.162)	**.150** (.140-.160)	**.210** (.200-.220)	**.300** (.290-.320)	**.370** (.350-.390)	2576
	07-08	**.152** (.147-.158)	**.150** (.140-.160)	**.210** (.200-.220)	**.290** (.280-.310)	**.370** (.350-.380)	2627
	09-10	**.153** (.145-.162)	**.150** (.140-.160)	**.220** (.200-.230)	**.300** (.280-.320)	**.370** (.350-.400)	2848
Age group							
6-11 years	99-00	**.221** (.197-.248)	**.222** (.196-.236)	**.297** (.229-.356)	**.375** (.318-.469)	**.424** (.356-.600)	336
	01-02	**.211** (.198-.226)	**.207** (.198-.221)	**.286** (.260-.321)	**.370** (.333-.402)	**.412** (.389-.456)	362
	03-04	**.223** (.208-.238)	**.216** (.198-.229)	**.306** (.280-.346)	**.412** (.346-.458)	**.458** (.400-.532)	290
	05-06	**.215** (.200-.231)	**.210** (.190-.250)	**.310** (.270-.320)	**.360** (.320-.410)	**.430** (.360-.510)	355
	07-08	**.217** (.201-.234)	**.220** (.210-.240)	**.310** (.270-.340)	**.410** (.370-.440)	**.470** (.410-.540)	394
	09-10	**.219** (.199-.241)	**.220** (.200-.260)	**.300** (.280-.340)	**.400** (.350-.440)	**.500** (.390-.600)	378
12-19 years	99-00	**.153** (.146-.160)	**.154** (.146-.162)	**.205** (.191-.219)	**.258** (.231-.278)	**.321** (.265-.364)	697
	01-02	**.143** (.137-.150)	**.145** (.135-.152)	**.196** (.184-.207)	**.272** (.250-.289)	**.312** (.299-.333)	746
	03-04	**.143** (.135-.152)	**.146** (.131-.155)	**.194** (.179-.208)	**.254** (.234-.280)	**.304** (.271-.327)	725
	05-06	**.140** (.133-.147)	**.140** (.130-.150)	**.190** (.170-.200)	**.240** (.220-.270)	**.290** (.250-.310)	701
	07-08	**.134** (.124-.145)	**.140** (.120-.150)	**.190** (.180-.220)	**.260** (.220-.300)	**.300** (.250-.370)	376
	09-10	**.140** (.127-.155)	**.140** (.120-.160)	**.190** (.170-.220)	**.260** (.220-.310)	**.310** (.260-.370)	451
20 years and older	99-00	**.162** (.153-.171)	**.167** (.155-.176)	**.218** (.207-.230)	**.286** (.271-.300)	**.364** (.325-.389)	1380
	01-02	**.153** (.147-.159)	**.153** (.144-.161)	**.210** (.200-.217)	**.278** (.263-.293)	**.343** (.313-.362)	1544
	03-04	**.148** (.144-.153)	**.149** (.141-.156)	**.206** (.192-.215)	**.273** (.258-.289)	**.333** (.306-.353)	1543
	05-06	**.152** (.145-.159)	**.150** (.140-.160)	**.210** (.200-.210)	**.290** (.270-.310)	**.370** (.350-.400)	1520
	07-08	**.149** (.143-.156)	**.150** (.140-.160)	**.210** (.200-.220)	**.280** (.270-.300)	**.350** (.330-.380)	1857
	09-10	**.150** (.142-.157)	**.150** (.140-.160)	**.210** (.200-.220)	**.290** (.270-.320)	**.370** (.330-.400)	2019
Gender							
Males	99-00	**.154** (.147-.161)	**.156** (.149-.164)	**.202** (.192-.214)	**.269** (.254-.297)	**.338** (.300-.364)	1200
	01-02	**.146** (.140-.153)	**.148** (.142-.157)	**.192** (.184-.204)	**.260** (.246-.278)	**.307** (.291-.342)	1312
	03-04	**.140** (.135-.146)	**.142** (.134-.149)	**.188** (.180-.198)	**.264** (.235-.286)	**.317** (.287-.350)	1281
	05-06	**.140** (.134-.147)	**.140** (.130-.140)	**.190** (.180-.200)	**.270** (.240-.300)	**.320** (.300-.340)	1271
	07-08	**.138** (.131-.145)	**.130** (.130-.140)	**.190** (.180-.210)	**.270** (.250-.290)	**.330** (.300-.360)	1327
	09-10	**.138** (.129-.148)	**.130** (.130-.150)	**.190** (.170-.210)	**.270** (.240-.300)	**.330** (.290-.360)	1398
Females	99-00	**.178** (.167-.189)	**.182** (.169-.197)	**.244** (.226-.259)	**.317** (.281-.366)	**.380** (.333-.462)	1213
	01-02	**.167** (.158-.176)	**.167** (.153-.180)	**.233** (.217-.250)	**.313** (.282-.348)	**.378** (.348-.402)	1340
	03-04	**.167** (.162-.173)	**.166** (.157-.177)	**.235** (.222-.243)	**.313** (.286-.333)	**.368** (.340-.412)	1277
	05-06	**.171** (.162-.181)	**.170** (.160-.180)	**.230** (.220-.250)	**.330** (.300-.360)	**.430** (.370-.490)	1305
	07-08	**.167** (.163-.173)	**.170** (.160-.180)	**.230** (.230-.240)	**.320** (.300-.340)	**.390** (.360-.430)	1300
	09-10	**.170** (.161-.178)	**.170** (.160-.180)	**.230** (.220-.250)	**.340** (.310-.370)	**.420** (.370-.470)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Thallium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.158** (.147-.170)	**.160** (.148-.176)	**.213** (.200-.237)	**.282** (.266-.304)	**.343** (.306-.389)	861
	01-02	**.156** (.145-.169)	**.155** (.145-.167)	**.204** (.191-.221)	**.286** (.250-.317)	**.361** (.301-.424)	674
	03-04	**.159** (.148-.170)	**.157** (.143-.172)	**.211** (.187-.241)	**.293** (.273-.324)	**.369** (.326-.422)	618
	05-06	**.149** (.139-.158)	**.150** (.140-.160)	**.200** (.180-.210)	**.270** (.240-.290)	**.320** (.280-.370)	652
	07-08	**.151** (.143-.160)	**.160** (.130-.170)	**.200** (.190-.220)	**.270** (.250-.280)	**.320** (.290-.370)	515
	09-10	**.154** (.141-.167)	**.150** (.140-.170)	**.210** (.180-.230)	**.280** (.250-.330)	**.360** (.310-.430)	613
Non-Hispanic blacks	99-00	**.142** (.133-.152)	**.140** (.129-.151)	**.200** (.184-.214)	**.278** (.244-.307)	**.383** (.286-.462)	561
	01-02	**.138** (.128-.150)	**.136** (.125-.146)	**.194** (.170-.212)	**.256** (.238-.278)	**.328** (.271-.387)	657
	03-04	**.133** (.122-.145)	**.128** (.119-.143)	**.185** (.171-.200)	**.255** (.237-.269)	**.323** (.267-.377)	723
	05-06	**.137** (.128-.145)	**.130** (.130-.140)	**.190** (.180-.200)	**.240** (.220-.290)	**.320** (.270-.370)	692
	07-08	**.125** (.118-.132)	**.130** (.120-.130)	**.170** (.160-.180)	**.230** (.210-.260)	**.280** (.250-.330)	589
	09-10	**.128** (.120-.137)	**.120** (.110-.130)	**.180** (.160-.210)	**.250** (.230-.280)	**.310** (.270-.350)	544
Non-Hispanic whites	99-00	**.169** (.160-.179)	**.173** (.167-.181)	**.227** (.215-.240)	**.300** (.272-.329)	**.364** (.333-.377)	801
	01-02	**.161** (.155-.167)	**.161** (.153-.171)	**.222** (.214-.231)	**.292** (.278-.304)	**.348** (.330-.383)	1114
	03-04	**.154** (.148-.160)	**.153** (.143-.162)	**.214** (.200-.223)	**.283** (.271-.304)	**.333** (.313-.363)	1074
	05-06	**.156** (.148-.164)	**.150** (.140-.160)	**.210** (.200-.230)	**.300** (.280-.320)	**.360** (.330-.400)	1041
	07-08	**.154** (.146-.164)	**.160** (.140-.170)	**.220** (.210-.230)	**.300** (.280-.320)	**.370** (.340-.390)	1095
	09-10	**.155** (.145-.166)	**.150** (.140-.170)	**.220** (.200-.240)	**.310** (.280-.330)	**.380** (.340-.410)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Thallium (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.168** (.157-.180)	**.167** (.156-.178)	**.235** (.216-.253)	**.337** (.310-.365)	**.425** (.369-.497)	2502
Age group							
6-11 years	11-12	**.223** (.209-.238)	**.216** (.200-.241)	**.301** (.275-.336)	**.395** (.371-.440)	**.486** (.422-.568)	398
12-19 years	11-12	**.149** (.134-.165)	**.147** (.130-.169)	**.200** (.180-.218)	**.276** (.235-.321)	**.339** (.268-.500)	390
20 years and older	11-12	**.166** (.155-.179)	**.164** (.154-.175)	**.233** (.212-.250)	**.333** (.298-.367)	**.436** (.365-.510)	1714
Gender							
Males	11-12	**.154** (.142-.167)	**.155** (.144-.165)	**.211** (.197-.233)	**.292** (.258-.326)	**.353** (.312-.385)	1261
Females	11-12	**.183** (.172-.195)	**.180** (.168-.193)	**.261** (.240-.286)	**.382** (.349-.420)	**.480** (.422-.510)	1241
Race/ethnicity							
Mexican Americans	11-12	**.160** (.150-.170)	**.163** (.141-.175)	**.222** (.198-.245)	**.295** (.276-.326)	**.359** (.302-.440)	317
Non-Hispanic blacks	11-12	**.137** (.119-.157)	**.137** (.113-.159)	**.208** (.174-.244)	**.284** (.248-.334)	**.348** (.293-.406)	669
Non-Hispanic whites	11-12	**.173** (.161-.186)	**.171** (.161-.181)	**.235** (.213-.261)	**.337** (.309-.373)	**.453** (.357-.521)	818
All Hispanics	11-12	**.162** (.150-.176)	**.158** (.142-.174)	**.221** (.198-.250)	**.304** (.278-.347)	**.370** (.316-.440)	573
Asians	11-12	**.237** (.219-.256)	**.228** (.206-.250)	**.337** (.297-.367)	**.526** (.442-.586)	**.663** (.557-.830)	353

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Tin (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.621** (.569-.678)	**.530** (.470-.590)	**1.16** (.990-1.35)	**2.94** (2.43-3.44)	**4.74** (4.07-5.90)	2504
Age group							
6-11 years	11-12	**1.17** (.985-1.39)	**1.12** (.820-1.43)	**2.61** (2.24-2.95)	**5.07** (3.44-7.29)	**8.05** (5.07-12.7)	399
12-19 years	11-12	**.585** (.497-.688)	**.470** (.380-.610)	**1.21** (.880-1.60)	**2.68** (1.92-3.65)	**4.18** (3.19-4.93)	390
20 years and older	11-12	**.585** (.521-.656)	**.510** (.450-.580)	**1.02** (.870-1.24)	**2.58** (2.09-3.40)	**4.46** (3.46-5.97)	1715
Gender							
Males	11-12	**.622** (.550-.704)	**.530** (.470-.590)	**1.11** (.930-1.28)	**3.02** (2.27-3.84)	**4.89** (3.65-6.72)	1262
Females	11-12	**.620** (.558-.690)	**.550** (.460-.620)	**1.22** (.990-1.45)	**2.77** (2.29-3.36)	**4.59** (3.98-5.54)	1242
Race/ethnicity							
Mexican Americans	11-12	**.644** (.527-.786)	**.580** (.430-.700)	**1.08** (.830-1.43)	**2.66** (1.88-4.41)	**5.54** (3.10-8.30)	317
Non-Hispanic blacks	11-12	**.950** (.825-1.09)	**.860** (.740-1.00)	**1.86** (1.63-2.16)	**4.22** (3.28-5.55)	**7.73** (4.93-12.4)	669
Non-Hispanic whites	11-12	**.579** (.513-.654)	**.490** (.430-.570)	**1.03** (.830-1.28)	**2.72** (2.08-3.62)	**4.53** (3.41-6.03)	820
All Hispanics	11-12	**.642** (.575-.717)	**.570** (.460-.640)	**1.23** (.990-1.41)	**2.77** (2.12-3.29)	**4.57** (3.56-6.54)	573
Asians	11-12	**.477** (.433-.526)	**.400** (.350-.460)	**.820** (.690-1.01)	**2.00** (1.34-2.39)	**2.58** (2.21-3.90)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.22.

Urinary Tin (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.705** (.653-.761)	**.624** (.567-.678)	**1.24** (1.11-1.34)	**2.54** (2.29-2.80)	**4.50** (3.76-5.33)	2502
Age group							
6-11 years	11-12	**1.67** (1.46-1.90)	**1.60** (1.44-1.73)	**2.83** (2.61-3.31)	**5.61** (4.50-7.22)	**7.91** (6.11-12.1)	398
12-19 years	11-12	**.559** (.475-.659)	**.484** (.411-.543)	**1.03** (.725-1.39)	**1.97** (1.43-2.49)	**2.80** (2.00-3.74)	390
20 years and older	11-12	**.665** (.599-.737)	**.593** (.537-.663)	**1.11** (.956-1.30)	**2.32** (1.94-2.67)	**4.04** (3.00-5.09)	1714
Gender							
Males	11-12	**.584** (.524-.651)	**.515** (.436-.576)	**.966** (.875-1.12)	**2.29** (1.86-2.80)	**4.17** (2.80-5.55)	1261
Females	11-12	**.843** (.772-.920)	**.764** (.676-.857)	**1.42** (1.21-1.72)	**2.70** (2.51-3.19)	**4.81** (3.50-5.59)	1241
Race/ethnicity							
Mexican Americans	11-12	**.724** (.599-.874)	**.640** (.482-.785)	**1.23** (1.00-1.72)	**3.28** (2.27-4.17)	**5.29** (3.28-7.22)	317
Non-Hispanic blacks	11-12	**.739** (.648-.842)	**.684** (.553-.802)	**1.52** (1.27-1.79)	**3.19** (2.66-3.91)	**5.28** (3.47-7.90)	669
Non-Hispanic whites	11-12	**.701** (.636-.772)	**.624** (.557-.683)	**1.22** (1.06-1.39)	**2.50** (2.06-2.79)	**4.22** (2.94-5.35)	818
All Hispanics	11-12	**.719** (.638-.810)	**.640** (.543-.739)	**1.23** (1.06-1.41)	**3.18** (2.32-3.74)	**4.51** (3.63-6.13)	573
Asians	11-12	**.638** (.560-.727)	**.543** (.503-.667)	**1.00** (.867-1.17)	**1.96** (1.49-2.36)	**3.03** (2.23-3.58)	353

Urinary Tungsten (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.093** (.087-.100)	**.090** (.080-.090)	**.180** (.160-.190)	**.320** (.280-.370)	**.500** (.430-.550)	2338
	01-02	**.082** (.073-.092)	**.070** (.060-.090)	**.160** (.140-.180)	**.300** (.260-.350)	**.460** (.370-.560)	2652
	03-04	**.071** (.064-.078)	**.070** (.060-.080)	**.130** (.120-.140)	**.270** (.230-.300)	**.400** (.330-.480)	2558
	05-06	**.085** (.079-.092)	**.090** (.080-.090)	**.170** (.150-.180)	**.310** (.280-.340)	**.470** (.400-.520)	2576
	07-08	**.099** (.093-.105)	**.100** (.090-.110)	**.190** (.180-.200)	**.360** (.320-.380)	**.500** (.440-.570)	2627
	09-10	**.081** (.075-.087)	**.080** (.070-.090)	**.160** (.150-.170)	**.310** (.270-.330)	**.460** (.370-.540)	2847
Age group							
6-11 years	99-00	**.158** (.123-.204)	**.160** (.120-.220)	**.270** (.220-.350)	**.510** (.380-.560)	**.620** (.510-.950)	320
	01-02	**.137** (.110-.170)	**.140** (.110-.170)	**.260** (.200-.350)	**.460** (.360-.690)	**.770** (.510-1.53)	363
	03-04	**.130** (.111-.151)	**.140** (.120-.150)	**.240** (.190-.290)	**.410** (.290-.500)	**.500** (.370-.630)	290
	05-06	**.142** (.121-.166)	**.140** (.120-.170)	**.230** (.210-.290)	**.430** (.330-.610)	**.640** (.440-.850)	355
	07-08	**.160** (.138-.186)	**.150** (.130-.170)	**.310** (.240-.390)	**.510** (.450-.580)	**.810** (.560-1.15)	394
	09-10	**.151** (.126-.180)	**.150** (.110-.200)	**.310** (.230-.400)	**.560** (.400-.770)	**.770** (.560-1.04)	378
12-19 years	99-00	**.113** (.097-.132)	**.110** (.090-.130)	**.210** (.180-.250)	**.360** (.310-.440)	**.530** (.380-.800)	679
	01-02	**.113** (.095-.135)	**.110** (.090-.130)	**.210** (.180-.260)	**.400** (.310-.520)	**.570** (.430-.790)	744
	03-04	**.105** (.090-.122)	**.100** (.090-.120)	**.190** (.160-.230)	**.350** (.290-.460)	**.530** (.350-1.00)	725
	05-06	**.131** (.108-.158)	**.130** (.100-.160)	**.250** (.200-.310)	**.430** (.360-.530)	**.620** (.410-1.04)	701
	07-08	**.150** (.136-.167)	**.160** (.140-.180)	**.250** (.220-.290)	**.470** (.350-.660)	**.660** (.430-1.05)	376
	09-10	**.101** (.089-.115)	**.100** (.080-.120)	**.210** (.190-.240)	**.360** (.300-.460)	**.540** (.440-.650)	451
20 years and older	99-00	**.084** (.078-.091)	**.080** (.070-.090)	**.160** (.130-.180)	**.280** (.260-.320)	**.450** (.360-.520)	1339
	01-02	**.073** (.065-.082)	**.060** (.050-.070)	**.140** (.110-.160)	**.260** (.210-.310)	**.380** (.310-.490)	1545
	03-04	**.062** (.056-.068)	**.060** (.050-.070)	**.110** (.100-.120)	**.210** (.180-.250)	**.360** (.270-.430)	1543
	05-06	**.075** (.070-.081)	**.080** (.070-.080)	**.140** (.130-.160)	**.250** (.220-.310)	**.410** (.340-.470)	1520
	07-08	**.088** (.081-.095)	**.090** (.080-.100)	**.170** (.150-.190)	**.310** (.280-.340)	**.450** (.390-.500)	1857
	09-10	**.073** (.068-.079)	**.080** (.070-.080)	**.150** (.130-.160)	**.260** (.230-.300)	**.370** (.330-.460)	2018
Gender							
Males	99-00	**.107** (.096-.120)	**.100** (.090-.120)	**.210** (.190-.230)	**.390** (.310-.470)	**.530** (.470-.650)	1160
	01-02	**.088** (.074-.105)	**.080** (.060-.100)	**.170** (.140-.220)	**.330** (.260-.390)	**.490** (.380-.580)	1307
	03-04	**.081** (.071-.093)	**.080** (.070-.090)	**.140** (.130-.170)	**.300** (.250-.340)	**.430** (.340-.560)	1281
	05-06	**.095** (.090-.101)	**.090** (.080-.100)	**.180** (.160-.190)	**.340** (.310-.380)	**.480** (.420-.610)	1271
	07-08	**.109** (.102-.116)	**.110** (.100-.130)	**.210** (.190-.240)	**.380** (.350-.450)	**.550** (.450-.660)	1327
	09-10	**.090** (.082-.098)	**.090** (.080-.100)	**.170** (.150-.190)	**.320** (.290-.350)	**.500** (.410-.550)	1398
Females	99-00	**.082** (.077-.087)	**.070** (.060-.080)	**.150** (.130-.160)	**.270** (.240-.300)	**.400** (.320-.470)	1178
	01-02	**.076** (.069-.084)	**.060** (.060-.080)	**.150** (.120-.170)	**.280** (.230-.330)	**.430** (.340-.560)	1345
	03-04	**.062** (.056-.069)	**.060** (.050-.070)	**.110** (.100-.120)	**.220** (.190-.250)	**.370** (.270-.460)	1277
	05-06	**.077** (.069-.085)	**.080** (.070-.090)	**.160** (.150-.170)	**.280** (.250-.320)	**.440** (.350-.510)	1305
	07-08	**.090** (.083-.098)	**.090** (.080-.100)	**.170** (.160-.180)	**.300** (.270-.350)	**.460** (.420-.550)	1300
	09-10	**.074** (.067-.081)	**.070** (.070-.080)	**.150** (.130-.170)	**.280** (.240-.330)	**.400** (.320-.600)	1449

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.04, 0.021, 0.021, and 0.021 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Tungsten (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.113** (.095-.133)	**.110** (.090-.130)	**.200** (.160-.250)	**.400** (.300-.520)	**.550** (.420-.830)	790
	01-02	**.101** (.093-.109)	**.100** (.090-.110)	**.190** (.170-.210)	**.370** (.310-.430)	**.570** (.450-.670)	680
	03-04	**.086** (.073-.100)	**.080** (.070-.100)	**.170** (.120-.220)	**.360** (.230-.620)	**.640** (.410-.800)	618
	05-06	**.102** (.088-.118)	**.100** (.080-.110)	**.200** (.170-.220)	**.450** (.310-.650)	**.730** (.510-1.04)	652
	07-08	**.106** (.084-.135)	**.110** (.080-.150)	**.210** (.170-.270)	**.400** (.250-.670)	**.580** (.400-1.12)	515
	09-10	**.099** (.089-.109)	**.090** (.090-.100)	**.200** (.170-.220)	**.380** (.340-.470)	**.540** (.480-.580)	613
Non-Hispanic blacks	99-00	**.113** (.101-.126)	**.100** (.090-.130)	**.210** (.180-.250)	**.370** (.290-.460)	**.560** (.420-.810)	562
	01-02	**.096** (.080-.116)	**.090** (.070-.120)	**.160** (.130-.250)	**.310** (.270-.400)	**.460** (.400-.590)	649
	03-04	**.092** (.082-.104)	**.090** (.080-.110)	**.160** (.150-.180)	**.300** (.250-.330)	**.470** (.340-.550)	723
	05-06	**.101** (.088-.116)	**.110** (.090-.120)	**.190** (.160-.220)	**.320** (.280-.370)	**.450** (.340-.650)	692
	07-08	**.120** (.099-.146)	**.120** (.090-.160)	**.240** (.200-.290)	**.390** (.340-.440)	**.540** (.460-.690)	589
	09-10	**.093** (.086-.100)	**.100** (.090-.110)	**.180** (.160-.200)	**.290** (.270-.340)	**.400** (.320-.590)	543
Non-Hispanic whites	99-00	**.092** (.084-.100)	**.080** (.070-.100)	**.180** (.160-.200)	**.320** (.270-.380)	**.470** (.380-.550)	802
	01-02	**.076** (.066-.088)	**.060** (.050-.080)	**.150** (.120-.180)	**.290** (.230-.360)	**.430** (.330-.620)	1117
	03-04	**.065** (.058-.073)	**.060** (.060-.070)	**.120** (.100-.130)	**.230** (.190-.290)	**.380** (.320-.410)	1074
	05-06	**.082** (.075-.089)	**.080** (.080-.090)	**.160** (.140-.180)	**.300** (.250-.340)	**.430** (.380-.480)	1041
	07-08	**.093** (.087-.101)	**.100** (.090-.110)	**.180** (.160-.190)	**.330** (.290-.370)	**.470** (.410-.570)	1095
	09-10	**.077** (.070-.083)	**.080** (.070-.090)	**.150** (.140-.170)	**.280** (.250-.310)	**.400** (.330-.540)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.04, 0.021, 0.021, and 0.021 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Tungsten (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.074** (.067-.082)	**.069** (.062-.076)	**.143** (.127-.170)	**.284** (.235-.361)	**.434** (.354-.522)	2491
Age group							
6-11 years	11-12	**.136** (.120-.155)	**.138** (.123-.162)	**.272** (.229-.301)	**.448** (.391-.504)	**.583** (.498-.691)	398
12-19 years	11-12	**.107** (.088-.130)	**.112** (.083-.141)	**.212** (.175-.269)	**.371** (.308-.458)	**.506** (.399-.647)	388
20 years and older	11-12	**.066** (.058-.074)	**.060** (.055-.067)	**.121** (.104-.144)	**.237** (.194-.315)	**.374** (.274-.493)	1705
Gender							
Males	11-12	**.084** (.074-.095)	**.080** (.068-.094)	**.164** (.136-.200)	**.343** (.260-.408)	**.471** (.388-.537)	1254
Females	11-12	**.066** (.060-.073)	**.060** (.054-.067)	**.131** (.115-.145)	**.247** (.212-.294)	**.361** (.284-.463)	1237
Race/ethnicity							
Mexican Americans	11-12	**.097** (.082-.114)	**.097** (.071-.115)	**.198** (.150-.282)	**.434** (.356-.534)	**.691** (.473-.827)	314
Non-Hispanic blacks	11-12	**.102** (.087-.119)	**.096** (.082-.120)	**.184** (.145-.245)	**.387** (.282-.496)	**.537** (.391-.808)	669
Non-Hispanic whites	11-12	**.068** (.060-.076)	**.063** (.056-.070)	**.130** (.113-.153)	**.260** (.212-.327)	**.370** (.307-.463)	810
All Hispanics	11-12	**.082** (.072-.092)	**.072** (.061-.094)	**.162** (.136-.197)	**.371** (.294-.433)	**.534** (.422-.692)	570
Asians	11-12	**.067** (.058-.077)	**.066** (.052-.078)	**.135** (.115-.168)	**.252** (.206-.319)	**.401** (.260-.635)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.026.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Tungsten (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.087** (.080-.095)	**.080** (.075-.086)	**.146** (.136-.158)	**.270** (.206-.333)	**.383** (.302-.459)	2338
	01-02	**.078** (.069-.087)	**.074** (.064-.084)	**.138** (.122-.154)	**.255** (.216-.300)	**.359** (.315-.436)	2651
	03-04	**.070** (.063-.078)	**.065** (.059-.074)	**.117** (.107-.133)	**.215** (.179-.253)	**.333** (.255-.439)	2558
	05-06	**.084** (.080-.089)	**.080** (.080-.080)	**.140** (.130-.150)	**.250** (.210-.290)	**.350** (.290-.440)	2576
	07-08	**.103** (.096-.111)	**.100** (.090-.110)	**.170** (.160-.190)	**.320** (.290-.360)	**.470** (.410-.540)	2627
	09-10	**.086** (.080-.093)	**.080** (.070-.090)	**.150** (.130-.160)	**.270** (.230-.310)	**.400** (.340-.470)	2847
Age group							
6-11 years	99-00	**.174** (.150-.201)	**.169** (.136-.198)	**.293** (.216-.333)	**.439** (.331-.667)	**.667** (.452-.880)	320
	01-02	**.168** (.144-.197)	**.158** (.139-.190)	**.275** (.231-.326)	**.412** (.333-.554)	**.634** (.436-1.28)	363
	03-04	**.151** (.131-.174)	**.144** (.119-.167)	**.250** (.205-.283)	**.333** (.278-.484)	**.484** (.333-.739)	290
	05-06	**.175** (.152-.202)	**.160** (.140-.180)	**.270** (.220-.320)	**.560** (.330-.790)	**.790** (.470-1.18)	355
	07-08	**.209** (.185-.235)	**.200** (.180-.240)	**.340** (.290-.370)	**.540** (.450-.660)	**.780** (.620-.910)	394
	09-10	**.205** (.177-.239)	**.200** (.160-.230)	**.330** (.290-.440)	**.620** (.450-.850)	**.930** (.690-1.08)	378
12-19 years	99-00	**.084** (.078-.091)	**.079** (.074-.084)	**.138** (.124-.158)	**.231** (.180-.287)	**.339** (.237-.465)	679
	01-02	**.081** (.071-.092)	**.081** (.072-.091)	**.148** (.122-.167)	**.250** (.208-.301)	**.359** (.272-.431)	744
	03-04	**.075** (.065-.086)	**.071** (.061-.082)	**.122** (.098-.148)	**.197** (.167-.308)	**.379** (.197-.582)	725
	05-06	**.101** (.086-.117)	**.100** (.080-.110)	**.170** (.140-.200)	**.300** (.200-.370)	**.370** (.300-.770)	701
	07-08	**.118** (.104-.132)	**.120** (.110-.130)	**.180** (.160-.210)	**.340** (.230-.550)	**.530** (.310-.810)	376
	09-10	**.094** (.085-.106)	**.090** (.080-.110)	**.150** (.120-.180)	**.270** (.210-.290)	**.370** (.280-.500)	451
20 years and older	99-00	**.080** (.072-.089)	**.075** (.067-.082)	**.130** (.116-.146)	**.218** (.179-.301)	**.347** (.245-.426)	1339
	01-02	**.070** (.063-.079)	**.067** (.058-.075)	**.119** (.099-.139)	**.216** (.176-.267)	**.333** (.253-.431)	1544
	03-04	**.063** (.057-.071)	**.059** (.053-.065)	**.105** (.094-.117)	**.181** (.155-.215)	**.279** (.217-.370)	1543
	05-06	**.075** (.071-.079)	**.070** (.070-.080)	**.120** (.110-.130)	**.210** (.200-.220)	**.290** (.240-.360)	1520
	07-08	**.093** (.087-.101)	**.090** (.080-.100)	**.160** (.140-.170)	**.280** (.250-.310)	**.420** (.350-.490)	1857
	09-10	**.078** (.072-.084)	**.070** (.070-.080)	**.130** (.120-.140)	**.220** (.190-.260)	**.340** (.270-.400)	2018
Gender							
Males	99-00	**.083** (.074-.094)	**.073** (.063-.086)	**.146** (.126-.165)	**.279** (.198-.386)	**.439** (.329-.605)	1160
	01-02	**.071** (.060-.083)	**.065** (.056-.077)	**.125** (.098-.153)	**.255** (.203-.306)	**.364** (.300-.431)	1306
	03-04	**.068** (.059-.079)	**.062** (.054-.071)	**.111** (.098-.133)	**.216** (.170-.284)	**.341** (.240-.500)	1281
	05-06	**.078** (.073-.083)	**.070** (.070-.080)	**.130** (.120-.150)	**.240** (.200-.300)	**.360** (.300-.440)	1271
	07-08	**.097** (.090-.106)	**.090** (.090-.110)	**.170** (.150-.180)	**.310** (.280-.360)	**.440** (.410-.480)	1327
	09-10	**.082** (.074-.089)	**.070** (.070-.080)	**.140** (.120-.150)	**.250** (.220-.310)	**.440** (.320-.500)	1398
Females	99-00	**.091** (.085-.098)	**.084** (.080-.091)	**.145** (.136-.158)	**.265** (.200-.301)	**.339** (.300-.381)	1178
	01-02	**.085** (.077-.094)	**.083** (.075-.091)	**.143** (.130-.161)	**.258** (.216-.317)	**.353** (.317-.538)	1345
	03-04	**.072** (.065-.079)	**.069** (.063-.078)	**.121** (.108-.138)	**.211** (.176-.237)	**.333** (.261-.439)	1277
	05-06	**.090** (.085-.096)	**.080** (.080-.090)	**.150** (.140-.160)	**.250** (.210-.290)	**.350** (.260-.530)	1305
	07-08	**.109** (.100-.118)	**.100** (.090-.120)	**.180** (.160-.210)	**.330** (.290-.360)	**.520** (.400-.590)	1300
	09-10	**.091** (.083-.100)	**.090** (.080-.090)	**.150** (.130-.170)	**.270** (.210-.340)	**.380** (.330-.450)	1449

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Tungsten (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.106** (.093-.120)	**.100** (.086-.116)	**.184** (.152-.214)	**.329** (.267-.392)	**.497** (.354-.727)	790
	01-02	**.098** (.090-.108)	**.089** (.081-.100)	**.164** (.143-.187)	**.294** (.258-.375)	**.555** (.410-.797)	679
	03-04	**.079** (.065-.096)	**.073** (.054-.093)	**.136** (.103-.197)	**.300** (.233-.426)	**.482** (.344-.823)	618
	05-06	**.096** (.083-.111)	**.090** (.080-.090)	**.160** (.150-.180)	**.330** (.250-.420)	**.670** (.360-.890)	652
	07-08	**.106** (.083-.137)	**.110** (.080-.140)	**.200** (.160-.270)	**.400** (.260-.710)	**.610** (.310-1.12)	515
	09-10	**.103** (.096-.111)	**.100** (.090-.110)	**.180** (.160-.200)	**.330** (.290-.390)	**.480** (.390-.540)	613
Non-Hispanic blacks	99-00	**.073** (.064-.083)	**.071** (.061-.081)	**.124** (.109-.154)	**.201** (.188-.222)	**.360** (.217-.465)	562
	01-02	**.066** (.056-.077)	**.060** (.049-.079)	**.109** (.090-.125)	**.199** (.153-.285)	**.340** (.250-.414)	649
	03-04	**.066** (.059-.074)	**.067** (.055-.075)	**.105** (.095-.120)	**.186** (.150-.224)	**.317** (.214-.358)	723
	05-06	**.073** (.065-.082)	**.070** (.060-.080)	**.120** (.110-.140)	**.210** (.190-.260)	**.320** (.260-.390)	692
	07-08	**.088** (.076-.102)	**.090** (.070-.100)	**.150** (.140-.160)	**.240** (.220-.300)	**.380** (.270-.630)	589
	09-10	**.074** (.067-.080)	**.070** (.060-.080)	**.120** (.110-.140)	**.210** (.180-.250)	**.310** (.220-.410)	543
Non-Hispanic whites	99-00	**.091** (.083-.100)	**.082** (.077-.088)	**.150** (.136-.169)	**.279** (.200-.354)	**.385** (.302-.462)	802
	01-02	**.078** (.068-.088)	**.073** (.061-.085)	**.139** (.121-.157)	**.253** (.209-.308)	**.353** (.286-.453)	1117
	03-04	**.069** (.060-.078)	**.063** (.057-.071)	**.116** (.104-.133)	**.199** (.167-.237)	**.299** (.222-.439)	1074
	05-06	**.085** (.080-.090)	**.080** (.080-.090)	**.140** (.130-.160)	**.240** (.210-.280)	**.340** (.280-.420)	1041
	07-08	**.104** (.096-.114)	**.100** (.090-.110)	**.180** (.160-.200)	**.310** (.280-.360)	**.460** (.390-.530)	1095
	09-10	**.086** (.078-.094)	**.080** (.070-.090)	**.140** (.130-.160)	**.250** (.200-.310)	**.370** (.330-.400)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Tungsten (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.084** (.076-.093)	**.077** (.072-.085)	**.140** (.123-.161)	**.260** (.209-.323)	**.402** (.294-.536)	2489
Age group							
6-11 years	11-12	**.194** (.174-.217)	**.183** (.159-.214)	**.312** (.256-.407)	**.500** (.421-.652)	**.687** (.515-.863)	397
12-19 years	11-12	**.103** (.091-.116)	**.099** (.086-.111)	**.164** (.144-.181)	**.288** (.203-.324)	**.381** (.286-.656)	388
20 years and older	11-12	**.074** (.067-.083)	**.069** (.064-.075)	**.121** (.104-.138)	**.215** (.170-.263)	**.334** (.233-.458)	1704
Gender							
Males	11-12	**.079** (.068-.090)	**.075** (.064-.085)	**.131** (.112-.150)	**.261** (.180-.327)	**.400** (.276-.539)	1253
Females	11-12	**.090** (.083-.097)	**.079** (.075-.088)	**.150** (.134-.165)	**.257** (.223-.324)	**.404** (.314-.544)	1236
Race/ethnicity							
Mexican Americans	11-12	**.110** (.090-.134)	**.102** (.071-.142)	**.192** (.150-.270)	**.381** (.263-.633)	**.633** (.396-.729)	314
Non-Hispanic blacks	11-12	**.079** (.068-.092)	**.072** (.060-.083)	**.129** (.102-.151)	**.246** (.168-.411)	**.440** (.253-.669)	669
Non-Hispanic whites	11-12	**.082** (.072-.094)	**.076** (.068-.088)	**.135** (.113-.164)	**.247** (.183-.324)	**.353** (.250-.515)	808
All Hispanics	11-12	**.092** (.078-.108)	**.079** (.068-.100)	**.164** (.134-.184)	**.312** (.263-.404)	**.473** (.367-.664)	570
Asians	11-12	**.089** (.075-.107)	**.082** (.073-.103)	**.152** (.129-.181)	**.296** (.207-.413)	**.449** (.299-.824)	353

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Uranium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.008** (.007-.009)	**.007** (.006-.008)	**.013** (.010-.017)	**.027** (.021-.038)	**.046** (.037-.056)	2464
	01-02	**.009** (.007-.010)	**.008** (.007-.009)	**.014** (.012-.018)	**.030** (.023-.039)	**.046** (.034-.062)	2690
	03-04	**.008** (.007-.008)	**.007** (.006-.007)	**.011** (.010-.013)	**.021** (.017-.026)	**.031** (.026-.037)	2557
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.010** (.009-.012)	**.019** (.016-.022)	**.033** (.023-.041)	2576
	07-08	**.007** (.006-.008)	**.007** (.005-.008)	**.013** (.011-.015)	**.024** (.018-.033)	**.039** (.026-.057)	2627
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.013** (.011-.015)	**.022** (.019-.030)	**.036** (.029-.044)	2848
Age group							
6-11 years	99-00	**.009** (.007-.011)	**.007** (.006-.009)	**.013** (.009-.022)	**.032** (.019-.048)	**.048** (.033-.066)	340
	01-02	**.008** (.007-.010)	**.008** (.006-.010)	**.014** (.010-.020)	**.026** (.020-.036)	**.040** (.025-.049)	368
	03-04	**.008** (.007-.009)	**.007** (.006-.009)	**.012** (.009-.016)	**.020** (.016-.026)	**.028** (.020-.039)	289
	05-06	**.006** (.005-.007)	**.005** (.004-.007)	**.010** (.008-.011)	**.015** (.012-.031)	**.031** (.013-.051)	355
	07-08	**.007** (.006-.008)	**.006** (.005-.008)	**.012** (.009-.016)	**.021** (.016-.027)	**.030** (.022-.039)	394
	09-10	**.006** (.005-.008)	**.006** (.005-.008)	**.012** (.009-.014)	**.018** (.013-.034)	**.033** (.016-.052)	378
12-19 years	99-00	**.009** (.008-.011)	**.009** (.008-.010)	**.015** (.012-.018)	**.026** (.020-.043)	**.044** (.028-.072)	719
	01-02	**.010** (.008-.012)	**.010** (.008-.012)	**.017** (.013-.023)	**.030** (.022-.042)	**.042** (.027-.088)	762
	03-04	**.010** (.009-.011)	**.009** (.008-.010)	**.015** (.012-.018)	**.028** (.023-.036)	**.038** (.036-.053)	725
	05-06	**.007** (.006-.008)	**.007** (.006-.008)	**.013** (.011-.015)	**.023** (.018-.032)	**.034** (.027-.045)	701
	07-08	**.009** (.007-.011)	**.008** (.007-.011)	**.016** (.014-.020)	**.029** (.022-.056)	**.056** (.027-.156)	376
	09-10	**.008** (.007-.010)	**.008** (.006-.010)	**.014** (.011-.018)	**.023** (.020-.038)	**.040** (.024-.059)	451
20 years and older	99-00	**.008** (.006-.009)	**.007** (.005-.008)	**.013** (.010-.017)	**.027** (.021-.040)	**.046** (.036-.056)	1405
	01-02	**.009** (.007-.010)	**.008** (.007-.009)	**.014** (.012-.017)	**.031** (.022-.040)	**.046** (.034-.065)	1560
	03-04	*	**.006** (.005-.007)	**.011** (.009-.012)	**.019** (.016-.026)	**.029** (.024-.038)	1543
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.010** (.008-.012)	**.019** (.015-.022)	**.032** (.022-.041)	1520
	07-08	**.007** (.005-.008)	**.006** (.005-.008)	**.013** (.010-.015)	**.024** (.017-.035)	**.039** (.026-.052)	1857
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.013** (.011-.015)	**.023** (.019-.030)	**.036** (.029-.044)	2019
Gender							
Males	99-00	**.009** (.008-.011)	**.008** (.007-.010)	**.015** (.012-.021)	**.036** (.024-.046)	**.053** (.040-.067)	1227
	01-02	**.009** (.008-.011)	**.009** (.007-.010)	**.015** (.013-.021)	**.033** (.024-.045)	**.047** (.035-.065)	1335
	03-04	**.008** (.007-.009)	**.007** (.006-.008)	**.013** (.011-.016)	**.023** (.019-.027)	**.031** (.027-.035)	1280
	05-06	**.006** (.006-.007)	**.006** (.005-.006)	**.011** (.009-.012)	**.019** (.015-.022)	**.030** (.021-.043)	1271
	07-08	**.007** (.006-.009)	**.007** (.006-.009)	**.014** (.013-.016)	**.026** (.021-.037)	**.046** (.030-.056)	1327
	09-10	**.007** (.006-.009)	**.007** (.006-.009)	**.014** (.012-.017)	**.024** (.020-.034)	**.040** (.032-.046)	1398
Females	99-00	**.007** (.006-.008)	**.006** (.005-.007)	**.012** (.009-.015)	**.023** (.016-.033)	**.036** (.026-.050)	1237
	01-02	**.008** (.007-.010)	**.008** (.006-.009)	**.014** (.011-.017)	**.027** (.019-.037)	**.041** (.029-.063)	1355
	03-04	*	**.006** (.005-.007)	**.010** (.009-.011)	**.018** (.013-.027)	**.031** (.022-.039)	1277
	05-06	**.005** (.005-.006)	**.005** (.004-.006)	**.010** (.008-.011)	**.019** (.016-.023)	**.034** (.025-.040)	1305
	07-08	**.006** (.005-.008)	**.006** (.005-.007)	**.011** (.009-.015)	**.024** (.016-.033)	**.035** (.022-.067)	1300
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.011-.014)	**.022** (.017-.029)	**.033** (.023-.045)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.004, 0.004, 0.005, 0.002, 0.002, and 0.002 respectively.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Urinary Uranium (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.017** (.012-.023)	**.016** (.011-.021)	**.033** (.020-.054)	**.060** (.040-.127)	**.114** (.054-.279)	883
	01-02	**.013** (.010-.016)	**.012** (.009-.016)	**.022** (.017-.030)	**.040** (.031-.054)	**.055** (.046-.069)	683
	03-04	**.014** (.011-.017)	**.013** (.009-.018)	**.024** (.017-.034)	**.041** (.028-.073)	**.064** (.039-.158)	618
	05-06	**.008** (.007-.009)	**.009** (.007-.010)	**.014** (.013-.017)	**.025** (.021-.033)	**.042** (.028-.051)	652
	07-08	**.009** (.008-.011)	**.009** (.008-.010)	**.017** (.014-.022)	**.032** (.026-.039)	**.047** (.032-.073)	515
	09-10	**.009** (.008-.011)	**.009** (.008-.011)	**.018** (.015-.021)	**.034** (.027-.040)	**.046** (.039-.055)	613
Non-Hispanic blacks	99-00	**.009** (.007-.011)	**.008** (.006-.010)	**.014** (.010-.020)	**.028** (.018-.049)	**.052** (.030-.067)	568
	01-02	**.008** (.007-.009)	**.008** (.007-.009)	**.012** (.011-.015)	**.021** (.017-.027)	**.030** (.023-.037)	667
	03-04	**.008** (.008-.009)	**.007** (.007-.008)	**.012** (.011-.013)	**.021** (.017-.027)	**.031** (.023-.045)	722
	05-06	**.006** (.005-.007)	**.006** (.005-.007)	**.010** (.009-.011)	**.016** (.014-.020)	**.023** (.018-.031)	692
	07-08	**.007** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.016)	**.024** (.016-.038)	**.038** (.025-.055)	589
	09-10	**.008** (.007-.010)	**.008** (.007-.010)	**.014** (.012-.016)	**.027** (.017-.044)	**.044** (.027-.074)	544
Non-Hispanic whites	99-00	**.007** (.006-.009)	**.007** (.006-.007)	**.012** (.009-.016)	**.023** (.017-.037)	**.043** (.027-.051)	822
	01-02	**.008** (.007-.009)	**.007** (.006-.009)	**.013** (.011-.016)	**.026** (.019-.035)	**.037** (.029-.050)	1132
	03-04	*	**.006** (.005-.007)	**.010** (.009-.012)	**.018** (.015-.023)	**.027** (.020-.036)	1074
	05-06	**.005** (.005-.006)	**.005** (.004-.006)	**.010** (.008-.012)	**.018** (.014-.022)	**.033** (.021-.043)	1041
	07-08	**.006** (.005-.008)	**.006** (.005-.008)	**.013** (.009-.016)	**.023** (.015-.039)	**.038** (.022-.086)	1095
	09-10	**.006** (.005-.007)	**.006** (.005-.007)	**.012** (.011-.014)	**.021** (.017-.027)	**.032** (.023-.041)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.004, 0.004, 0.005, 0.002, 0.002, and 0.002 respectively.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Urinary Uranium (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.006** (.005-.007)	**.006** (.005-.007)	**.011** (.008-.014)	**.019** (.015-.025)	**.031** (.023-.043)	2504
Age group							
6-11 years	11-12	**.006** (.005-.007)	**.006** (.005-.008)	**.011** (.009-.013)	**.019** (.013-.024)	**.025** (.020-.037)	399
12-19 years	11-12	**.007** (.006-.009)	**.007** (.005-.008)	**.012** (.009-.017)	**.021** (.014-.032)	**.033** (.021-.052)	390
20 years and older	11-12	**.006** (.005-.007)	**.005** (.004-.007)	**.011** (.008-.013)	**.019** (.015-.025)	**.031** (.023-.043)	1715
Gender							
Males	11-12	**.007** (.005-.008)	**.006** (.005-.007)	**.011** (.009-.014)	**.020** (.014-.032)	**.034** (.022-.045)	1262
Females	11-12	**.006** (.005-.007)	**.005** (.004-.006)	**.010** (.008-.013)	**.019** (.015-.025)	**.029** (.024-.042)	1242
Race/ethnicity							
Mexican Americans	11-12	**.007** (.006-.009)	**.007** (.006-.009)	**.013** (.010-.016)	**.023** (.015-.033)	**.031** (.017-.054)	317
Non-Hispanic blacks	11-12	**.006** (.005-.008)	**.006** (.005-.008)	**.011** (.008-.014)	**.019** (.014-.028)	**.029** (.022-.042)	669
Non-Hispanic whites	11-12	**.006** (.005-.007)	**.006** (.004-.007)	**.011** (.008-.014)	**.021** (.015-.029)	**.034** (.023-.045)	820
All Hispanics	11-12	**.006** (.005-.007)	**.005** (.005-.007)	**.011** (.008-.014)	**.018** (.013-.030)	**.030** (.018-.047)	573
Asians	11-12	**.005** (.005-.006)	**.005** (.004-.005)	**.009** (.007-.013)	**.016** (.014-.020)	**.021** (.016-.040)	353

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.003.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Urinary Uranium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.007** (.006-.009)	**.007** (.006-.009)	**.013** (.010-.016)	**.024** (.019-.030)	**.034** (.027-.053)	2464
	01-02	**.008** (.007-.010)	**.007** (.006-.009)	**.014** (.011-.018)	**.026** (.020-.034)	**.040** (.028-.058)	2689
	03-04	**.008** (.007-.008)	**.007** (.006-.008)	**.012** (.010-.014)	**.021** (.017-.025)	**.029** (.023-.039)	2557
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.008-.010)	**.017** (.014-.020)	**.026** (.020-.039)	2576
	07-08	**.007** (.006-.009)	**.006** (.005-.008)	**.012** (.009-.016)	**.024** (.016-.038)	**.038** (.025-.065)	2627
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.013)	**.020** (.017-.024)	**.029** (.024-.035)	2848
Age group							
6-11 years	99-00	**.009** (.007-.012)	**.008** (.006-.011)	**.015** (.010-.024)	**.030** (.016-.044)	**.037** (.030-.077)	340
	01-02	**.010** (.008-.011)	**.010** (.008-.012)	**.015** (.013-.019)	**.027** (.018-.032)	**.033** (.027-.048)	368
	03-04	**.009** (.008-.010)	**.008** (.007-.010)	**.013** (.011-.017)	**.024** (.016-.039)	**.033** (.022-.050)	289
	05-06	**.007** (.006-.008)	**.006** (.005-.008)	**.010** (.008-.014)	**.018** (.013-.035)	**.034** (.018-.048)	355
	07-08	**.009** (.007-.011)	**.008** (.007-.010)	**.014** (.010-.022)	**.026** (.016-.053)	**.042** (.023-.065)	394
	09-10	**.009** (.007-.010)	**.008** (.007-.010)	**.014** (.011-.016)	**.020** (.015-.030)	**.029** (.022-.033)	378
12-19 years	99-00	**.007** (.006-.008)	**.006** (.005-.008)	**.010** (.009-.014)	**.020** (.014-.030)	**.030** (.019-.074)	719
	01-02	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.009-.016)	**.020** (.015-.026)	**.026** (.020-.042)	762
	03-04	**.007** (.006-.008)	**.006** (.005-.007)	**.010** (.008-.013)	**.019** (.015-.027)	**.034** (.022-.041)	725
	05-06	**.006** (.005-.007)	**.005** (.005-.006)	**.009** (.007-.012)	**.017** (.013-.022)	**.023** (.019-.026)	701
	07-08	**.007** (.006-.009)	**.006** (.005-.008)	**.012** (.009-.016)	**.025** (.013-.050)	**.033** (.022-.077)	376
	09-10	**.007** (.006-.009)	**.007** (.006-.008)	**.011** (.010-.013)	**.017** (.014-.021)	**.025** (.017-.038)	451
20 years and older	99-00	**.007** (.006-.009)	**.007** (.006-.009)	**.013** (.010-.016)	**.024** (.019-.029)	**.034** (.025-.051)	1405
	01-02	**.008** (.007-.010)	**.007** (.006-.009)	**.014** (.011-.019)	**.027** (.020-.039)	**.043** (.030-.063)	1559
	03-04	*	**.007** (.006-.008)	**.012** (.010-.014)	**.020** (.017-.024)	**.028** (.022-.038)	1543
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.008-.010)	**.016** (.014-.019)	**.026** (.020-.039)	1520
	07-08	**.007** (.006-.008)	**.006** (.005-.008)	**.012** (.009-.016)	**.024** (.016-.036)	**.037** (.025-.065)	1857
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.013)	**.020** (.017-.025)	**.029** (.024-.036)	2019
Gender							
Males	99-00	**.007** (.006-.009)	**.006** (.005-.008)	**.011** (.009-.015)	**.021** (.017-.028)	**.035** (.024-.056)	1227
	01-02	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.015)	**.022** (.018-.028)	**.033** (.025-.047)	1334
	03-04	**.007** (.006-.008)	**.006** (.006-.007)	**.010** (.009-.012)	**.019** (.015-.024)	**.026** (.019-.039)	1280
	05-06	**.005** (.005-.005)	**.005** (.004-.005)	**.008** (.007-.009)	**.014** (.013-.016)	**.021** (.016-.031)	1271
	07-08	**.007** (.005-.008)	**.006** (.005-.007)	**.012** (.009-.015)	**.022** (.016-.031)	**.032** (.024-.056)	1327
	09-10	**.007** (.006-.008)	**.006** (.006-.007)	**.011** (.010-.012)	**.019** (.015-.023)	**.028** (.022-.033)	1398
Females	99-00	**.008** (.007-.010)	**.007** (.006-.010)	**.013** (.010-.017)	**.025** (.019-.033)	**.034** (.027-.054)	1237
	01-02	**.009** (.008-.011)	**.009** (.007-.011)	**.016** (.012-.021)	**.029** (.021-.042)	**.045** (.031-.067)	1355
	03-04	*	**.008** (.007-.009)	**.013** (.011-.016)	**.022** (.018-.028)	**.031** (.025-.041)	1277
	05-06	**.006** (.006-.007)	**.006** (.005-.006)	**.010** (.009-.011)	**.019** (.015-.024)	**.035** (.022-.041)	1305
	07-08	**.008** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.018)	**.026** (.016-.043)	**.042** (.024-.083)	1300
	09-10	**.008** (.007-.009)	**.008** (.006-.009)	**.013** (.011-.015)	**.021** (.017-.027)	**.031** (.024-.041)	1450

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Urinary Uranium (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.015** (.011-.022)	**.015** (.011-.020)	**.029** (.016-.058)	**.059** (.027-.146)	**.100** (.042-.270)	883
	01-02	**.012** (.010-.016)	**.012** (.009-.016)	**.021** (.015-.028)	**.033** (.024-.053)	**.050** (.034-.080)	682
	03-04	**.013** (.010-.016)	**.013** (.009-.017)	**.022** (.016-.029)	**.035** (.026-.051)	**.051** (.034-.061)	618
	05-06	**.008** (.007-.009)	**.007** (.006-.008)	**.013** (.010-.015)	**.022** (.016-.031)	**.035** (.025-.060)	652
	07-08	**.009** (.008-.012)	**.009** (.007-.011)	**.017** (.014-.021)	**.031** (.021-.048)	**.042** (.027-.097)	515
	09-10	**.010** (.009-.011)	**.010** (.008-.011)	**.016** (.013-.018)	**.026** (.022-.030)	**.036** (.030-.044)	613
Non-Hispanic blacks	99-00	**.006** (.004-.007)	**.005** (.004-.006)	**.008** (.006-.013)	**.017** (.011-.029)	**.028** (.018-.048)	568
	01-02	**.005** (.005-.006)	**.005** (.005-.006)	**.008** (.007-.010)	**.013** (.011-.014)	**.017** (.014-.029)	667
	03-04	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.008-.009)	**.013** (.012-.015)	**.018** (.014-.024)	722
	05-06	**.004** (.004-.005)	**.004** (.003-.005)	**.006** (.006-.007)	**.011** (.009-.015)	**.017** (.012-.021)	692
	07-08	**.005** (.005-.006)	**.005** (.004-.006)	**.009** (.007-.011)	**.014** (.011-.017)	**.018** (.014-.041)	589
	09-10	**.006** (.005-.008)	**.006** (.005-.007)	**.010** (.008-.012)	**.018** (.013-.021)	**.023** (.018-.044)	544
Non-Hispanic whites	99-00	**.007** (.006-.009)	**.007** (.006-.009)	**.012** (.010-.015)	**.021** (.017-.027)	**.030** (.024-.050)	822
	01-02	**.008** (.007-.009)	**.007** (.006-.009)	**.013** (.011-.016)	**.025** (.018-.032)	**.034** (.025-.051)	1132
	03-04	*	**.007** (.006-.008)	**.011** (.010-.013)	**.019** (.015-.024)	**.027** (.020-.040)	1074
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.008-.010)	**.016** (.013-.020)	**.024** (.019-.039)	1041
	07-08	**.007** (.006-.009)	**.006** (.005-.008)	**.012** (.009-.019)	**.025** (.015-.043)	**.039** (.024-.081)	1095
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.013)	**.018** (.015-.024)	**.028** (.021-.035)	1225

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Urinary Uranium (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.007** (.006-.008)	**.007** (.006-.008)	**.011** (.009-.014)	**.021** (.015-.026)	**.029** (.023-.037)	2502
Age group							
6-11 years	11-12	**.009** (.007-.011)	**.008** (.007-.010)	**.013** (.011-.017)	**.023** (.014-.031)	**.031** (.018-.080)	398
12-19 years	11-12	**.007** (.005-.009)	**.006** (.005-.009)	**.010** (.008-.013)	**.016** (.013-.026)	**.026** (.015-.059)	390
20 years and older	11-12	**.007** (.006-.008)	**.006** (.005-.008)	**.011** (.009-.014)	**.021** (.015-.027)	**.029** (.022-.041)	1714
Gender							
Males	11-12	**.006** (.005-.007)	**.006** (.005-.007)	**.009** (.007-.013)	**.017** (.012-.026)	**.027** (.017-.052)	1261
Females	11-12	**.008** (.007-.009)	**.007** (.006-.009)	**.013** (.010-.016)	**.022** (.020-.026)	**.030** (.026-.036)	1241
Race/ethnicity							
Mexican Americans	11-12	**.008** (.006-.011)	**.008** (.006-.011)	**.013** (.010-.018)	**.021** (.014-.030)	**.027** (.019-.046)	317
Non-Hispanic blacks	11-12	**.005** (.004-.006)	**.005** (.004-.006)	**.008** (.006-.009)	**.013** (.009-.019)	**.019** (.014-.030)	669
Non-Hispanic whites	11-12	**.007** (.006-.009)	**.007** (.006-.008)	**.012** (.010-.016)	**.022** (.018-.028)	**.031** (.023-.057)	818
All Hispanics	11-12	**.007** (.005-.008)	**.007** (.005-.009)	**.011** (.009-.014)	**.018** (.013-.026)	**.025** (.019-.034)	573
Asians	11-12	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.013)	**.019** (.015-.032)	**.033** (.018-.048)	353

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Serum Zinc (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/dL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**81.9** (80.9-82.9)	**81.8** (80.8-82.9)	**91.5** (89.8-93.1)	**101** (99.1-104)	**109** (105-112)	2329
Age group							
6-11 years	11-12	**81.3** (79.4-83.2)	**82.0** (79.2-83.7)	**90.3** (86.3-93.4)	**101** (93.7-106)	**106** (101-114)	316
12-19 years	11-12	**83.0** (81.5-84.5)	**81.9** (79.4-85.0)	**94.4** (89.6-96.0)	**103** (99.1-105)	**106** (103-115)	366
20 years and older	11-12	**81.8** (80.7-83.0)	**81.7** (80.6-82.9)	**91.3** (89.3-93.4)	**101** (98.6-104)	**109** (105-114)	1647
Gender							
Males	11-12	**84.2** (82.7-85.8)	**83.9** (82.4-85.4)	**94.0** (91.9-96.4)	**104** (101-109)	**112** (108-117)	1162
Females	11-12	**79.8** (78.7-81.0)	**79.7** (78.2-81.1)	**88.5** (87.3-90.2)	**99.6** (95.5-103)	**105** (103-108)	1167
Race/ethnicity							
Mexican Americans	11-12	**81.4** (77.2-85.7)	**81.8** (76.4-86.4)	**89.6** (86.5-96.4)	**101** (94.3-110)	**110** (100-119)	285
Non-Hispanic blacks	11-12	**79.7** (77.9-81.5)	**79.4** (77.8-81.3)	**90.9** (87.0-93.3)	**101** (95.7-106)	**108** (103-111)	620
Non-Hispanic whites	11-12	**82.8** (81.3-84.2)	**82.9** (81.1-84.5)	**92.2** (89.8-94.5)	**102** (98.0-105)	**109** (103-117)	780
All Hispanics	11-12	**80.4** (78.1-82.7)	**80.1** (77.5-83.1)	**88.8** (86.4-92.4)	**100** (96.2-106)	**109** (101-116)	525
Asians	11-12	**81.2** (79.0-83.6)	**81.0** (78.6-83.7)	**91.3** (88.7-95.1)	**101** (97.9-107)	**110** (103-114)	323

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.9.

Urinary Butyl paraben (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	**1.30** (.800-1.80)	**6.60** (4.80-10.7)	**19.6** (16.4-26.7)	2548
	07-08	*	< LOD	**1.10** (.900-1.50)	**9.00** (6.20-11.4)	**20.9** (15.2-30.1)	2604
	09-10	*	< LOD	**.600** (.500-.800)	**5.10** (3.40-8.10)	**17.1** (10.5-29.4)	2749
Age group							
6-11 years	05-06	*	< LOD	**.400** (.200-.600)	**1.90** (.800-5.80)	**7.50** (1.70-18.5)	356
	07-08	*	< LOD	**.300** (.200-.500)	**1.30** (.900-1.70)	**3.80** (1.00-114)	389
	09-10	*	< LOD	**.300** (<LOD-.400)	**.900** (.500-1.70)	**2.20** (1.30-5.10)	415
12-19 years	05-06	*	**.200** (<LOD-.400)	**.900** (.600-1.80)	**9.60** (4.10-16.1)	**24.6** (14.5-33.4)	702
	07-08	*	< LOD	**.800** (.600-1.40)	**6.20** (2.50-11.5)	**15.8** (6.20-33.2)	401
	09-10	*	< LOD	**.500** (.400-.900)	**5.70** (1.40-15.7)	**18.6** (5.70-39.0)	420
20 years and older	05-06	*	< LOD	**1.70** (1.00-2.20)	**6.80** (4.80-11.7)	**20.5** (15.8-28.3)	1490
	07-08	*	< LOD	**1.50** (1.00-1.90)	**9.80** (6.70-13.4)	**24.6** (16.5-32.0)	1814
	09-10	*	< LOD	**.700** (.500-1.00)	**6.00** (3.70-10.0)	**18.7** (11.9-35.1)	1914
Gender							
Males	05-06	*	< LOD	**.300** (<LOD-.300)	**1.10** (.600-2.00)	**3.20** (1.90-5.50)	1270
	07-08	*	< LOD	**.200** (.200-.300)	**1.00** (.700-1.50)	**3.60** (2.00-7.20)	1294
	09-10	*	< LOD	< LOD	**.800** (.500-1.20)	**2.70** (1.50-12.0)	1399
Females	05-06	**.904** (.760-1.07)	**.500** (.400-.700)	**3.70** (2.90-4.80)	**17.4** (11.7-20.8)	**34.9** (28.2-41.1)	1278
	07-08	**.926** (.825-1.04)	**.500** (.400-.700)	**3.90** (3.00-4.70)	**17.9** (12.1-20.5)	**34.8** (25.2-52.1)	1310
	09-10	*	**.300** (.200-.400)	**1.80** (1.30-2.30)	**11.3** (6.60-18.8)	**31.8** (17.7-49.4)	1350
Race/ethnicity							
Mexican Americans	05-06	*	**.200** (<LOD-.300)	**1.10** (.700-2.30)	**11.3** (6.40-15.6)	**27.3** (16.5-35.9)	637
	07-08	*	< LOD	**.900** (.500-1.30)	**6.80** (3.50-13.2)	**22.7** (13.2-30.7)	531
	09-10	*	< LOD	**.900** (.400-1.30)	**8.30** (4.50-13.8)	**18.8** (13.8-35.1)	566
Non-Hispanic blacks	05-06	*	**.300** (.200-.400)	**2.10** (1.00-3.50)	**9.10** (4.40-25.0)	**31.8** (10.1-82.6)	678
	07-08	*	**.200** (<LOD-.300)	**1.10** (.700-1.70)	**7.10** (4.20-9.90)	**20.0** (8.90-31.3)	597
	09-10	*	< LOD	**.500** (.300-.900)	**3.10** (1.40-7.30)	**9.00** (5.60-16.7)	516
Non-Hispanic whites	05-06	*	< LOD	**1.00** (.700-1.80)	**5.80** (4.00-9.00)	**17.7** (11.7-25.9)	1038
	07-08	*	< LOD	**1.20** (.800-1.60)	**9.10** (5.00-13.3)	**19.6** (12.1-32.0)	1077
	09-10	*	< LOD	**.700** (.500-.900)	**4.90** (2.70-9.20)	**17.7** (9.20-34.5)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.2, 0.2, and 0.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Butyl paraben (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**.300** (.200-.400)	**2.50** (1.60-3.40)	**7.70** (4.50-11.4)	2489
Age group							
6-11 years	11-12	*	**< LOD**	**< LOD**	**.700** (.300-1.00)	**1.50** (1.00-1.90)	396
12-19 years	11-12	*	**< LOD**	**.300** (<LOD-.400)	**.900** (.500-1.60)	**1.90** (1.10-7.10)	388
20 years and older	11-12	*	**< LOD**	**.400** (.300-.500)	**3.30** (2.20-5.50)	**8.90** (5.50-13.9)	1705
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**.400** (.200-.500)	**1.30** (.500-2.40)	1259
Females	11-12	*	**< LOD**	**.900** (.600-1.40)	**5.90** (3.40-10.4)	**13.4** (9.30-24.5)	1230
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**.300** (<LOD-.400)	**1.80** (1.40-5.90)	**10.0** (3.20-13.7)	316
Non-Hispanic blacks	11-12	*	**< LOD**	**.200** (<LOD-.300)	**1.60** (1.00-2.50)	**4.70** (2.50-8.10)	665
Non-Hispanic whites	11-12	*	**< LOD**	**.300** (.200-.500)	**2.60** (1.50-4.60)	**8.00** (4.10-13.0)	813
All Hispanics	11-12	*	**< LOD**	**.300** (<LOD-.400)	**2.60** (1.30-7.00)	**10.2** (3.40-21.5)	571
Asians	11-12	*	**< LOD**	**.400** (<LOD-1.10)	**3.10** (1.40-7.70)	**12.0** (4.80-20.5)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Butyl paraben (creatinine corrected) (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	**1.16** (.910-1.62)	**7.82** (6.26-11.2)	**21.2** (16.8-27.3)	2548
	07-08	*	< LOD	**1.16** (.880-1.59)	**9.83** (6.51-13.5)	**23.1** (18.1-30.4)	2604
	09-10	*	< LOD	**.710** (.610-.930)	**5.58** (3.55-10.0)	**18.0** (10.2-27.6)	2749
Age group							
6-11 years	05-06	*	< LOD	**.440** (.370-.660)	**1.65** (1.00-5.29)	**7.92** (1.64-30.5)	356
	07-08	*	< LOD	**.540** (.410-.720)	**1.24** (.920-2.80)	**5.91** (.930-76.0)	389
	09-10	*	< LOD	**.530** (<LOD-.630)	**1.36** (.740-1.89)	**2.74** (1.56-6.58)	415
12-19 years	05-06	*	**.190** (<LOD-.250)	**.690** (.490-1.20)	**6.67** (3.60-11.2)	**18.7** (9.52-28.9)	702
	07-08	*	< LOD	**.670** (.450-.930)	**3.70** (1.80-7.41)	**9.64** (6.00-18.7)	401
	09-10	*	< LOD	**.550** (.420-.790)	**3.75** (1.21-11.9)	**13.8** (3.75-23.7)	420
20 years and older	05-06	*	< LOD	**1.49** (1.06-1.96)	**9.07** (6.55-14.8)	**25.5** (17.9-30.4)	1490
	07-08	*	< LOD	**1.52** (1.04-2.21)	**12.4** (8.35-15.1)	**27.5** (21.2-36.8)	1814
	09-10	*	< LOD	**.830** (.640-1.19)	**7.06** (3.79-11.9)	**22.0** (13.1-31.2)	1914
Gender							
Males	05-06	*	< LOD	**.290** (<LOD-.350)	**.830** (.570-1.16)	**2.28** (1.43-2.91)	1270
	07-08	*	< LOD	**.290** (.260-.340)	**.830** (.620-1.36)	**2.40** (1.56-4.85)	1294
	09-10	*	< LOD	< LOD	**.700** (.560-1.09)	**2.50** (1.18-5.87)	1399
Females	05-06	**1.06** (.914-1.24)	**.750** (.600-.860)	**4.44** (3.01-6.26)	**19.8** (13.5-25.7)	**34.7** (26.9-42.7)	1278
	07-08	**1.11** (.984-1.25)	**.670** (.550-.920)	**4.44** (3.02-6.12)	**20.6** (14.6-25.9)	**39.4** (28.1-77.7)	1310
	09-10	*	**.450** (.420-.520)	**2.17** (1.67-3.10)	**13.5** (8.75-22.5)	**28.2** (18.4-45.7)	1350
Race/ethnicity							
Mexican Americans	05-06	*	**.240** (<LOD-.290)	**1.20** (.760-1.68)	**9.15** (5.36-15.2)	**20.3** (15.8-29.2)	637
	07-08	*	< LOD	**.810** (.610-1.07)	**8.57** (3.28-12.0)	**23.0** (12.7-29.5)	531
	09-10	*	< LOD	**.930** (.570-1.76)	**8.01** (4.77-10.5)	**17.0** (10.5-27.1)	566
Non-Hispanic blacks	05-06	*	**.220** (.180-.270)	**1.46** (.750-2.64)	**8.18** (3.65-17.9)	**21.0** (10.9-51.3)	678
	07-08	*	**.220** (<LOD-.280)	**.900** (.570-1.27)	**5.21** (3.13-6.18)	**12.1** (6.14-21.4)	597
	09-10	*	< LOD	**.390** (.270-.590)	**2.63** (.890-4.71)	**7.00** (3.26-11.9)	516
Non-Hispanic whites	05-06	*	< LOD	**1.12** (.850-1.65)	**6.93** (5.21-9.91)	**20.9** (15.4-27.3)	1038
	07-08	*	< LOD	**1.18** (.810-2.09)	**10.7** (6.32-14.8)	**26.8** (15.1-40.4)	1077
	09-10	*	< LOD	**.780** (.620-1.13)	**6.34** (3.44-12.6)	**20.8** (9.12-33.2)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Butyl paraben (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	**.560** (.476-.667)	**3.50** (2.00-4.55)	**10.0** (6.26-13.5)	2487
Age group							
6-11 years	11-12	*	< LOD	< LOD	**.825** (.737-1.12)	**1.56** (.825-2.44)	395
12-19 years	11-12	*	< LOD	**.378** (<LOD-.588)	**1.35** (.588-2.21)	**2.21** (1.50-7.45)	388
20 years and older	11-12	*	< LOD	**.609** (.500-.789)	**4.02** (2.58-6.28)	**12.2** (7.04-17.9)	1704
Gender							
Males	11-12	*	< LOD	< LOD	**.583** (.424-.824)	**1.35** (.778-2.25)	1258
Females	11-12	*	< LOD	**1.56** (1.08-2.00)	**8.19** (5.33-12.1)	**17.6** (11.8-30.8)	1229
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	**.533** (<LOD-.660)	**3.48** (1.30-4.33)	**7.45** (3.50-19.2)	316
Non-Hispanic blacks	11-12	*	< LOD	**.298** (<LOD-.378)	**1.43** (.875-1.93)	**3.47** (1.93-6.72)	665
Non-Hispanic whites	11-12	*	< LOD	**.606** (.500-.778)	**3.78** (2.08-5.63)	**11.5** (5.39-15.7)	811
All Hispanics	11-12	*	< LOD	**.526** (<LOD-.700)	**3.50** (1.53-6.88)	**13.7** (6.54-19.2)	571
Asians	11-12	*	< LOD	**.824** (<LOD-1.30)	**6.28** (2.03-12.3)	**14.9** (7.89-18.8)	352

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Ethyl paraben (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	**4.80** (3.40-6.00)	**26.2** (19.4-31.9)	**57.2** (40.3-83.4)	2548
	07-08	*	< LOD	**5.40** (3.80-6.90)	**29.3** (21.9-42.4)	**72.1** (54.6-91.8)	2604
	09-10	*	**1.10** (<LOD-1.20)	**6.60** (4.90-8.30)	**37.6** (24.4-51.3)	**82.6** (60.3-119)	2749
Age group							
6-11 years	05-06	*	< LOD	< LOD	**2.60** (1.70-4.70)	**9.90** (2.80-30.7)	356
	07-08	*	< LOD	**1.70** (1.10-2.60)	**4.60** (2.30-36.7)	**35.6** (2.60-282)	389
	09-10	*	< LOD	**1.50** (1.20-1.80)	**3.70** (2.50-5.30)	**11.5** (4.50-18.4)	415
12-19 years	05-06	*	< LOD	**2.30** (1.30-3.20)	**11.3** (7.90-24.1)	**38.0** (17.7-122)	702
	07-08	*	< LOD	**3.00** (2.30-4.90)	**23.0** (7.30-60.3)	**60.3** (12.5-159)	401
	09-10	*	< LOD	**3.50** (2.10-5.90)	**33.8** (19.4-49.6)	**83.2** (34.5-284)	420
20 years and older	05-06	*	< LOD	**5.90** (4.60-8.10)	**30.4** (22.3-38.6)	**69.5** (48.1-89.5)	1490
	07-08	*	**1.10** (<LOD-1.40)	**6.20** (4.60-9.20)	**34.7** (22.8-50.4)	**77.4** (51.4-120)	1814
	09-10	*	**1.30** (1.10-1.50)	**8.40** (6.00-10.6)	**45.0** (29.1-60.3)	**91.4** (62.6-129)	1914
Gender							
Males	05-06	*	< LOD	**1.90** (1.20-3.00)	**8.90** (5.80-13.7)	**25.2** (15.7-29.2)	1270
	07-08	*	< LOD	**2.40** (1.50-3.00)	**11.2** (6.60-15.3)	**28.3** (15.3-42.8)	1294
	09-10	*	< LOD	**2.20** (1.90-2.70)	**10.4** (7.40-19.1)	**36.4** (19.1-61.3)	1399
Females	05-06	*	**1.30** (<LOD-2.20)	**10.0** (7.50-13.2)	**42.7** (32.3-62.8)	**98.7** (74.7-147)	1278
	07-08	*	**1.80** (1.40-2.50)	**10.1** (6.90-16.5)	**62.0** (38.2-80.8)	**123** (78.5-259)	1310
	09-10	**3.84** (3.35-4.41)	**2.00** (1.60-2.40)	**15.4** (12.5-18.4)	**62.4** (45.7-78.7)	**138** (92.2-211)	1350
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	**3.70** (1.90-6.10)	**24.0** (11.6-37.7)	**55.6** (40.3-120)	637
	07-08	*	< LOD	**4.10** (2.90-5.90)	**23.6** (12.8-30.1)	**48.3** (31.0-65.2)	531
	09-10	*	< LOD	**4.30** (2.60-7.70)	**31.0** (21.5-46.3)	**65.5** (46.3-92.2)	566
Non-Hispanic blacks	05-06	*	**1.00** (<LOD-1.50)	**5.70** (3.70-9.80)	**31.3** (20.4-52.1)	**92.3** (41.5-166)	678
	07-08	*	**1.00** (<LOD-1.50)	**7.90** (3.90-15.8)	**39.9** (24.0-63.4)	**97.2** (58.3-256)	597
	09-10	**3.62** (3.11-4.22)	**1.90** (1.60-2.40)	**11.1** (8.10-17.5)	**58.6** (33.8-93.7)	**166** (66.0-297)	516
Non-Hispanic whites	05-06	*	< LOD	**4.80** (3.10-6.10)	**24.0** (15.5-32.3)	**54.7** (36.4-86.8)	1038
	07-08	*	**1.00** (<LOD-1.30)	**5.20** (3.50-7.10)	**27.2** (18.0-40.8)	**67.1** (42.8-98.1)	1077
	09-10	*	**1.10** (<LOD-1.20)	**6.50** (4.50-8.50)	**37.5** (22.7-52.7)	**78.7** (49.7-138)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 1.0, 1.0, and 1.0 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Ethyl paraben (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**5.10** (4.00-7.10)	**33.6** (24.6-42.9)	**68.8** (52.1-106)	2489
Age group							
6-11 years	11-12	*	**< LOD**	**< LOD**	**3.40** (1.70-6.90)	**6.90** (3.40-17.4)	396
12-19 years	11-12	*	**< LOD**	**2.00** (1.10-3.10)	**9.60** (5.50-14.0)	**21.5** (9.60-69.2)	388
20 years and older	11-12	*	**< LOD**	**7.20** (5.50-10.0)	**41.1** (33.4-51.0)	**86.5** (58.0-140)	1705
Gender							
Males	11-12	*	**< LOD**	**2.20** (1.60-2.90)	**10.0** (6.10-18.9)	**31.2** (18.9-39.8)	1259
Females	11-12	*	**1.60** (1.10-2.60)	**12.9** (9.40-17.5)	**58.2** (45.4-68.8)	**145** (86.5-153)	1230
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**4.40** (2.40-6.40)	**22.0** (12.9-35.5)	**45.4** (22.4-171)	316
Non-Hispanic blacks	11-12	*	**1.50** (1.10-2.00)	**8.00** (5.80-12.8)	**55.4** (33.4-79.7)	**106** (82.8-139)	665
Non-Hispanic whites	11-12	*	**< LOD**	**4.60** (3.50-9.10)	**33.6** (21.6-45.4)	**62.6** (42.9-132)	813
All Hispanics	11-12	*	**< LOD**	**4.50** (3.00-5.80)	**24.4** (15.2-34.6)	**55.9** (27.1-115)	571
Asians	11-12	*	**< LOD**	**4.90** (3.40-8.30)	**39.4** (16.0-59.1)	**92.4** (43.4-186)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Ethyl paraben (creatinine corrected) (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	**4.61** (3.39-6.30)	**27.1** (19.1-34.0)	**66.5** (46.5-84.2)	2548
	07-08	*	< LOD	**5.56** (4.31-7.56)	**32.7** (22.5-50.2)	**80.0** (53.2-117)	2604
	09-10	*	**1.65** (<LOD-1.82)	**6.11** (4.90-7.96)	**36.6** (28.0-47.2)	**94.6** (67.3-127)	2749
Age group							
6-11 years	05-06	*	< LOD	< LOD	**4.18** (1.91-10.2)	**13.5** (4.18-29.0)	356
	07-08	*	< LOD	**2.54** (1.82-3.30)	**6.13** (3.26-34.3)	**34.3** (3.30-207)	389
	09-10	*	< LOD	**2.37** (1.97-3.09)	**5.00** (3.74-6.67)	**10.1** (6.11-27.3)	415
12-19 years	05-06	*	< LOD	**1.94** (1.29-2.65)	**10.9** (3.57-20.2)	**32.0** (14.1-57.8)	702
	07-08	*	< LOD	**2.93** (1.93-3.97)	**12.9** (4.60-37.9)	**37.9** (8.79-110)	401
	09-10	*	< LOD	**3.11** (2.22-5.94)	**26.2** (13.0-33.9)	**52.4** (28.8-177)	420
20 years and older	05-06	*	< LOD	**6.36** (4.63-7.92)	**32.4** (23.7-46.0)	**76.8** (57.3-97.9)	1490
	07-08	*	**1.58** (<LOD-1.97)	**6.97** (4.94-10.9)	**38.5** (24.8-61.9)	**94.1** (53.6-146)	1814
	09-10	*	**1.82** (1.61-2.13)	**8.08** (5.92-10.7)	**43.7** (33.1-56.0)	**106** (78.1-137)	1914
Gender							
Males	05-06	*	< LOD	**1.82** (1.48-2.15)	**6.38** (3.55-9.95)	**15.5** (10.2-22.3)	1270
	07-08	*	< LOD	**2.14** (1.67-3.03)	**8.61** (5.54-12.4)	**21.7** (11.7-32.7)	1294
	09-10	*	< LOD	**2.45** (2.22-2.92)	**8.63** (6.14-13.7)	**28.8** (14.4-43.2)	1399
Females	05-06	*	**2.09** (<LOD-2.60)	**12.7** (8.45-16.2)	**57.3** (40.7-75.2)	**107** (82.9-141)	1278
	07-08	*	**2.63** (2.09-3.55)	**13.9** (9.09-22.5)	**66.1** (40.9-95.1)	**130** (78.8-203)	1310
	09-10	**4.63** (4.13-5.19)	**2.90** (2.47-3.43)	**16.8** (13.7-22.0)	**71.9** (53.4-98.8)	**173** (121-227)	1350
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	**3.49** (2.09-5.23)	**23.6** (11.8-33.2)	**68.5** (32.1-107)	637
	07-08	*	< LOD	**4.44** (2.86-5.81)	**22.5** (15.9-27.2)	**47.7** (26.7-74.2)	531
	09-10	*	< LOD	**4.40** (3.09-6.31)	**30.0** (16.0-36.9)	**59.1** (36.9-87.2)	566
Non-Hispanic blacks	05-06	*	**.970** (<LOD-1.14)	**4.48** (2.90-6.07)	**22.0** (14.1-36.8)	**47.5** (33.7-106)	678
	07-08	*	**1.18** (<LOD-1.47)	**6.37** (3.20-10.9)	**38.8** (16.5-53.1)	**90.7** (42.6-172)	597
	09-10	**2.62** (2.14-3.21)	**1.57** (1.20-2.05)	**7.35** (5.15-9.97)	**44.9** (22.0-75.0)	**98.8** (60.0-162)	516
Non-Hispanic whites	05-06	*	< LOD	**4.73** (3.38-6.58)	**27.5** (16.2-38.4)	**70.6** (46.0-91.2)	1038
	07-08	*	**1.48** (<LOD-1.82)	**5.71** (3.74-8.97)	**32.3** (20.0-53.6)	**75.7** (40.5-121)	1077
	09-10	*	**1.79** (<LOD-2.03)	**6.63** (4.84-9.18)	**37.7** (27.7-53.4)	**114** (62.8-164)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Ethyl paraben (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	**6.57** (5.32-8.80)	**39.5** (28.4-50.6)	**87.7** (63.6-121)	2487
Age group							
6-11 years	11-12	*	< LOD	< LOD	**5.92** (3.74-7.50)	**7.95** (6.51-17.8)	395
12-19 years	11-12	*	< LOD	**2.53** (1.81-3.83)	**11.1** (6.70-14.5)	**20.5** (11.9-44.1)	388
20 years and older	11-12	*	< LOD	**9.17** (6.69-12.5)	**46.4** (34.7-64.8)	**110** (71.5-146)	1704
Gender							
Males	11-12	*	< LOD	**2.45** (2.07-2.94)	**8.76** (5.32-14.2)	**23.2** (13.2-33.1)	1258
Females	11-12	*	**2.96** (2.37-4.08)	**18.9** (12.5-27.6)	**81.9** (55.6-121)	**146** (115-181)	1229
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	**4.73** (3.29-8.92)	**25.4** (14.2-33.9)	**45.4** (32.6-121)	316
Non-Hispanic blacks	11-12	*	**1.39** (1.06-1.75)	**6.98** (4.74-8.92)	**40.2** (24.8-55.3)	**79.3** (61.1-135)	665
Non-Hispanic whites	11-12	*	< LOD	**7.20** (4.88-10.4)	**40.1** (26.4-63.5)	**93.8** (58.4-131)	811
All Hispanics	11-12	*	< LOD	**5.03** (3.74-7.13)	**31.6** (13.2-54.0)	**60.2** (43.6-121)	571
Asians	11-12	*	< LOD	**7.21** (4.46-13.6)	**48.9** (26.3-78.9)	**100** (50.4-149)	352

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Methyl paraben (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**56.4** (46.9-67.9)	**63.5** (47.9-74.5)	**216** (168-282)	**560** (432-777)	**974** (827-1110)	2548
	07-08	**60.1** (49.6-72.8)	**59.8** (47.5-73.3)	**204** (171-253)	**544** (444-675)	**902** (746-1100)	2604
	09-10	**57.1** (51.0-63.9)	**55.1** (46.7-62.6)	**213** (179-259)	**621** (546-716)	**1010** (919-1170)	2749
Age group							
6-11 years	05-06	**33.5** (25.6-43.8)	**25.0** (19.4-35.3)	**86.7** (61.5-153)	**289** (238-868)	**1560** (389-2090)	356
	07-08	**35.2** (25.0-49.6)	**30.1** (19.6-38.5)	**94.0** (46.6-214)	**340** (218-527)	**651** (430-995)	389
	09-10	**33.9** (27.4-41.9)	**26.5** (20.4-33.3)	**79.4** (59.0-126)	**415** (163-849)	**873** (477-1230)	415
12-19 years	05-06	**53.8** (43.9-66.0)	**53.5** (39.4-65.7)	**192** (163-264)	**491** (380-720)	**901** (571-1210)	702
	07-08	**64.9** (50.3-83.8)	**66.3** (48.0-96.7)	**221** (180-276)	**521** (424-789)	**971** (574-1390)	401
	09-10	**53.9** (40.9-70.9)	**56.5** (39.4-75.6)	**176** (122-291)	**716** (399-934)	**984** (805-1210)	420
20 years and older	05-06	**60.3** (48.7-74.7)	**70.0** (57.1-85.3)	**225** (177-322)	**602** (439-814)	**974** (827-1110)	1490
	07-08	**63.0** (51.8-76.7)	**64.0** (51.4-79.8)	**210** (172-267)	**558** (447-678)	**916** (743-1190)	1814
	09-10	**61.0** (53.5-69.6)	**59.1** (50.6-72.6)	**239** (188-276)	**625** (566-711)	**1010** (909-1270)	1914
Gender							
Males	05-06	**29.8** (24.8-35.8)	**23.7** (19.5-29.4)	**97.6** (78.1-121)	**299** (229-355)	**491** (385-743)	1270
	07-08	**33.6** (27.3-41.3)	**27.4** (20.8-39.9)	**93.5** (71.0-137)	**312** (260-407)	**598** (460-734)	1294
	09-10	**31.7** (27.6-36.4)	**25.3** (20.6-30.6)	**94.0** (76.8-122)	**366** (275-482)	**727** (569-919)	1399
Females	05-06	**104** (80.8-135)	**137** (93.0-168)	**356** (279-427)	**842** (660-974)	**1110** (956-1330)	1278
	07-08	**105** (90.2-123)	**116** (95.2-139)	**315** (248-424)	**683** (558-901)	**1140** (917-1420)	1310
	09-10	**100** (87.9-114)	**106** (90.9-125)	**349** (271-405)	**812** (696-931)	**1230** (1010-1550)	1350
Race/ethnicity							
Mexican Americans	05-06	**78.2** (61.0-100)	**86.3** (64.7-121)	**301** (233-349)	**742** (474-896)	**1100** (896-1170)	637
	07-08	**80.5** (66.0-98.2)	**87.0** (63.4-117)	**283** (222-348)	**630** (533-791)	**1030** (773-1240)	531
	09-10	**82.9** (68.6-100)	**85.5** (73.0-99.8)	**293** (231-385)	**821** (536-1120)	**1580** (855-2360)	566
Non-Hispanic blacks	05-06	**174** (133-229)	**216** (150-306)	**616** (465-789)	**1180** (1010-1480)	**1690** (1210-2880)	678
	07-08	**152** (135-171)	**159** (135-194)	**483** (421-552)	**1080** (938-1350)	**1720** (1210-2700)	597
	09-10	**191** (171-213)	**223** (170-288)	**678** (533-849)	**1470** (1220-2010)	**2340** (1650-2750)	516
Non-Hispanic whites	05-06	**43.8** (36.7-52.3)	**44.3** (36.7-58.2)	**165** (132-209)	**412** (320-520)	**806** (485-974)	1038
	07-08	**48.9** (39.9-59.9)	**47.6** (37.8-62.0)	**158** (129-198)	**430** (301-557)	**671** (524-921)	1077
	09-10	**43.5** (39.4-48.1)	**41.3** (33.5-47.7)	**150** (127-176)	**463** (361-557)	**757** (619-888)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 1.0, 1.0, and 1.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Methyl paraben (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**40.3** (35.4-46.0)	**39.0** (32.4-47.8)	**172** (149-198)	**471** (401-593)	**841** (692-975)	2489
Age group							
6-11 years	11-12	**18.5** (15.7-21.9)	**13.8** (11.2-17.7)	**58.6** (43.8-78.2)	**217** (155-363)	**549** (329-983)	396
12-19 years	11-12	**26.3** (19.0-36.5)	**17.0** (9.80-31.2)	**121** (62.4-219)	**538** (376-667)	**772** (609-996)	388
20 years and older	11-12	**46.8** (41.3-53.1)	**48.9** (37.8-61.0)	**188** (158-231)	**477** (409-611)	**870** (676-1070)	1705
Gender							
Males	11-12	**23.2** (19.2-28.1)	**17.3** (12.5-23.4)	**81.9** (65.7-119)	**312** (224-396)	**575** (401-822)	1259
Females	11-12	**68.6** (59.0-79.9)	**76.9** (67.5-89.2)	**248** (201-309)	**637** (493-819)	**972** (772-1190)	1230
Race/ethnicity							
Mexican Americans	11-12	**43.9** (31.5-61.2)	**44.9** (26.2-68.1)	**192** (111-302)	**529** (328-912)	**1080** (471-1740)	316
Non-Hispanic blacks	11-12	**123** (100-152)	**155** (115-199)	**450** (341-579)	**934** (819-1110)	**1390** (1020-1990)	665
Non-Hispanic whites	11-12	**31.0** (26.9-35.8)	**30.0** (23.4-36.4)	**130** (96.8-160)	**372** (269-453)	**603** (453-772)	813
All Hispanics	11-12	**50.1** (40.5-62.1)	**46.0** (39.5-59.4)	**203** (130-301)	**666** (406-1080)	**1170** (766-2100)	571
Asians	11-12	**36.1** (29.2-44.5)	**37.1** (24.6-57.4)	**140** (97.9-175)	**395** (259-509)	**692** (461-1030)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Methyl paraben (creatinine corrected) (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**55.0** (46.8-64.6)	**58.8** (47.0-73.4)	**221** (170-264)	**527** (426-685)	**902** (753-995)	2548
	07-08	**60.6** (49.8-73.8)	**61.0** (45.3-83.2)	**228** (188-288)	**538** (439-645)	**820** (694-1000)	2604
	09-10	**59.6** (53.5-66.3)	**57.7** (52.3-68.5)	**232** (195-262)	**544** (468-632)	**887** (734-1020)	2749
Age group							
6-11 years	05-06	**36.8** (27.9-48.7)	**26.9** (21.0-36.6)	**108** (55.9-164)	**259** (195-753)	**1540** (313-2510)	356
	07-08	**43.4** (31.3-60.2)	**33.1** (21.8-55.0)	**118** (62.3-197)	**424** (218-668)	**817** (558-1020)	389
	09-10	**44.2** (35.7-54.6)	**32.3** (26.5-42.9)	**110** (67.6-158)	**483** (258-722)	**849** (535-1080)	415
12-19 years	05-06	**40.1** (33.7-47.8)	**41.7** (31.5-56.3)	**160** (129-178)	**362** (280-428)	**549** (434-656)	702
	07-08	**50.5** (40.1-63.7)	**52.8** (36.6-78.1)	**167** (111-245)	**336** (292-395)	**475** (376-623)	401
	09-10	**43.3** (33.5-55.9)	**43.5** (27.5-68.6)	**168** (123-221)	**399** (292-558)	**632** (425-890)	420
20 years and older	05-06	**60.5** (50.5-72.5)	**69.6** (51.5-90.9)	**251** (189-320)	**602** (462-729)	**930** (788-1010)	1490
	07-08	**64.7** (52.9-79.2)	**69.7** (51.1-92.5)	**256** (209-316)	**576** (450-710)	**865** (697-1130)	1814
	09-10	**64.6** (57.0-73.3)	**71.2** (56.6-84.7)	**251** (217-287)	**566** (495-673)	**924** (753-1060)	1914
Gender							
Males	05-06	**23.9** (20.6-27.8)	**21.1** (17.4-25.3)	**72.1** (58.0-89.5)	**209** (160-260)	**368** (262-498)	1270
	07-08	**28.3** (22.8-35.0)	**23.5** (17.2-33.2)	**80.7** (56.9-111)	**257** (181-318)	**444** (386-558)	1294
	09-10	**28.4** (25.1-32.2)	**23.3** (19.3-26.9)	**77.7** (59.6-105)	**260** (212-370)	**516** (412-633)	1399
Females	05-06	**123** (99.3-152)	**147** (111-196)	**377** (319-445)	**788** (676-910)	**1050** (937-1290)	1278
	07-08	**126** (109-145)	**160** (134-182)	**374** (325-422)	**734** (576-879)	**1040** (835-1260)	1310
	09-10	**121** (107-137)	**146** (125-162)	**359** (307-426)	**745** (606-890)	**1080** (924-1390)	1350
Race/ethnicity							
Mexican Americans	05-06	**70.3** (57.1-86.7)	**85.8** (67.2-106)	**249** (191-303)	**515** (431-656)	**870** (656-1080)	637
	07-08	**78.5** (63.6-97.0)	**96.2** (59.4-127)	**293** (245-370)	**627** (541-728)	**831** (729-963)	531
	09-10	**82.3** (71.1-95.2)	**95.2** (76.0-113)	**284** (237-337)	**623** (459-899)	**1130** (657-2120)	566
Non-Hispanic blacks	05-06	**122** (93.0-161)	**161** (98.2-225)	**377** (334-462)	**792** (581-1100)	**1220** (916-1590)	678
	07-08	**118** (105-133)	**134** (111-155)	**356** (311-403)	**757** (573-882)	**1030** (847-1290)	597
	09-10	**138** (118-163)	**165** (127-203)	**403** (356-498)	**928** (729-1120)	**1350** (1080-1680)	516
Non-Hispanic whites	05-06	**46.1** (39.0-54.4)	**45.6** (34.5-59.7)	**170** (142-234)	**447** (339-706)	**814** (640-995)	1038
	07-08	**51.0** (40.5-64.2)	**46.7** (35.8-66.3)	**191** (154-230)	**481** (383-614)	**747** (574-966)	1077
	09-10	**48.9** (44.5-53.7)	**45.9** (39.5-51.9)	**184** (154-215)	**468** (388-560)	**734** (631-924)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Methyl paraben (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**46.0** (41.3-51.3)	**47.9** (36.9-61.7)	**203** (179-228)	**494** (399-571)	**797** (632-993)	2487
Age group							
6-11 years	11-12	**26.4** (22.8-30.7)	**19.4** (14.6-23.8)	**69.9** (53.0-113)	**282** (182-458)	**644** (354-1220)	395
12-19 years	11-12	**25.7** (19.3-34.2)	**17.1** (11.8-33.4)	**100** (53.2-175)	**335** (213-545)	**609** (450-773)	388
20 years and older	11-12	**53.4** (47.7-59.8)	**64.9** (53.2-75.2)	**228** (199-250)	**523** (429-623)	**815** (669-1110)	1704
Gender							
Males	11-12	**21.8** (18.3-26.0)	**16.2** (12.5-21.1)	**74.1** (57.1-93.3)	**250** (181-321)	**450** (327-560)	1258
Females	11-12	**94.5** (83.1-108)	**119** (101-136)	**309** (259-356)	**682** (571-805)	**1090** (797-1300)	1229
Race/ethnicity							
Mexican Americans	11-12	**49.5** (37.0-66.2)	**50.5** (32.5-79.7)	**200** (133-298)	**496** (316-982)	**1090** (484-2160)	316
Non-Hispanic blacks	11-12	**96.1** (79.4-116)	**117** (88.0-157)	**341** (274-382)	**696** (626-842)	**1090** (879-1190)	665
Non-Hispanic whites	11-12	**37.8** (33.1-43.2)	**33.4** (25.7-47.6)	**177** (141-208)	**425** (321-556)	**719** (544-833)	811
All Hispanics	11-12	**56.1** (46.3-68.0)	**57.1** (47.2-75.2)	**217** (160-332)	**577** (456-813)	**1090** (662-1490)	571
Asians	11-12	**48.3** (39.5-59.2)	**54.9** (31.6-79.8)	**198** (167-238)	**473** (344-600)	**840** (528-1170)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary *n*-Propyl paraben (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**7.91** (6.41-9.77)	**8.70** (5.90-12.4)	**48.9** (36.6-64.8)	**160** (129-200)	**299** (237-354)	2548
	07-08	**7.59** (6.22-9.26)	**7.60** (5.70-10.6)	**44.1** (34.1-55.6)	**144** (115-196)	**268** (231-290)	2604
	09-10	**6.97** (5.96-8.16)	**6.40** (5.10-8.00)	**44.3** (38.6-50.3)	**153** (133-183)	**297** (233-334)	2749
Age group							
6-11 years	05-06	**3.41** (2.43-4.77)	**2.50** (1.60-4.30)	**11.1** (7.10-21.0)	**47.5** (30.0-91.9)	**125** (55.8-383)	356
	07-08	**3.61** (2.39-5.44)	**3.50** (1.90-6.00)	**13.7** (7.60-22.8)	**49.1** (21.7-99.6)	**99.6** (80.4-120)	389
	09-10	**3.28** (2.58-4.17)	**2.70** (2.00-4.00)	**10.2** (7.00-14.0)	**42.9** (28.2-61.6)	**114** (56.8-239)	415
12-19 years	05-06	**8.16** (5.70-11.7)	**8.40** (5.00-13.9)	**46.4** (24.1-68.5)	**165** (96.7-222)	**310** (201-361)	702
	07-08	**8.85** (6.73-11.6)	**7.90** (5.30-12.0)	**49.2** (31.1-62.2)	**193** (100-234)	**271** (195-314)	401
	09-10	**7.01** (5.13-9.58)	**7.90** (4.40-11.0)	**39.7** (24.8-57.8)	**153** (78.1-299)	**367** (136-694)	420
20 years and older	05-06	**8.67** (6.83-11.0)	**11.2** (7.70-14.4)	**55.6** (41.2-75.6)	**172** (130-233)	**302** (237-367)	1490
	07-08	**8.04** (6.56-9.84)	**8.40** (6.10-11.9)	**48.8** (38.3-61.1)	**152** (118-202)	**272** (232-312)	1814
	09-10	**7.58** (6.28-9.15)	**7.50** (5.30-9.90)	**48.9** (42.6-58.0)	**166** (139-199)	**298** (251-334)	1914
Gender							
Males	05-06	**2.96** (2.33-3.77)	**2.30** (1.60-3.10)	**13.8** (9.00-18.0)	**51.7** (39.7-70.9)	**125** (77.2-185)	1270
	07-08	**3.02** (2.47-3.71)	**2.30** (1.70-3.30)	**12.6** (8.40-17.4)	**56.4** (38.9-89.5)	**140** (98.1-209)	1294
	09-10	**2.77** (2.26-3.40)	**2.00** (1.40-2.60)	**11.4** (7.70-15.4)	**57.3** (44.6-67.8)	**134** (86.1-184)	1399
Females	05-06	**20.4** (16.0-25.9)	**29.1** (21.6-37.5)	**93.0** (75.7-129)	**254** (193-318)	**357** (318-395)	1278
	07-08	**18.4** (15.7-21.5)	**23.3** (20.5-26.1)	**76.3** (62.9-100)	**210** (164-269)	**312** (271-363)	1310
	09-10	**16.9** (14.6-19.4)	**20.2** (17.0-25.9)	**83.3** (70.0-92.4)	**227** (171-295)	**361** (297-502)	1350
Race/ethnicity							
Mexican Americans	05-06	**10.6** (8.08-13.8)	**12.1** (7.00-17.5)	**65.9** (43.5-93.3)	**247** (174-293)	**389** (293-453)	637
	07-08	**7.82** (5.98-10.2)	**7.00** (4.20-12.9)	**52.1** (36.9-64.1)	**146** (105-201)	**217** (161-401)	531
	09-10	**8.94** (7.25-11.0)	**8.70** (5.70-13.3)	**58.9** (45.7-68.5)	**182** (117-299)	**451** (269-911)	566
Non-Hispanic blacks	05-06	**26.8** (21.5-33.3)	**34.7** (28.3-44.2)	**125** (89.5-165)	**331** (236-411)	**531** (367-730)	678
	07-08	**21.3** (18.4-24.7)	**28.6** (21.8-34.8)	**85.4** (70.8-96.9)	**222** (176-282)	**410** (277-506)	597
	09-10	**26.1** (21.8-31.3)	**29.9** (23.4-39.5)	**129** (87.4-167)	**322** (229-503)	**572** (369-654)	516
Non-Hispanic whites	05-06	**6.21** (5.02-7.68)	**6.00** (4.60-9.10)	**35.7** (28.4-49.6)	**130** (92.1-157)	**229** (156-318)	1038
	07-08	**6.49** (5.05-8.33)	**6.10** (4.50-9.20)	**36.8** (26.9-47.5)	**129** (91.3-196)	**251** (190-290)	1077
	09-10	**5.34** (4.55-6.27)	**4.40** (3.60-5.70)	**35.6** (26.1-44.3)	**128** (92.4-141)	**235** (170-300)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.2, 0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary *n*-Propyl paraben (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**5.39** (4.69-6.19)	**4.70** (3.80-5.90)	**28.5** (24.5-34.1)	**126** (94.0-142)	**200** (163-278)	2489
Age group							
6-11 years	11-12	**2.20** (1.81-2.68)	**1.40** (1.20-1.80)	**6.40** (4.80-11.8)	**28.1** (17.9-53.4)	**77.7** (41.3-185)	396
12-19 years	11-12	**3.69** (2.77-4.92)	**2.80** (1.80-4.20)	**14.7** (9.50-23.4)	**81.8** (51.5-151)	**208** (122-357)	388
20 years and older	11-12	**6.29** (5.45-7.25)	**6.20** (4.80-8.50)	**35.4** (29.2-43.2)	**135** (98.1-151)	**213** (163-323)	1705
Gender							
Males	11-12	**2.44** (1.99-2.98)	**1.70** (1.40-2.10)	**8.90** (6.70-12.0)	**46.5** (28.0-80.6)	**137** (65.8-258)	1259
Females	11-12	**11.6** (10.0-13.4)	**13.8** (12.4-16.3)	**54.7** (48.6-67.2)	**151** (141-175)	**252** (183-323)	1230
Race/ethnicity							
Mexican Americans	11-12	**6.15** (3.98-9.52)	**6.50** (2.60-11.1)	**30.0** (22.7-57.5)	**181** (70.4-312)	**312** (146-1060)	316
Non-Hispanic blacks	11-12	**16.4** (14.1-19.1)	**18.0** (13.4-23.1)	**61.1** (49.9-82.9)	**183** (147-225)	**340** (221-477)	665
Non-Hispanic whites	11-12	**4.14** (3.57-4.79)	**3.30** (2.50-4.20)	**21.0** (15.3-30.8)	**94.6** (70.3-135)	**163** (137-202)	813
All Hispanics	11-12	**6.87** (5.42-8.71)	**6.70** (3.80-9.30)	**33.6** (26.1-50.4)	**181** (95.3-273)	**333** (236-556)	571
Asians	11-12	**5.07** (4.06-6.34)	**5.50** (3.40-7.70)	**27.0** (22.3-37.2)	**95.8** (63.6-143)	**169** (123-292)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary *n*-Propyl paraben (creatinine corrected) (2005 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**7.71** (6.40-9.30)	**8.27** (5.87-11.3)	**52.9** (41.6-66.1)	**161** (140-178)	**263** (226-288)	2548
	07-08	**7.65** (6.22-9.40)	**8.00** (5.34-11.6)	**50.0** (39.5-59.8)	**138** (115-168)	**235** (199-293)	2604
	09-10	**7.28** (6.30-8.41)	**6.67** (5.35-8.50)	**45.1** (37.3-53.5)	**155** (128-187)	**253** (223-300)	2749
Age group							
6-11 years	05-06	**3.75** (2.67-5.26)	**2.70** (1.89-4.43)	**11.5** (8.07-16.0)	**52.1** (22.9-100)	**121** (55.5-352)	356
	07-08	**4.45** (3.03-6.53)	**3.50** (1.79-6.85)	**16.5** (8.82-28.8)	**59.1** (28.6-94.4)	**98.4** (65.0-139)	389
	09-10	**4.27** (3.34-5.47)	**3.33** (2.41-4.62)	**12.0** (8.52-16.6)	**46.1** (27.5-108)	**143** (72.5-243)	415
12-19 years	05-06	**6.08** (4.36-8.49)	**5.44** (3.03-10.5)	**33.0** (20.7-48.7)	**116** (81.9-161)	**175** (140-239)	702
	07-08	**6.88** (5.30-8.94)	**5.68** (3.51-9.90)	**33.2** (26.7-46.5)	**103** (87.2-112)	**132** (105-235)	401
	09-10	**5.64** (4.17-7.62)	**5.19** (3.53-9.03)	**32.9** (20.4-42.4)	**107** (57.6-217)	**218** (101-397)	420
20 years and older	05-06	**8.70** (7.08-10.7)	**10.8** (7.39-15.2)	**63.2** (49.7-80.5)	**178** (152-198)	**270** (236-293)	1490
	07-08	**8.26** (6.70-10.2)	**9.91** (6.15-12.6)	**57.9** (47.3-69.1)	**161** (127-199)	**273** (212-312)	1814
	09-10	**8.03** (6.74-9.56)	**8.27** (6.10-10.8)	**55.5** (43.5-66.0)	**164** (136-200)	**270** (232-314)	1914
Gender							
Males	05-06	**2.38** (1.92-2.95)	**1.84** (1.42-2.46)	**9.52** (6.79-12.8)	**40.5** (31.1-51.5)	**90.8** (56.8-125)	1270
	07-08	**2.55** (2.06-3.15)	**1.74** (1.40-2.53)	**10.7** (5.99-15.4)	**44.7** (29.0-66.1)	**112** (77.4-144)	1294
	09-10	**2.48** (2.05-3.00)	**1.71** (1.35-2.25)	**8.85** (6.12-14.2)	**40.3** (33.8-57.6)	**105** (74.5-143)	1399
Females	05-06	**23.9** (19.9-28.8)	**34.9** (26.9-46.6)	**114** (101-132)	**235** (193-263)	**306** (277-342)	1278
	07-08	**22.0** (18.7-25.8)	**30.4** (25.2-36.3)	**93.3** (80.8-110)	**199** (161-245)	**302** (271-370)	1310
	09-10	**20.4** (17.8-23.3)	**25.7** (21.8-30.7)	**97.1** (81.8-115)	**223** (191-248)	**334** (295-389)	1350
Race/ethnicity							
Mexican Americans	05-06	**9.49** (7.29-12.4)	**11.0** (6.69-16.4)	**55.2** (44.9-79.6)	**186** (147-271)	**329** (194-441)	637
	07-08	**7.63** (5.72-10.2)	**6.60** (4.10-13.4)	**47.9** (39.5-66.7)	**162** (123-187)	**273** (187-304)	531
	09-10	**8.87** (7.42-10.6)	**7.97** (5.87-12.8)	**54.7** (42.3-73.8)	**184** (140-269)	**325** (221-575)	566
Non-Hispanic blacks	05-06	**18.8** (15.2-23.3)	**23.6** (19.0-30.8)	**83.7** (61.8-105)	**217** (169-255)	**318** (242-377)	678
	07-08	**16.6** (14.1-19.5)	**22.9** (18.0-27.2)	**64.2** (51.4-73.3)	**141** (117-172)	**254** (169-311)	597
	09-10	**18.9** (15.2-23.5)	**21.1** (18.2-27.7)	**80.9** (59.5-109)	**200** (151-249)	**301** (223-376)	516
Non-Hispanic whites	05-06	**6.53** (5.32-8.02)	**6.45** (3.96-9.11)	**47.4** (32.6-65.3)	**146** (119-184)	**241** (184-278)	1038
	07-08	**6.77** (5.14-8.93)	**5.81** (3.94-10.5)	**45.4** (32.2-61.4)	**132** (105-172)	**215** (169-295)	1077
	09-10	**6.00** (5.19-6.94)	**5.12** (4.05-6.25)	**37.8** (32.1-49.2)	**148** (115-183)	**242** (215-272)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary *n*-Propyl paraben (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**6.16** (5.42-6.99)	**5.35** (3.97-7.07)	**36.7** (31.1-42.2)	**129** (105-162)	**215** (183-321)	2487
Age group							
6-11 years	11-12	**3.18** (2.62-3.87)	**2.09** (1.58-3.16)	**9.11** (5.71-12.2)	**37.0** (19.8-53.1)	**116** (43.6-202)	395
12-19 years	11-12	**3.60** (2.75-4.70)	**2.46** (1.93-3.52)	**14.9** (9.36-24.9)	**69.8** (32.3-130)	**133** (75.6-202)	388
20 years and older	11-12	**7.17** (6.22-8.27)	**7.28** (5.23-9.77)	**45.7** (38.1-51.6)	**152** (117-183)	**258** (190-365)	1704
Gender							
Males	11-12	**2.29** (1.90-2.75)	**1.38** (1.21-1.67)	**7.39** (6.02-9.39)	**46.2** (28.5-72.7)	**94.5** (57.3-190)	1258
Females	11-12	**16.0** (13.9-18.4)	**20.9** (16.7-25.7)	**74.7** (62.3-88.7)	**185** (164-213)	**345** (239-426)	1229
Race/ethnicity							
Mexican Americans	11-12	**6.93** (4.57-10.5)	**7.19** (3.71-10.9)	**40.5** (24.4-75.9)	**159** (90.0-236)	**315** (159-536)	316
Non-Hispanic blacks	11-12	**12.8** (11.3-14.4)	**13.9** (11.3-18.0)	**54.5** (43.4-65.7)	**140** (105-185)	**207** (166-333)	665
Non-Hispanic whites	11-12	**5.06** (4.35-5.88)	**3.20** (2.50-5.06)	**31.1** (27.3-37.1)	**120** (88.2-164)	**213** (164-345)	811
All Hispanics	11-12	**7.70** (5.99-9.90)	**7.47** (5.00-10.1)	**51.5** (35.2-72.9)	**162** (119-196)	**318** (185-473)	571
Asians	11-12	**6.80** (5.47-8.45)	**6.90** (3.41-13.7)	**46.5** (35.6-59.5)	**136** (94.4-188)	**222** (168-304)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Nitrate (2001 - 2010)

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**48.2** (46.2-50.3)	**49.0** (46.0-52.0)	**78.0** (73.0-83.0)	**100** (100-130)	**140** (130-150)	1617
	05-06	**42.7** (39.6-46.1)	**47.8** (44.4-51.2)	**74.6** (69.8-79.4)	**108** (101-114)	**133** (125-144)	7697
	07-08	**46.3** (44.6-48.1)	**50.3** (48.4-52.0)	**76.0** (72.7-79.1)	**110** (104-116)	**138** (132-146)	7629
	09-10	**40.7** (38.9-42.7)	**43.3** (41.1-45.8)	**68.7** (65.5-72.5)	**98.5** (93.4-102)	**126** (114-137)	2844
Age group							
6-11 years	01-02	**62.2** (53.8-71.8)	**68.0** (58.0-79.0)	**94.0** (84.0-100)	**130** (100-160)	**150** (120-380)	374
	05-06	**51.2** (47.4-55.4)	**54.7** (51.9-58.2)	**79.2** (72.8-87.2)	**113** (101-128)	**141** (120-158)	1054
	07-08	**55.2** (51.7-58.9)	**60.2** (56.1-64.3)	**84.5** (80.1-92.5)	**117** (107-135)	**149** (132-189)	1143
	09-10	**46.8** (43.2-50.6)	**50.3** (45.5-58.2)	**73.2** (70.2-79.1)	**98.7** (86.7-112)	**119** (98.0-186)	377
12-19 years	01-02	**57.4** (53.5-61.6)	**66.0** (60.0-69.0)	**91.0** (86.0-95.0)	**120** (100-130)	**150** (130-160)	827
	05-06	**52.5** (48.5-56.8)	**57.5** (52.3-62.6)	**84.2** (79.9-88.4)	**119** (111-124)	**144** (129-153)	2106
	07-08	**55.5** (51.5-59.7)	**56.8** (51.9-61.5)	**84.1** (76.2-94.5)	**119** (107-133)	**144** (133-162)	1135
	09-10	**44.6** (41.0-48.4)	**48.0** (43.3-54.9)	**75.2** (70.0-79.4)	**106** (91.6-119)	**133** (106-163)	452
20 years and older	01-02	**45.4** (43.3-47.5)	**49.0** (46.0-52.0)	**78.0** (73.0-83.0)	**100** (100-130)	**140** (130-150)	1617
	05-06	**40.5** (37.4-43.9)	**45.0** (41.3-48.3)	**71.7** (67.1-77.4)	**105** (98.0-113)	**129** (122-142)	4537
	07-08	**44.2** (42.5-45.9)	**48.1** (46.0-49.7)	**73.2** (70.1-76.5)	**107** (101-113)	**135** (128-146)	5351
	09-10	**39.6** (37.4-41.9)	**42.3** (39.4-44.8)	**66.4** (62.3-71.9)	**97.2** (91.9-102)	**124** (113-144)	2015
Gender							
Males	01-02	**57.5** (54.6-60.6)	**63.0** (59.0-67.0)	**89.0** (83.0-94.0)	**130** (100-140)	**150** (140-170)	1335
	05-06	**48.4** (44.6-52.6)	**52.7** (48.3-57.8)	**79.4** (72.8-86.5)	**110** (103-121)	**136** (123-152)	3765
	07-08	**51.9** (49.9-54.1)	**56.1** (53.8-58.0)	**79.5** (75.7-83.5)	**112** (105-119)	**137** (131-149)	3839
	09-10	**44.9** (41.8-48.2)	**46.0** (43.1-49.7)	**73.3** (67.9-77.1)	**105** (95.6-112)	**133** (117-159)	1401
Females	01-02	**40.7** (38.4-43.2)	**43.0** (41.0-48.0)	**72.0** (68.0-76.0)	**100** (98.0-120)	**130** (120-150)	1483
	05-06	**37.9** (35.1-40.8)	**42.0** (38.2-46.0)	**69.2** (65.5-73.4)	**104** (96.6-110)	**130** (124-140)	3932
	07-08	**41.4** (39.3-43.7)	**43.9** (41.5-46.3)	**71.3** (67.5-74.8)	**108** (99.8-115)	**138** (132-149)	3790
	09-10	**37.1** (34.9-39.5)	**40.3** (36.4-43.9)	**65.9** (62.0-69.8)	**92.2** (88.4-98.5)	**117** (101-130)	1443
Race/ethnicity							
Mexican Americans	01-02	**53.2** (48.7-58.2)	**59.0** (52.0-66.0)	**84.0** (79.0-91.0)	**120** (100-150)	**160** (130-180)	707
	05-06	**47.8** (44.7-51.2)	**52.4** (49.9-56.2)	**77.9** (75.1-83.1)	**113** (104-120)	**148** (133-156)	1972
	07-08	**48.7** (45.0-52.6)	**51.9** (47.4-56.7)	**75.6** (69.7-81.3)	**111** (100-122)	**148** (127-164)	1505
	09-10	**41.3** (39.3-43.5)	**43.5** (41.2-46.4)	**66.4** (61.0-73.9)	**92.6** (86.5-99.7)	**111** (94.4-132)	611
Non-Hispanic blacks	01-02	**53.8** (47.8-60.5)	**58.0** (51.0-64.0)	**84.0** (77.0-93.0)	**120** (100-130)	**140** (130-170)	680
	05-06	**45.9** (42.1-50.0)	**50.4** (46.6-54.9)	**75.0** (68.8-80.8)	**101** (95.3-110)	**127** (114-148)	2078
	07-08	**47.5** (45.0-50.3)	**50.3** (48.6-52.5)	**74.7** (71.9-77.3)	**105** (97.1-116)	**134** (125-150)	1707
	09-10	**39.0** (36.5-41.7)	**44.1** (41.6-46.3)	**65.4** (61.5-69.6)	**94.2** (86.6-101)	**121** (101-141)	544
Non-Hispanic whites	01-02	**46.3** (44.1-48.6)	**51.0** (47.0-53.0)	**81.0** (78.0-85.0)	**120** (100-130)	**140** (130-150)	1228
	05-06	**41.2** (37.6-45.2)	**46.2** (41.3-50.6)	**73.3** (67.3-80.1)	**107** (98.2-115)	**129** (122-142)	3056
	07-08	**45.0** (42.7-47.5)	**49.2** (46.1-52.6)	**75.5** (70.5-80.0)	**108** (101-116)	**134** (128-140)	3190
	09-10	**39.8** (37.2-42.6)	**42.1** (39.1-45.2)	**68.4** (63.0-73.5)	**95.6** (89.8-100)	**119** (106-131)	1215

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 05-06, 07-08, and 09-10 are 0.7, 0.7, 0.7, and 0.7 respectively.

Urinary Nitrate (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**41.8** (39.7-44.1)	**44.5** (42.3-47.2)	**71.5** (68.1-76.4)	**108** (99.3-116)	**133** (119-156)	2467
Age group							
6-11 years	11-12	**47.4** (43.3-52.0)	**54.1** (49.2-61.3)	**78.6** (74.3-84.0)	**99.8** (93.2-113)	**121** (104-141)	394
12-19 years	11-12	**43.3** (37.4-50.1)	**50.4** (39.8-58.3)	**71.5** (66.5-78.0)	**107** (91.9-121)	**135** (108-183)	384
20 years and older	11-12	**41.0** (38.7-43.5)	**43.4** (40.8-46.2)	**70.1** (66.1-75.7)	**110** (98.7-117)	**135** (117-164)	1689
Gender							
Males	11-12	**46.9** (43.3-50.8)	**48.4** (43.6-53.0)	**76.2** (69.9-81.7)	**114** (101-124)	**150** (116-175)	1251
Females	11-12	**37.4** (34.4-40.7)	**41.2** (36.4-46.0)	**67.9** (60.6-73.7)	**101** (89.8-114)	**120** (113-145)	1216
Race/ethnicity							
Mexican Americans	11-12	**41.1** (36.9-45.8)	**45.9** (40.4-51.3)	**65.9** (61.8-70.9)	**89.8** (78.4-108)	**112** (89.8-159)	313
Non-Hispanic blacks	11-12	**44.9** (41.5-48.6)	**47.6** (41.6-52.3)	**73.8** (67.8-79.8)	**107** (97.1-117)	**139** (116-150)	663
Non-Hispanic whites	11-12	**41.0** (38.0-44.1)	**43.6** (39.6-47.9)	**71.9** (66.7-78.0)	**110** (96.1-117)	**132** (115-169)	810
All Hispanics	11-12	**41.0** (36.7-45.7)	**44.4** (40.2-48.9)	**67.2** (60.9-73.9)	**95.3** (82.9-113)	**120** (97.0-159)	566
Asians	11-12	**50.2** (43.7-57.6)	**50.8** (45.8-57.5)	**84.0** (72.1-91.9)	**146** (121-171)	**238** (142-380)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.

Urinary Nitrate (creatinine corrected) (2001 - 2010)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**49.8** (47.7-51.9)	**46.9** (44.2-49.6)	**63.8** (61.2-67.7)	**90.9** (84.3-98.8)	**120** (111-128)	1616
	05-06	**42.6** (40.2-45.1)	**42.4** (40.1-44.7)	**59.7** (55.8-64.1)	**85.5** (81.3-91.3)	**113** (106-118)	7697
	07-08	**47.7** (45.9-49.7)	**46.0** (44.0-48.3)	**66.5** (62.4-70.5)	**98.0** (92.3-102)	**127** (119-135)	7628
	09-10	**43.7** (42.1-45.3)	**42.3** (41.0-43.7)	**60.2** (57.6-63.0)	**88.5** (83.3-96.1)	**115** (104-127)	2843
Age group							
6-11 years	01-02	**72.0** (66.1-78.4)	**66.0** (62.6-70.4)	**87.0** (80.2-97.7)	**129** (96.5-144)	**144** (130-235)	374
	05-06	**60.8** (57.4-64.5)	**57.3** (53.6-60.6)	**76.5** (70.9-82.1)	**109** (95.0-123)	**134** (121-164)	1054
	07-08	**70.2** (65.7-74.9)	**65.9** (62.4-69.5)	**89.0** (83.2-96.5)	**128** (112-152)	**173** (140-216)	1143
	09-10	**64.2** (58.8-70.0)	**60.2** (56.3-63.3)	**80.7** (68.9-96.1)	**107** (96.1-124)	**127** (105-202)	376
12-19 years	01-02	**44.8** (43.4-46.2)	**43.8** (42.6-45.0)	**56.2** (52.2-59.7)	**73.2** (65.2-85.1)	**93.4** (79.0-104)	826
	05-06	**39.8** (37.8-41.9)	**38.1** (36.3-40.3)	**51.8** (47.7-56.0)	**70.6** (63.1-78.8)	**88.9** (79.4-103)	2106
	07-08	**43.4** (41.3-45.5)	**40.5** (38.6-43.5)	**56.0** (52.7-59.2)	**76.6** (69.0-86.2)	**98.0** (85.4-121)	1134
	09-10	**41.7** (39.3-44.4)	**39.7** (38.3-41.7)	**54.0** (48.4-57.4)	**73.4** (61.0-86.1)	**88.5** (71.0-117)	452
20 years and older	01-02	**48.3** (45.9-50.9)	**46.9** (44.2-49.6)	**63.8** (61.2-67.7)	**90.9** (84.3-98.8)	**120** (111-128)	1616
	05-06	**41.4** (38.9-43.9)	**41.0** (38.8-43.7)	**58.6** (54.8-63.1)	**85.3** (80.2-91.0)	**111** (105-116)	4537
	07-08	**46.5** (44.6-48.4)	**44.7** (42.5-47.0)	**65.0** (60.7-69.2)	**96.1** (90.0-102)	**125** (117-132)	5351
	09-10	**42.2** (40.3-44.2)	**41.0** (39.6-42.5)	**58.6** (55.4-62.2)	**87.7** (81.0-98.5)	**116** (103-133)	2015
Gender							
Males	01-02	**47.6** (44.7-50.7)	**46.1** (43.4-48.7)	**61.3** (58.0-64.5)	**86.7** (77.1-97.3)	**114** (97.3-125)	1335
	05-06	**40.1** (37.5-42.9)	**39.5** (36.7-42.8)	**55.3** (51.6-59.5)	**77.2** (70.7-83.0)	**95.9** (89.6-102)	3765
	07-08	**44.6** (42.8-46.6)	**42.8** (40.7-45.1)	**60.6** (58.1-64.4)	**85.6** (81.1-91.3)	**111** (101-121)	3839
	09-10	**41.0** (38.9-43.1)	**39.1** (37.6-40.6)	**54.6** (52.2-58.1)	**83.3** (74.6-90.0)	**103** (96.1-122)	1400
Females	01-02	**51.9** (49.9-54.1)	**51.2** (48.4-53.0)	**69.1** (66.7-71.2)	**100** (91.7-111)	**129** (118-140)	1481
	05-06	**45.1** (42.8-47.6)	**45.0** (42.4-47.4)	**64.4** (60.0-69.6)	**96.8** (87.8-105)	**128** (117-134)	3932
	07-08	**51.0** (48.9-53.2)	**50.0** (47.5-52.7)	**72.3** (67.8-76.8)	**107** (101-116)	**146** (129-163)	3789
	09-10	**46.5** (44.4-48.7)	**46.5** (44.8-48.4)	**64.2** (60.5-69.4)	**96.6** (83.3-106)	**121** (106-152)	1443
Race/ethnicity							
Mexican Americans	01-02	**50.9** (45.7-56.8)	**48.1** (44.9-51.4)	**67.4** (60.3-77.6)	**97.3** (85.7-117)	**135** (100-161)	707
	05-06	**44.6** (42.6-46.7)	**44.0** (42.2-45.3)	**60.4** (58.1-62.9)	**89.9** (82.0-95.4)	**120** (111-128)	1972
	07-08	**48.7** (45.1-52.7)	**47.0** (43.5-50.5)	**64.8** (59.7-69.9)	**93.5** (88.9-101)	**128** (108-156)	1505
	09-10	**43.4** (40.5-46.5)	**42.2** (39.7-45.9)	**58.2** (54.7-61.3)	**86.2** (77.1-92.5)	**104** (90.8-122)	611
Non-Hispanic blacks	01-02	**38.7** (36.3-41.3)	**38.0** (34.6-41.3)	**53.5** (50.3-57.4)	**70.3** (64.9-79.3)	**91.7** (78.9-100)	679
	05-06	**32.9** (30.9-35.0)	**31.9** (29.8-34.1)	**45.4** (41.5-49.6)	**64.0** (60.1-68.0)	**81.2** (75.3-89.6)	2078
	07-08	**35.9** (34.2-37.7)	**34.8** (33.3-36.6)	**49.0** (44.8-53.6)	**69.1** (63.5-77.4)	**87.8** (78.1-97.4)	1706
	09-10	**31.4** (28.9-34.0)	**32.2** (29.7-34.5)	**43.3** (40.8-47.3)	**59.9** (54.8-69.7)	**77.1** (62.2-98.3)	543
Non-Hispanic whites	01-02	**51.4** (49.4-53.4)	**49.1** (46.9-51.5)	**66.9** (64.2-69.4)	**95.2** (87.7-100)	**124** (115-132)	1227
	05-06	**43.7** (40.8-46.8)	**43.9** (40.8-46.8)	**61.4** (56.5-66.2)	**85.5** (80.6-91.9)	**110** (102-116)	3056
	07-08	**49.0** (46.7-51.4)	**47.4** (44.9-50.5)	**68.2** (63.3-73.1)	**98.3** (91.2-105)	**126** (118-135)	3190
	09-10	**44.7** (42.7-46.9)	**43.8** (41.5-46.1)	**62.0** (58.6-64.7)	**87.7** (83.3-96.1)	**106** (103-117)	1215

Urinary Nitrate (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**47.8** (45.3-50.4)	**46.0** (43.7-49.2)	**67.4** (62.6-71.5)	**103** (88.7-117)	**137** (117-153)	2465
Age group							
6-11 years	11-12	**68.0** (63.3-73.1)	**66.4** (60.9-68.7)	**87.3** (81.2-95.6)	**122** (110-132)	**144** (124-156)	393
12-19 years	11-12	**42.2** (39.6-44.9)	**41.5** (38.7-43.8)	**54.0** (51.2-57.7)	**69.1** (63.6-77.1)	**86.9** (69.1-104)	384
20 years and older	11-12	**46.8** (44.0-49.8)	**44.9** (41.7-47.9)	**66.8** (60.5-73.0)	**105** (87.4-122)	**142** (116-165)	1688
Gender							
Males	11-12	**44.1** (41.8-46.6)	**43.8** (40.8-45.9)	**59.8** (57.0-62.4)	**87.1** (76.9-98.4)	**109** (98.4-120)	1250
Females	11-12	**51.6** (47.9-55.5)	**50.0** (45.8-54.0)	**76.5** (68.9-85.1)	**120** (98.1-143)	**151** (132-170)	1215
Race/ethnicity							
Mexican Americans	11-12	**46.4** (41.0-52.6)	**43.6** (38.9-49.7)	**62.4** (52.7-78.0)	**86.4** (72.1-124)	**110** (84.0-203)	313
Non-Hispanic blacks	11-12	**35.0** (33.2-36.9)	**34.3** (32.1-36.3)	**47.5** (44.0-51.3)	**69.2** (62.2-78.1)	**89.3** (77.1-102)	663
Non-Hispanic whites	11-12	**50.1** (47.2-53.2)	**49.0** (45.7-52.3)	**68.9** (63.8-79.4)	**107** (91.1-129)	**144** (121-154)	808
All Hispanics	11-12	**45.8** (42.4-49.5)	**44.1** (41.7-46.2)	**61.5** (55.4-69.3)	**85.2** (78.5-95.6)	**115** (86.4-159)	566
Asians	11-12	**67.2** (61.9-72.9)	**62.9** (56.3-68.8)	**106** (93.3-118)	**178** (153-216)	**247** (203-318)	341

Urinary Perchlorate (2001 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**3.72** (3.46-4.01)	**3.70** (3.40-3.90)	**6.20** (5.60-6.90)	**10.0** (8.90-12.0)	**14.0** (12.0-18.0)	1618
	03-04	**3.39** (3.08-3.73)	**3.50** (3.00-4.00)	**5.80** (5.20-6.70)	**10.0** (8.80-12.0)	**14.0** (13.0-16.0)	2522
	05-06	**3.47** (3.20-3.76)	**3.62** (3.35-3.98)	**6.10** (5.67-6.52)	**9.76** (9.19-10.5)	**13.4** (12.4-14.6)	7697
	07-08	**3.88** (3.60-4.18)	**3.96** (3.59-4.30)	**7.10** (6.50-7.74)	**12.0** (11.2-13.0)	**17.3** (16.1-18.8)	7629
	09-10	**3.38** (3.19-3.58)	**3.44** (3.17-3.61)	**5.95** (5.66-6.35)	**10.1** (9.20-10.6)	**13.8** (12.2-15.4)	2844
Age group							
6-11 years	01-02	**5.19** (4.44-6.05)	**5.50** (4.60-6.70)	**8.50** (7.20-10.0)	**13.0** (9.80-20.0)	**20.0** (13.0-24.0)	374
	03-04	**4.54** (3.85-5.36)	**4.80** (4.20-5.50)	**8.30** (6.00-10.0)	**14.0** (9.20-17.0)	**17.0** (12.0-30.0)	314
	05-06	**4.64** (4.15-5.18)	**4.81** (4.26-5.38)	**7.67** (6.71-8.60)	**11.6** (10.0-12.7)	**14.1** (12.4-16.3)	1054
	07-08	**4.88** (4.31-5.53)	**4.86** (4.22-5.93)	**9.11** (7.84-10.3)	**14.4** (12.1-16.9)	**18.9** (16.1-23.2)	1143
	09-10	**4.47** (3.88-5.15)	**5.03** (3.84-5.98)	**7.98** (6.86-9.68)	**12.2** (10.1-15.7)	**16.2** (11.2-24.5)	377
12-19 years	01-02	**4.00** (3.62-4.42)	**4.60** (4.00-5.00)	**7.10** (6.60-7.70)	**10.0** (9.70-12.0)	**14.0** (12.0-18.0)	828
	03-04	**3.81** (3.35-4.33)	**4.00** (3.40-4.60)	**6.70** (5.80-7.40)	**10.0** (8.20-13.0)	**14.0** (10.0-19.0)	721
	05-06	**4.14** (3.77-4.53)	**4.25** (3.94-4.65)	**7.00** (6.41-7.69)	**10.9** (9.71-12.4)	**15.6** (12.4-17.9)	2106
	07-08	**4.50** (4.06-4.97)	**4.73** (4.39-5.05)	**7.93** (6.89-8.89)	**13.0** (11.1-15.4)	**17.7** (15.8-20.2)	1135
	09-10	**3.36** (2.89-3.91)	**3.33** (2.86-3.98)	**6.21** (5.22-7.82)	**10.7** (8.58-13.2)	**15.1** (12.0-19.4)	452
20 years and older	01-02	**3.53** (3.24-3.84)	**3.70** (3.40-3.90)	**6.20** (5.60-6.90)	**10.0** (8.90-12.0)	**14.0** (12.0-18.0)	1618
	03-04	**3.21** (2.89-3.56)	**3.40** (2.80-3.80)	**5.50** (4.90-6.40)	**9.50** (8.30-10.0)	**13.0** (12.0-15.0)	1487
	05-06	**3.27** (3.01-3.55)	**3.42** (3.14-3.72)	**5.75** (5.33-6.21)	**9.38** (8.73-9.86)	**13.1** (12.2-14.5)	4537
	07-08	**3.70** (3.43-3.99)	**3.69** (3.42-4.09)	**6.75** (6.09-7.38)	**11.6** (10.8-12.7)	**16.8** (15.4-18.7)	5351
	09-10	**3.29** (3.08-3.51)	**3.28** (3.00-3.59)	**5.68** (5.47-6.05)	**9.55** (8.72-10.3)	**13.3** (11.2-15.2)	2015
Gender							
Males	01-02	**4.41** (4.13-4.70)	**4.60** (4.40-4.80)	**7.40** (6.70-8.30)	**12.0** (10.0-13.0)	**15.0** (12.0-20.0)	1335
	03-04	**3.95** (3.56-4.37)	**4.10** (3.60-4.60)	**6.70** (5.90-7.90)	**12.0** (9.70-13.0)	**15.0** (14.0-18.0)	1229
	05-06	**3.93** (3.64-4.25)	**4.07** (3.77-4.38)	**6.50** (6.11-6.92)	**10.4** (9.65-11.6)	**14.7** (13.2-16.3)	3765
	07-08	**4.40** (4.13-4.70)	**4.42** (4.12-4.78)	**7.90** (7.16-8.46)	**13.3** (12.0-14.4)	**18.6** (17.0-19.7)	3839
	09-10	**3.66** (3.40-3.95)	**3.74** (3.36-4.00)	**6.21** (5.70-6.65)	**10.2** (9.10-11.2)	**14.6** (11.9-18.2)	1401
Females	01-02	**3.17** (2.89-3.48)	**3.30** (2.80-3.60)	**5.70** (5.20-6.30)	**9.70** (8.60-12.0)	**14.0** (12.0-18.0)	1485
	03-04	**2.93** (2.62-3.28)	**3.00** (2.60-3.40)	**5.10** (4.60-5.80)	**8.60** (7.20-10.0)	**12.0** (9.20-16.0)	1293
	05-06	**3.08** (2.80-3.38)	**3.24** (2.96-3.51)	**5.55** (5.14-6.07)	**9.20** (8.22-10.3)	**12.4** (11.3-14.2)	3932
	07-08	**3.42** (3.11-3.76)	**3.44** (3.10-3.79)	**6.41** (5.95-7.01)	**10.8** (10.0-12.0)	**16.0** (14.1-17.9)	3790
	09-10	**3.13** (2.93-3.34)	**3.11** (2.83-3.37)	**5.83** (5.36-6.28)	**9.73** (8.44-10.6)	**13.2** (11.0-15.4)	1443

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, &fyr4., 07-08, and 09-10 are 0.05, 0.05, &lod4., 0.05, and 0.05 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html

Urinary Perchlorate (2001 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**4.23** (3.65-4.90)	**4.60** (3.90-5.20)	**7.40** (6.10-8.80)	**13.0** (9.90-14.0)	**15.0** (13.0-19.0)	708
	03-04	**3.96** (3.63-4.32)	**4.20** (3.70-4.60)	**6.50** (5.60-7.90)	**12.0** (9.50-13.0)	**16.0** (13.0-18.0)	617
	05-06	**4.02** (3.77-4.28)	**4.16** (3.84-4.46)	**6.93** (6.62-7.26)	**11.3** (10.4-12.0)	**15.7** (14.6-16.8)	1972
	07-08	**4.20** (3.95-4.46)	**4.38** (4.08-4.65)	**7.32** (6.73-7.95)	**12.1** (10.9-14.0)	**16.7** (15.0-17.7)	1505
	09-10	**3.98** (3.51-4.51)	**3.99** (3.45-4.54)	**7.27** (6.06-8.20)	**11.3** (9.97-13.4)	**17.2** (12.0-24.5)	611
Non-Hispanic blacks	01-02	**3.69** (3.22-4.23)	**3.90** (3.30-4.30)	**6.20** (5.30-7.30)	**9.70** (8.20-13.0)	**16.0** (12.0-21.0)	681
	03-04	**3.38** (3.05-3.74)	**3.40** (3.00-3.70)	**5.70** (4.80-6.60)	**9.00** (7.90-12.0)	**14.0** (9.80-18.0)	652
	05-06	**3.48** (3.19-3.80)	**3.54** (3.24-3.94)	**5.95** (5.33-6.65)	**9.99** (9.02-11.0)	**14.4** (12.8-15.7)	2078
	07-08	**3.82** (3.37-4.33)	**3.82** (3.37-4.48)	**6.96** (6.18-7.97)	**12.0** (10.6-13.8)	**17.2** (14.3-20.6)	1707
	09-10	**2.98** (2.74-3.26)	**2.94** (2.64-3.27)	**5.31** (4.88-5.99)	**9.06** (7.90-10.2)	**12.7** (9.23-17.3)	544
Non-Hispanic whites	01-02	**3.70** (3.35-4.08)	**3.90** (3.60-4.30)	**6.60** (6.00-7.40)	**10.0** (9.20-12.0)	**15.0** (12.0-19.0)	1228
	03-04	**3.43** (3.04-3.86)	**3.50** (2.90-4.20)	**5.90** (5.10-7.10)	**9.90** (8.50-12.0)	**14.0** (12.0-16.0)	1092
	05-06	**3.42** (3.08-3.80)	**3.59** (3.23-4.04)	**6.05** (5.52-6.55)	**9.62** (8.90-10.5)	**13.2** (11.9-14.8)	3056
	07-08	**3.84** (3.52-4.18)	**3.93** (3.48-4.36)	**7.07** (6.37-7.77)	**11.7** (10.8-12.7)	**16.8** (15.3-18.4)	3190
	09-10	**3.40** (3.21-3.61)	**3.48** (3.17-3.68)	**5.94** (5.60-6.40)	**9.69** (8.78-10.3)	**13.6** (11.2-15.5)	1215

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, &fyr4., 07-08, and 09-10 are 0.05, 0.05, &lod4., 0.05, and 0.05 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html

Urinary Perchlorate (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**2.96** (2.79-3.14)	**3.01** (2.82-3.24)	**5.46** (5.11-5.71)	**9.11** (8.46-9.78)	**12.8** (11.4-14.2)	2467
Age group							
6-11 years	11-12	**3.89** (3.45-4.39)	**4.31** (3.67-4.86)	**6.41** (5.88-7.17)	**10.6** (8.97-12.8)	**14.9** (12.7-18.5)	394
12-19 years	11-12	**2.77** (2.33-3.30)	**2.82** (2.39-3.60)	**5.15** (4.28-5.71)	**7.54** (6.40-8.68)	**10.8** (7.54-13.3)	384
20 years and older	11-12	**2.90** (2.71-3.10)	**2.95** (2.75-3.14)	**5.30** (4.94-5.73)	**9.16** (8.46-10.3)	**12.8** (11.2-14.6)	1689
Gender							
Males	11-12	**3.32** (3.05-3.61)	**3.43** (3.22-3.67)	**5.79** (5.45-6.58)	**10.3** (8.70-10.8)	**13.3** (11.7-14.6)	1251
Females	11-12	**2.65** (2.44-2.87)	**2.64** (2.40-2.96)	**4.86** (4.20-5.52)	**8.21** (7.78-8.86)	**11.7** (10.6-13.2)	1216
Race/ethnicity							
Mexican Americans	11-12	**3.46** (2.97-4.02)	**3.47** (2.83-3.90)	**6.06** (4.99-7.38)	**10.5** (7.19-16.4)	**15.3** (10.1-24.2)	313
Non-Hispanic blacks	11-12	**2.92** (2.69-3.16)	**2.91** (2.64-3.27)	**5.48** (4.72-5.96)	**9.02** (8.11-10.8)	**12.2** (11.3-14.7)	663
Non-Hispanic whites	11-12	**2.93** (2.75-3.13)	**3.07** (2.81-3.31)	**5.44** (5.04-5.73)	**8.70** (8.05-10.4)	**12.7** (10.8-14.2)	810
All Hispanics	11-12	**3.15** (2.81-3.52)	**2.99** (2.52-3.50)	**5.49** (4.67-6.27)	**9.51** (7.38-11.6)	**13.2** (10.4-18.4)	566
Asians	11-12	**2.81** (2.44-3.24)	**2.82** (2.36-3.22)	**5.48** (4.82-6.39)	**9.48** (7.86-12.3)	**15.1** (10.3-23.6)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.05.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html

Urinary Perchlorate (creatinine corrected) (2001 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**3.74** (3.51-3.99)	**3.44** (3.18-3.79)	**5.70** (5.27-6.18)	**9.47** (7.88-10.8)	**12.9** (10.7-14.9)	1617
	03-04	**3.31** (3.04-3.59)	**3.18** (2.90-3.45)	**5.19** (4.80-5.55)	**8.86** (7.69-10.0)	**12.4** (11.2-14.5)	2519
	05-06	**3.46** (3.27-3.66)	**3.37** (3.17-3.59)	**5.42** (5.08-5.86)	**8.56** (8.19-9.17)	**11.6** (10.4-13.4)	7697
	07-08	**4.00** (3.69-4.33)	**3.89** (3.59-4.26)	**6.59** (6.10-7.13)	**10.9** (10.1-11.8)	**15.7** (14.6-16.8)	7628
	09-10	**3.62** (3.48-3.77)	**3.51** (3.37-3.72)	**5.84** (5.57-6.10)	**9.42** (8.73-10.3)	**13.1** (11.4-14.1)	2843
Age group							
6-11 years	01-02	**6.01** (5.49-6.57)	**6.10** (5.37-6.67)	**8.68** (7.72-10.6)	**13.6** (11.6-17.3)	**18.6** (13.7-23.7)	374
	03-04	**5.52** (4.86-6.28)	**5.34** (4.92-5.78)	**7.64** (6.67-10.5)	**13.5** (9.66-21.3)	**21.3** (12.0-46.9)	314
	05-06	**5.51** (5.06-6.00)	**5.66** (5.08-6.22)	**8.39** (7.61-9.25)	**12.3** (10.3-13.6)	**15.4** (14.3-17.0)	1054
	07-08	**6.21** (5.52-6.99)	**6.34** (5.56-7.10)	**9.78** (8.63-11.3)	**14.7** (13.3-16.0)	**20.6** (16.4-25.0)	1143
	09-10	**6.14** (5.51-6.84)	**6.10** (5.40-6.94)	**10.3** (7.79-13.3)	**16.2** (14.1-17.6)	**20.2** (15.8-25.5)	376
12-19 years	01-02	**3.10** (2.77-3.46)	**3.04** (2.67-3.53)	**4.75** (4.20-5.48)	**7.50** (6.82-8.26)	**10.4** (7.90-14.1)	827
	03-04	**2.85** (2.59-3.14)	**2.83** (2.62-3.17)	**4.39** (3.88-4.67)	**6.63** (5.56-7.82)	**8.62** (7.24-11.4)	719
	05-06	**3.14** (2.89-3.41)	**3.17** (2.87-3.40)	**4.86** (4.32-5.41)	**7.30** (6.40-8.43)	**9.54** (8.46-11.0)	2106
	07-08	**3.52** (3.27-3.78)	**3.43** (3.07-3.80)	**5.62** (5.13-6.11)	**8.84** (7.70-9.73)	**12.6** (10.4-15.8)	1134
	09-10	**3.15** (2.87-3.45)	**3.05** (2.75-3.50)	**4.79** (4.14-5.74)	**8.20** (6.29-8.96)	**9.70** (8.73-11.0)	452
20 years and older	01-02	**3.64** (3.37-3.93)	**3.44** (3.18-3.79)	**5.70** (5.27-6.18)	**9.47** (7.88-10.8)	**12.9** (10.7-14.9)	1617
	03-04	**3.18** (2.90-3.49)	**3.02** (2.74-3.33)	**4.94** (4.53-5.35)	**8.64** (7.18-10.0)	**11.7** (10.3-15.2)	1486
	05-06	**3.34** (3.15-3.53)	**3.24** (3.08-3.45)	**5.12** (4.82-5.45)	**8.24** (7.67-8.64)	**11.4** (10.0-13.0)	4537
	07-08	**3.88** (3.57-4.22)	**3.77** (3.49-4.14)	**6.35** (5.85-6.91)	**10.5** (9.64-11.5)	**15.4** (13.6-16.9)	5351
	09-10	**3.50** (3.33-3.68)	**3.44** (3.23-3.61)	**5.59** (5.20-5.94)	**8.91** (7.93-9.70)	**12.2** (10.5-13.7)	2015
Gender							
Males	01-02	**3.57** (3.36-3.79)	**3.42** (3.17-3.67)	**5.62** (5.22-6.12)	**9.24** (7.87-10.3)	**12.2** (10.9-13.3)	1335
	03-04	**3.23** (2.96-3.52)	**3.09** (2.83-3.33)	**5.00** (4.60-5.55)	**8.00** (6.86-10.2)	**12.5** (10.2-15.3)	1228
	05-06	**3.25** (3.08-3.44)	**3.16** (2.99-3.36)	**4.98** (4.71-5.37)	**8.07** (7.60-8.58)	**11.0** (10.0-12.9)	3765
	07-08	**3.78** (3.47-4.12)	**3.64** (3.28-4.03)	**6.29** (5.72-6.85)	**10.3** (9.28-11.3)	**14.4** (13.1-15.5)	3839
	09-10	**3.34** (3.19-3.51)	**3.25** (2.98-3.48)	**5.21** (4.95-5.77)	**9.08** (7.91-9.90)	**13.1** (10.4-15.0)	1400
Females	01-02	**3.92** (3.57-4.30)	**3.79** (3.36-4.31)	**6.33** (5.65-7.00)	**10.6** (8.64-12.6)	**14.0** (11.8-17.0)	1483
	03-04	**3.38** (3.02-3.78)	**3.28** (2.90-3.61)	**5.24** (4.73-6.00)	**9.40** (7.24-11.4)	**12.4** (10.7-15.2)	1291
	05-06	**3.67** (3.43-3.93)	**3.58** (3.31-3.91)	**5.86** (5.39-6.19)	**9.21** (8.35-9.77)	**12.1** (10.5-14.5)	3932
	07-08	**4.22** (3.90-4.56)	**4.16** (3.81-4.55)	**6.89** (6.40-7.54)	**11.5** (10.4-12.6)	**16.6** (14.5-18.6)	3789
	09-10	**3.92** (3.71-4.13)	**3.89** (3.68-4.07)	**6.16** (5.83-6.74)	**9.58** (8.68-10.7)	**13.2** (10.8-16.1)	1443

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html

Urinary Perchlorate (creatinine corrected) (2001 - 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**3.96** (3.39-4.63)	**3.71** (3.15-4.69)	**6.18** (5.06-8.13)	**10.9** (8.78-14.0)	**15.3** (12.2-18.6)	708
	03-04	**3.59** (3.32-3.88)	**3.45** (3.10-3.68)	**5.69** (4.82-6.45)	**9.77** (8.00-11.2)	**13.5** (11.2-20.0)	616
	05-06	**3.75** (3.56-3.95)	**3.60** (3.42-3.81)	**5.97** (5.53-6.48)	**9.83** (9.19-10.4)	**12.7** (11.3-14.5)	1972
	07-08	**4.20** (3.96-4.46)	**4.17** (3.81-4.58)	**6.95** (6.33-7.73)	**11.8** (10.4-12.3)	**15.7** (14.4-17.6)	1505
	09-10	**4.18** (3.73-4.69)	**4.09** (3.68-4.53)	**6.94** (5.71-7.74)	**10.3** (8.91-13.3)	**16.2** (11.9-19.8)	611
Non-Hispanic blacks	01-02	**2.66** (2.35-3.01)	**2.66** (2.22-2.97)	**4.24** (3.69-5.20)	**7.18** (6.17-8.80)	**11.0** (8.73-12.7)	680
	03-04	**2.33** (2.11-2.57)	**2.24** (2.02-2.47)	**3.60** (3.22-4.13)	**6.54** (4.91-8.47)	**9.02** (6.84-11.8)	651
	05-06	**2.50** (2.32-2.69)	**2.40** (2.24-2.61)	**3.97** (3.69-4.26)	**6.71** (6.30-7.13)	**9.41** (8.53-10.4)	2078
	07-08	**2.89** (2.60-3.21)	**2.76** (2.47-3.17)	**4.92** (4.36-5.54)	**8.63** (7.43-9.78)	**11.8** (10.6-13.6)	1706
	09-10	**2.40** (2.19-2.63)	**2.35** (2.11-2.55)	**3.81** (3.60-4.18)	**6.31** (5.58-6.94)	**8.31** (6.69-10.6)	543
Non-Hispanic whites	01-02	**3.95** (3.64-4.29)	**3.73** (3.39-4.22)	**6.19** (5.73-6.64)	**10.0** (8.67-11.2)	**13.3** (11.8-16.0)	1227
	03-04	**3.53** (3.16-3.94)	**3.35** (3.01-3.68)	**5.29** (4.81-5.96)	**9.23** (7.61-11.0)	**12.8** (11.0-16.5)	1091
	05-06	**3.63** (3.36-3.91)	**3.51** (3.20-3.85)	**5.60** (5.10-6.10)	**8.58** (7.98-9.42)	**11.8** (10.0-14.3)	3056
	07-08	**4.17** (3.83-4.54)	**4.06** (3.71-4.52)	**6.63** (6.18-7.23)	**10.8** (9.86-11.8)	**15.5** (14.0-16.8)	3190
	09-10	**3.82** (3.66-3.99)	**3.67** (3.50-3.83)	**5.98** (5.69-6.26)	**9.40** (8.73-10.2)	**12.9** (10.8-14.1)	1215

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html

Urinary Perchlorate (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**3.38** (3.17-3.60)	**3.28** (2.99-3.60)	**5.55** (5.21-5.92)	**9.20** (8.31-10.1)	**14.7** (11.1-17.4)	2465
Age group							
6-11 years	11-12	**5.56** (5.05-6.12)	**5.25** (4.75-5.95)	**8.57** (7.57-9.95)	**14.3** (10.4-17.4)	**18.0** (13.8-27.3)	393
12-19 years	11-12	**2.70** (2.50-2.91)	**2.87** (2.46-3.22)	**3.92** (3.80-4.14)	**5.73** (4.55-7.76)	**8.14** (5.97-8.43)	384
20 years and older	11-12	**3.31** (3.07-3.56)	**3.16** (2.85-3.54)	**5.53** (5.16-5.88)	**9.16** (8.03-10.2)	**14.8** (10.1-18.8)	1688
Gender							
Males	11-12	**3.12** (2.84-3.42)	**2.99** (2.64-3.34)	**4.84** (4.41-5.41)	**8.38** (7.08-9.92)	**14.7** (9.56-20.0)	1250
Females	11-12	**3.64** (3.41-3.89)	**3.61** (3.18-3.96)	**6.10** (5.66-6.45)	**9.86** (8.80-10.9)	**14.7** (11.6-17.7)	1215
Race/ethnicity							
Mexican Americans	11-12	**3.90** (3.21-4.75)	**3.67** (3.17-4.42)	**6.31** (5.16-7.92)	**10.9** (8.38-14.4)	**17.8** (11.7-28.1)	313
Non-Hispanic blacks	11-12	**2.28** (2.10-2.46)	**2.12** (1.99-2.31)	**3.74** (3.20-4.03)	**6.79** (5.15-8.44)	**9.35** (7.57-12.2)	663
Non-Hispanic whites	11-12	**3.58** (3.36-3.81)	**3.50** (3.16-3.82)	**5.72** (5.28-6.10)	**9.22** (8.19-10.3)	**14.8** (10.2-17.7)	808
All Hispanics	11-12	**3.52** (2.95-4.20)	**3.31** (2.68-4.11)	**5.83** (4.67-7.08)	**9.91** (8.03-12.1)	**15.2** (11.7-19.4)	566
Asians	11-12	**3.76** (3.41-4.15)	**3.84** (3.45-4.12)	**6.00** (5.25-7.04)	**11.2** (8.22-18.8)	**21.2** (12.6-33.6)	341

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html

Urinary Thiocyanate (2001 - 2010)

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.52** (1.44-1.61)	**1.50** (1.40-1.60)	**3.60** (3.00-4.10)	**7.90** (6.90-9.00)	**12.0** (10.0-13.0)	1617
	05-06	**1.23** (1.12-1.35)	**1.18** (1.08-1.31)	**2.55** (2.31-2.83)	**6.11** (5.10-6.85)	**9.04** (8.14-9.93)	7697
	07-08	**1.35** (1.26-1.45)	**1.32** (1.23-1.42)	**2.77** (2.47-3.13)	**6.36** (5.39-7.33)	**9.54** (8.58-11.1)	7629
	09-10	**1.15** (1.08-1.24)	**1.12** (1.04-1.18)	**2.27** (2.11-2.45)	**5.39** (4.61-6.37)	**8.92** (7.59-9.83)	2844
Age group							
6-11 years	01-02	**1.35** (1.20-1.51)	**1.50** (1.30-1.70)	**2.50** (1.90-3.00)	**3.70** (3.30-4.10)	**4.90** (3.90-5.60)	374
	05-06	**.980** (.892-1.08)	**1.03** (.916-1.15)	**1.72** (1.55-1.92)	**2.65** (2.31-3.09)	**3.45** (2.96-4.21)	1054
	07-08	**1.10** (.989-1.22)	**1.12** (1.02-1.24)	**1.88** (1.68-2.07)	**2.92** (2.48-3.52)	**4.08** (3.35-5.30)	1143
	09-10	**.847** (.760-.945)	**.855** (.762-1.02)	**1.51** (1.31-1.82)	**2.27** (2.00-2.45)	**2.64** (2.30-3.09)	377
12-19 years	01-02	**1.59** (1.43-1.77)	**1.50** (1.40-1.70)	**2.90** (2.50-3.30)	**5.30** (4.30-7.40)	**7.70** (5.90-10.0)	826
	05-06	**1.24** (1.11-1.39)	**1.29** (1.15-1.47)	**2.27** (1.99-2.62)	**3.84** (3.18-4.65)	**6.07** (4.76-6.95)	2106
	07-08	**1.29** (1.15-1.46)	**1.35** (1.14-1.53)	**2.39** (2.06-2.69)	**3.93** (3.36-4.57)	**6.14** (4.55-7.27)	1135
	09-10	**.978** (.869-1.10)	**1.01** (.927-1.18)	**1.76** (1.68-1.99)	**2.96** (2.51-3.78)	**4.48** (3.05-6.62)	452
20 years and older	01-02	**1.54** (1.43-1.65)	**1.50** (1.40-1.60)	**3.60** (3.00-4.10)	**7.90** (6.90-9.00)	**12.0** (10.0-13.0)	1617
	05-06	**1.26** (1.14-1.40)	**1.19** (1.08-1.34)	**2.82** (2.50-3.15)	**6.87** (6.06-7.58)	**9.79** (8.78-10.7)	4537
	07-08	**1.39** (1.29-1.50)	**1.34** (1.25-1.46)	**3.11** (2.68-3.57)	**7.21** (6.05-8.31)	**10.8** (8.99-12.0)	5351
	09-10	**1.22** (1.13-1.32)	**1.15** (1.07-1.23)	**2.53** (2.31-2.93)	**6.32** (5.11-7.59)	**9.72** (8.62-11.4)	2015
Gender							
Males	01-02	**1.86** (1.67-2.07)	**1.80** (1.60-2.10)	**4.00** (3.40-4.90)	**8.40** (7.00-10.0)	**12.0** (10.0-13.0)	1335
	05-06	**1.49** (1.36-1.64)	**1.44** (1.27-1.62)	**3.10** (2.82-3.56)	**6.90** (6.13-7.64)	**9.93** (8.99-10.7)	3765
	07-08	**1.61** (1.50-1.72)	**1.60** (1.50-1.71)	**3.32** (2.96-3.77)	**7.27** (6.01-8.22)	**10.9** (9.04-12.3)	3839
	09-10	**1.33** (1.22-1.46)	**1.23** (1.15-1.36)	**2.71** (2.29-3.10)	**5.81** (5.01-7.19)	**9.25** (7.85-10.0)	1401
Females	01-02	**1.26** (1.16-1.36)	**1.30** (1.00-1.40)	**2.50** (2.40-2.80)	**6.00** (5.20-6.70)	**8.70** (7.20-10.0)	1482
	05-06	**1.02** (.920-1.13)	**.995** (.886-1.13)	**2.07** (1.86-2.25)	**4.61** (3.81-5.98)	**8.04** (7.26-8.78)	3932
	07-08	**1.14** (1.04-1.24)	**1.09** (.991-1.19)	**2.31** (2.06-2.62)	**5.51** (4.58-6.52)	**8.59** (7.36-9.85)	3790
	09-10	**1.00** (.894-1.13)	**.982** (.842-1.10)	**1.95** (1.59-2.29)	**4.63** (3.59-6.33)	**8.79** (6.44-10.0)	1443
Race/ethnicity							
Mexican Americans	01-02	**1.14** (.977-1.33)	**1.20** (.940-1.40)	**2.20** (1.80-2.60)	**3.90** (3.00-4.90)	**5.70** (4.20-6.60)	707
	05-06	**.823** (.744-.912)	**.844** (.763-.937)	**1.51** (1.36-1.71)	**2.70** (2.26-3.22)	**4.48** (3.49-5.40)	1972
	07-08	**.993** (.926-1.06)	**1.04** (.987-1.11)	**1.88** (1.75-2.02)	**3.30** (2.98-3.52)	**4.56** (3.92-5.43)	1505
	09-10	**.877** (.787-.977)	**.917** (.800-1.02)	**1.62** (1.34-1.92)	**2.97** (2.57-3.83)	**5.06** (4.06-5.56)	611
Non-Hispanic blacks	01-02	**1.91** (1.72-2.11)	**2.00** (1.80-2.20)	**3.90** (3.30-4.90)	**7.60** (6.20-10.0)	**10.0** (7.00-15.0)	679
	05-06	**1.50** (1.32-1.72)	**1.51** (1.36-1.68)	**3.13** (2.56-3.81)	**6.94** (5.66-8.09)	**10.3** (8.01-12.4)	2078
	07-08	**1.73** (1.61-1.86)	**1.73** (1.61-1.86)	**3.78** (3.53-4.23)	**8.29** (7.25-9.07)	**12.8** (11.2-14.5)	1707
	09-10	**1.34** (1.21-1.48)	**1.29** (1.15-1.49)	**2.67** (2.36-3.32)	**6.82** (6.01-8.08)	**12.1** (7.67-14.1)	544
Non-Hispanic whites	01-02	**1.56** (1.45-1.68)	**1.50** (1.40-1.70)	**3.40** (2.80-3.80)	**7.20** (6.30-8.50)	**12.0** (8.90-13.0)	1228
	05-06	**1.30** (1.18-1.44)	**1.25** (1.12-1.40)	**2.74** (2.46-3.01)	**6.53** (5.57-7.31)	**9.43** (8.58-10.4)	3056
	07-08	**1.42** (1.29-1.56)	**1.41** (1.28-1.53)	**2.98** (2.52-3.44)	**6.67** (5.24-8.14)	**9.71** (8.32-11.9)	3190
	09-10	**1.27** (1.18-1.36)	**1.18** (1.13-1.26)	**2.44** (2.27-2.72)	**5.95** (4.62-7.69)	**9.59** (8.53-11.3)	1215

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 05-06, 07-08, and 09-10 are 0.02, 0.02, 0.02, and 0.02 respectively.

Urinary Thiocyanate (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.09** (1.01-1.17)	**1.05** (.973-1.17)	**2.23** (2.04-2.43)	**4.69** (4.03-5.64)	**7.16** (5.66-8.20)	2467
Age group							
6-11 years	11-12	**.897** (.816-.987)	**.982** (.847-1.11)	**1.54** (1.35-1.74)	**2.23** (1.93-3.02)	**3.03** (2.34-4.45)	394
12-19 years	11-12	**.983** (.802-1.21)	**.954** (.788-1.13)	**1.73** (1.31-2.42)	**3.48** (2.44-5.01)	**5.86** (3.48-8.47)	384
20 years and older	11-12	**1.13** (1.05-1.21)	**1.10** (1.01-1.21)	**2.42** (2.18-2.86)	**5.35** (4.36-6.21)	**7.38** (6.43-8.45)	1689
Gender							
Males	11-12	**1.27** (1.18-1.38)	**1.24** (1.10-1.37)	**2.43** (2.11-2.97)	**4.91** (3.99-6.43)	**7.30** (5.96-8.51)	1251
Females	11-12	**.931** (.815-1.07)	**.924** (.797-1.07)	**1.95** (1.61-2.27)	**4.36** (3.63-5.37)	**6.83** (5.51-8.20)	1216
Race/ethnicity							
Mexican Americans	11-12	**.892** (.730-1.09)	**.936** (.734-1.16)	**1.66** (1.38-1.94)	**3.03** (1.90-4.79)	**4.24** (2.64-5.25)	313
Non-Hispanic blacks	11-12	**1.29** (1.12-1.48)	**1.25** (1.14-1.40)	**2.37** (2.01-2.92)	**5.75** (4.50-7.28)	**9.91** (7.40-12.7)	663
Non-Hispanic whites	11-12	**1.16** (1.06-1.26)	**1.12** (.996-1.28)	**2.43** (2.16-2.92)	**5.11** (4.03-6.43)	**7.30** (5.87-8.45)	810
All Hispanics	11-12	**.865** (.733-1.02)	**.876** (.734-1.02)	**1.57** (1.38-1.82)	**3.42** (2.20-4.37)	**4.84** (3.85-6.40)	566
Asians	11-12	**.646** (.571-.731)	**.715** (.624-.765)	**1.19** (1.02-1.47)	**2.51** (1.82-2.71)	**3.19** (2.61-4.11)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.02.

Urinary Thiocyanate (creatinine corrected) (2001 - 2010)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.53** (1.43-1.64)	**1.47** (1.37-1.61)	**3.35** (2.95-3.74)	**7.34** (6.67-7.81)	**10.3** (8.81-11.3)	1616
	05-06	**1.23** (1.13-1.33)	**1.15** (1.05-1.27)	**2.44** (2.18-2.68)	**5.67** (5.16-6.28)	**8.23** (7.71-8.98)	7697
	07-08	**1.39** (1.28-1.51)	**1.33** (1.22-1.43)	**2.72** (2.42-3.04)	**6.11** (5.25-7.30)	**9.59** (8.03-11.5)	7628
	09-10	**1.24** (1.15-1.34)	**1.13** (1.04-1.21)	**2.31** (2.11-2.58)	**5.78** (4.64-6.63)	**9.13** (7.28-11.2)	2843
Age group							
6-11 years	01-02	**1.56** (1.35-1.80)	**1.55** (1.35-1.82)	**2.67** (2.33-3.13)	**4.46** (3.79-5.20)	**5.33** (4.58-6.16)	374
	05-06	**1.16** (1.06-1.28)	**1.18** (1.06-1.34)	**2.03** (1.81-2.32)	**3.15** (2.83-3.43)	**4.25** (3.49-4.58)	1054
	07-08	**1.40** (1.27-1.54)	**1.42** (1.24-1.59)	**2.28** (2.02-2.53)	**3.74** (3.29-4.26)	**5.23** (4.39-6.65)	1143
	09-10	**1.16** (1.04-1.30)	**1.12** (1.02-1.23)	**1.90** (1.58-2.26)	**2.96** (2.47-3.57)	**3.92** (3.04-4.67)	376
12-19 years	01-02	**1.23** (1.12-1.35)	**1.14** (1.08-1.24)	**2.12** (1.78-2.45)	**3.88** (3.28-4.91)	**5.75** (3.93-8.13)	825
	05-06	**.941** (.867-1.02)	**.937** (.855-1.03)	**1.69** (1.51-1.86)	**2.95** (2.43-3.64)	**4.15** (3.64-5.00)	2106
	07-08	**1.01** (.910-1.12)	**1.04** (.906-1.17)	**1.75** (1.60-1.92)	**2.94** (2.49-3.54)	**4.69** (3.64-5.44)	1134
	09-10	**.917** (.858-.980)	**.875** (.784-.972)	**1.53** (1.36-1.79)	**2.90** (2.26-3.84)	**4.86** (3.49-5.10)	452
20 years and older	01-02	**1.59** (1.47-1.71)	**1.47** (1.37-1.61)	**3.35** (2.95-3.74)	**7.34** (6.67-7.81)	**10.3** (8.81-11.3)	1616
	05-06	**1.29** (1.17-1.42)	**1.20** (1.08-1.33)	**2.68** (2.37-3.10)	**6.43** (5.88-7.07)	**8.99** (8.23-10.2)	4537
	07-08	**1.46** (1.34-1.59)	**1.37** (1.27-1.47)	**3.00** (2.69-3.45)	**7.02** (5.82-8.26)	**10.5** (8.63-12.9)	5351
	09-10	**1.30** (1.19-1.43)	**1.17** (1.08-1.26)	**2.63** (2.31-3.05)	**6.41** (5.42-7.83)	**9.88** (8.30-12.1)	2015
Gender							
Males	01-02	**1.51** (1.37-1.67)	**1.42** (1.31-1.59)	**3.33** (3.00-3.67)	**6.38** (5.81-6.92)	**8.51** (7.41-9.72)	1335
	05-06	**1.24** (1.12-1.37)	**1.18** (1.05-1.32)	**2.61** (2.26-3.01)	**5.67** (5.00-6.43)	**8.17** (7.15-9.13)	3765
	07-08	**1.38** (1.28-1.50)	**1.32** (1.23-1.42)	**2.77** (2.42-3.08)	**6.13** (5.47-6.97)	**9.27** (7.82-11.1)	3839
	09-10	**1.22** (1.09-1.36)	**1.12** (1.02-1.24)	**2.47** (2.14-2.96)	**5.78** (4.51-6.67)	**8.72** (6.88-11.3)	1400
Females	01-02	**1.55** (1.43-1.69)	**1.45** (1.33-1.58)	**2.79** (2.42-3.25)	**7.07** (5.86-7.69)	**10.0** (8.18-11.1)	1480
	05-06	**1.22** (1.12-1.33)	**1.13** (1.04-1.24)	**2.27** (2.00-2.54)	**5.62** (4.91-6.37)	**8.40** (7.20-10.5)	3932
	07-08	**1.40** (1.27-1.55)	**1.34** (1.19-1.45)	**2.69** (2.40-3.03)	**6.07** (4.89-7.80)	**9.88** (7.93-12.1)	3789
	09-10	**1.26** (1.12-1.42)	**1.14** (1.01-1.26)	**2.15** (1.88-2.74)	**5.80** (4.17-7.29)	**9.24** (6.88-12.0)	1443
Race/ethnicity							
Mexican Americans	01-02	**1.07** (.898-1.27)	**1.06** (.819-1.29)	**1.97** (1.51-2.50)	**3.62** (2.86-4.52)	**5.10** (3.52-7.33)	707
	05-06	**.768** (.685-.861)	**.773** (.684-.881)	**1.37** (1.20-1.59)	**2.44** (2.19-2.85)	**3.66** (3.28-4.27)	1972
	07-08	**.995** (.923-1.07)	**1.03** (.918-1.14)	**1.88** (1.71-2.05)	**3.27** (2.77-3.76)	**4.59** (3.86-5.59)	1505
	09-10	**.921** (.845-1.01)	**.912** (.849-.985)	**1.57** (1.38-1.90)	**3.09** (2.79-3.63)	**4.24** (3.72-5.62)	611
Non-Hispanic blacks	01-02	**1.37** (1.18-1.59)	**1.37** (1.18-1.61)	**2.80** (2.21-3.43)	**5.67** (4.17-6.74)	**7.64** (5.91-11.3)	678
	05-06	**1.08** (.972-1.20)	**1.05** (.972-1.16)	**2.15** (1.84-2.57)	**4.77** (3.93-5.61)	**6.91** (5.84-7.80)	2078
	07-08	**1.31** (1.21-1.41)	**1.25** (1.18-1.36)	**2.81** (2.55-3.24)	**6.19** (5.29-6.77)	**8.74** (7.44-9.59)	1706
	09-10	**1.07** (.963-1.19)	**.993** (.888-1.08)	**2.14** (1.87-2.49)	**5.39** (3.94-6.76)	**7.74** (6.56-11.3)	543
Non-Hispanic whites	01-02	**1.67** (1.55-1.80)	**1.55** (1.42-1.73)	**3.29** (3.00-3.73)	**7.09** (6.38-7.95)	**10.3** (8.78-11.1)	1227
	05-06	**1.38** (1.25-1.52)	**1.30** (1.14-1.44)	**2.78** (2.48-3.12)	**6.31** (5.67-7.08)	**9.00** (8.13-10.5)	3056
	07-08	**1.55** (1.40-1.70)	**1.45** (1.32-1.58)	**2.96** (2.56-3.53)	**7.03** (5.71-8.56)	**10.9** (8.70-13.1)	3190
	09-10	**1.42** (1.32-1.54)	**1.25** (1.17-1.38)	**2.71** (2.38-3.17)	**6.59** (5.61-7.85)	**10.2** (8.62-11.8)	1215

Urinary Thiocyanate (creatinine corrected) (2011 - 2012)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.24** (1.18-1.31)	**1.19** (1.11-1.28)	**2.20** (2.12-2.37)	**5.10** (4.05-5.98)	**8.53** (6.73-10.9)	2465
Age group							
6-11 years	11-12	**1.28** (1.16-1.40)	**1.27** (1.12-1.39)	**2.11** (1.89-2.34)	**3.11** (2.69-4.13)	**4.73** (3.62-5.77)	393
12-19 years	11-12	**.958** (.831-1.10)	**.949** (.803-1.19)	**1.49** (1.35-1.89)	**2.82** (2.12-3.30)	**3.77** (2.97-4.91)	384
20 years and older	11-12	**1.29** (1.22-1.35)	**1.21** (1.12-1.31)	**2.41** (2.19-2.67)	**5.70** (4.69-7.11)	**9.90** (7.75-11.3)	1688
Gender							
Males	11-12	**1.20** (1.11-1.29)	**1.16** (1.06-1.28)	**2.16** (2.07-2.48)	**5.00** (3.77-6.42)	**7.75** (6.10-10.4)	1250
Females	11-12	**1.28** (1.17-1.40)	**1.22** (1.11-1.38)	**2.20** (2.01-2.59)	**5.10** (3.89-6.02)	**10.4** (6.32-14.0)	1215
Race/ethnicity							
Mexican Americans	11-12	**1.01** (.831-1.22)	**.935** (.790-1.20)	**1.90** (1.45-2.32)	**3.28** (2.53-3.73)	**4.49** (3.46-6.12)	313
Non-Hispanic blacks	11-12	**1.00** (.901-1.12)	**.958** (.892-1.04)	**1.96** (1.71-2.23)	**3.72** (3.31-4.55)	**6.36** (4.89-7.76)	663
Non-Hispanic whites	11-12	**1.41** (1.31-1.52)	**1.35** (1.23-1.46)	**2.66** (2.21-2.91)	**5.78** (4.49-7.41)	**10.4** (7.41-12.8)	808
All Hispanics	11-12	**.968** (.826-1.13)	**.923** (.805-1.11)	**1.76** (1.45-2.07)	**3.26** (2.53-3.76)	**5.10** (3.76-6.40)	566
Asians	11-12	**.864** (.775-.964)	**.868** (.767-.993)	**1.44** (1.30-1.63)	**2.31** (1.96-2.81)	**3.69** (2.60-5.35)	341

Serum Perfluorobutane sulfonic acid (PFBuS) (2003 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2094
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-.200)	2120
	07-08	*	< LOD	< LOD	< LOD	< LOD	2100
	09-10	*	< LOD	< LOD	< LOD	< LOD	2233
Age group							
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	640
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-.100)	640
	07-08	*	< LOD	< LOD	< LOD	< LOD	357
	09-10	*	< LOD	< LOD	< LOD	< LOD	364
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1454
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-.200)	1480
	07-08	*	< LOD	< LOD	< LOD	< LOD	1743
	09-10	*	< LOD	< LOD	< LOD	< LOD	1869
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1053
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-.200)	1048
	07-08	*	< LOD	< LOD	< LOD	< LOD	1059
	09-10	*	< LOD	< LOD	< LOD	< LOD	1075
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1041
	05-06	*	< LOD	< LOD	< LOD	.100 (<LOD-.200)	1072
	07-08	*	< LOD	< LOD	< LOD	< LOD	1041
	09-10	*	< LOD	< LOD	< LOD	< LOD	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, and 09-10 are 0.4, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorobutane sulfonic acid (PFBuS) (2003 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	485
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.200)	499
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	461
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	538
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	544
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	419
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	962
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.400)	935
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	931
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, and 09-10 are 0.4, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorobutane sulfonic acid (PFBuS) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1904
Age group							
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	344
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1560
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	966
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	938
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	211
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	666
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	406
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorodecanoic acid (PFDeA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	.200 (<LOD-.300)	.400 (.300-.700)	.600 (.400-1.10)	1562
	03-04	*	< LOD	.300 (<LOD-.500)	.600 (.400-1.10)	.900 (.500-1.80)	2094
	05-06	.355 (.297-.423)	.300 (.300-.400)	.500 (.400-.700)	.900 (.600-1.60)	1.50 (.900-2.60)	2120
	07-08	.286 (.264-.309)	.300 (.300-.300)	.400 (.400-.500)	.700 (.600-.700)	.900 (.800-1.00)	2100
	09-10	.279 (.258-.303)	.300 (.300-.300)	.400 (.400-.500)	.700 (.600-.800)	.900 (.800-1.10)	2233
Age group							
12-19 years	99-00	*	< LOD	< LOD	.300 (.200-.400)	.400 (.300-.600)	543
	03-04	*	< LOD	< LOD	.500 (<LOD-1.00)	.800 (.300-1.20)	640
	05-06	.295 (.258-.338)	.300 (.200-.300)	.500 (.400-.500)	.600 (.500-.800)	.800 (.600-1.60)	640
	07-08	.231 (.214-.248)	.200 (.200-.300)	.300 (.300-.400)	.500 (.400-.500)	.600 (.500-.700)	357
	09-10	.220 (.198-.245)	.200 (.200-.200)	.300 (.300-.300)	.400 (.400-.600)	.600 (.400-.800)	364
20 years and older	99-00	*	< LOD	.300 (.200-.300)	.400 (.300-.800)	.600 (.400-1.50)	1019
	03-04	*	< LOD	.400 (<LOD-.500)	.700 (.400-1.00)	.900 (.500-1.80)	1454
	05-06	.364 (.303-.438)	.300 (.300-.400)	.500 (.400-.700)	1.00 (.600-1.70)	1.50 (.900-2.60)	1480
	07-08	.295 (.271-.321)	.300 (.300-.300)	.400 (.400-.500)	.700 (.600-.800)	.900 (.800-1.10)	1743
	09-10	.289 (.265-.314)	.300 (.300-.300)	.400 (.400-.500)	.700 (.600-.800)	.900 (.800-1.20)	1869
Gender							
Males	99-00	*	< LOD	.300 (.200-.300)	.400 (.300-.700)	.500 (.300-1.90)	743
	03-04	*	< LOD	.400 (<LOD-.500)	.800 (.400-1.40)	1.10 (.600-2.10)	1053
	05-06	.381 (.318-.456)	.400 (.300-.400)	.600 (.400-.800)	1.00 (.600-2.20)	1.70 (1.00-2.60)	1048
	07-08	.306 (.283-.331)	.300 (.300-.300)	.400 (.400-.500)	.700 (.600-.800)	.900 (.800-1.20)	1059
	09-10	.289 (.264-.318)	.300 (.300-.300)	.400 (.400-.500)	.600 (.500-.800)	.800 (.600-1.20)	1075
Females	99-00	*	< LOD	.200 (<LOD-.300)	.400 (.300-.800)	.600 (.400-1.40)	819
	03-04	*	< LOD	.300 (<LOD-.400)	.500 (.400-.800)	.800 (.500-1.20)	1041
	05-06	.331 (.277-.396)	.300 (.300-.400)	.500 (.400-.600)	.900 (.600-1.40)	1.30 (.800-2.30)	1072
	07-08	.267 (.245-.292)	.300 (.200-.300)	.400 (.400-.500)	.600 (.500-.800)	.800 (.700-1.10)	1041
	09-10	.270 (.248-.295)	.300 (.200-.300)	.400 (.400-.500)	.700 (.600-.800)	1.00 (.800-1.10)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.3, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorodecanoic acid (PFDeA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**.300** (<LOD-.300)	**.300** (.200-1.50)	584
	03-04	*	**< LOD**	**< LOD**	**.500** (.400-.500)	**.600** (.500-.800)	485
	05-06	**.283** (.245-.327)	**.300** (.200-.300)	**.400** (.300-.500)	**.600** (.500-1.00)	**1.00** (.500-2.40)	499
	07-08	**.253** (.222-.289)	**.200** (.200-.300)	**.400** (.300-.500)	**.600** (.400-.700)	**.600** (.500-1.40)	391
	09-10	**.242** (.215-.272)	**.200** (.200-.300)	**.400** (.300-.400)	**.500** (.500-.600)	**.700** (.600-.800)	461
Non-Hispanic blacks	99-00	*	**.200** (<LOD-.300)	**.400** (.200-.700)	**.800** (.500-1.20)	**1.10** (.600-2.30)	303
	03-04	*	**< LOD**	**.400** (<LOD-.700)	**.800** (.400-1.50)	**1.00** (.500-3.10)	538
	05-06	**.405** (.309-.531)	**.400** (.300-.500)	**.600** (.400-.900)	**1.20** (.600-2.90)	**2.30** (1.10-3.70)	544
	07-08	**.331** (.298-.368)	**.300** (.300-.400)	**.500** (.400-.600)	**.800** (.600-.900)	**1.00** (.800-1.50)	419
	09-10	**.336** (.298-.379)	**.300** (.300-.300)	**.500** (.400-.600)	**.800** (.600-1.00)	**1.10** (.800-2.60)	391
Non-Hispanic whites	99-00	*	**< LOD**	**.300** (<LOD-.300)	**.400** (.300-.600)	**.500** (.400-.800)	519
	03-04	*	**< LOD**	**.300** (<LOD-.500)	**.600** (.400-1.00)	**.900** (.500-1.80)	962
	05-06	**.350** (.294-.417)	**.300** (.300-.400)	**.500** (.400-.700)	**.900** (.600-1.50)	**1.40** (.800-2.30)	935
	07-08	**.276** (.254-.301)	**.300** (.200-.300)	**.400** (.400-.500)	**.600** (.500-.700)	**.900** (.700-.900)	931
	09-10	**.270** (.240-.304)	**.300** (.200-.300)	**.400** (.300-.500)	**.600** (.500-.800)	**.800** (.600-1.10)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.3, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorodecanoic acid (PFDeA) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.199** (.181-.220)	**.190** (.170-.210)	**.300** (.270-.340)	**.480** (.420-.580)	**.690** (.600-.770)	1904
Age group							
12-19 years	11-12	**.146** (.126-.168)	**.150** (.120-.170)	**.200** (.180-.230)	**.290** (.240-.340)	**.360** (.290-.560)	344
20 years and older	11-12	**.209** (.189-.230)	**.200** (.180-.230)	**.320** (.280-.370)	**.510** (.440-.590)	**.730** (.630-.850)	1560
Gender							
Males	11-12	**.206** (.184-.232)	**.200** (.180-.230)	**.310** (.260-.370)	**.440** (.380-.550)	**.620** (.480-.810)	966
Females	11-12	**.193** (.177-.211)	**.190** (.170-.210)	**.290** (.260-.340)	**.530** (.410-.640)	**.690** (.640-.830)	938
Race/ethnicity							
Mexican Americans	11-12	**.176** (.150-.205)	**.170** (.150-.200)	**.260** (.210-.300)	**.380** (.300-.530)	**.530** (.360-.600)	211
Non-Hispanic blacks	11-12	**.214** (.193-.237)	**.200** (.180-.220)	**.330** (.280-.380)	**.590** (.420-.850)	**.880** (.670-1.06)	485
Non-Hispanic whites	11-12	**.193** (.171-.219)	**.190** (.170-.220)	**.290** (.260-.340)	**.440** (.360-.590)	**.620** (.480-.740)	666
All Hispanics	11-12	**.182** (.156-.212)	**.170** (.150-.200)	**.270** (.210-.330)	**.430** (.330-.530)	**.540** (.440-.760)	406
Asians	11-12	**.367** (.308-.438)	**.350** (.280-.420)	**.670** (.510-.870)	**1.35** (.870-2.05)	**2.05** (1.19-2.52)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorododecanoic acid (PFDoA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1562
	03-04	*	< LOD	< LOD	< LOD	< LOD	2094
	05-06	*	< LOD	< LOD	< LOD	< LOD	2120
	07-08	*	< LOD	< LOD	< LOD	< LOD	2100
	09-10	*	< LOD	< LOD	< LOD	< LOD	2233
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	543
	03-04	*	< LOD	< LOD	< LOD	< LOD	640
	05-06	*	< LOD	< LOD	< LOD	< LOD	640
	07-08	*	< LOD	< LOD	< LOD	< LOD	357
	09-10	*	< LOD	< LOD	< LOD	< LOD	364
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1019
	03-04	*	< LOD	< LOD	< LOD	< LOD	1454
	05-06	*	< LOD	< LOD	< LOD	< LOD	1480
	07-08	*	< LOD	< LOD	< LOD	< LOD	1743
	09-10	*	< LOD	< LOD	< LOD	.100 (<LOD-.100)	1869
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	743
	03-04	*	< LOD	< LOD	< LOD	< LOD	1053
	05-06	*	< LOD	< LOD	< LOD	< LOD	1048
	07-08	*	< LOD	< LOD	< LOD	< LOD	1059
	09-10	*	< LOD	< LOD	< LOD	< LOD	1075
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	819
	03-04	*	< LOD	< LOD	< LOD	< LOD	1041
	05-06	*	< LOD	< LOD	< LOD	< LOD	1072
	07-08	*	< LOD	< LOD	< LOD	< LOD	1041
	09-10	*	< LOD	< LOD	< LOD	.100 (<LOD-.100)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 1.0, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorododecanoic acid (PFDoA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	584
	03-04	*	< LOD	< LOD	< LOD	< LOD	485
	05-06	*	< LOD	< LOD	< LOD	< LOD	499
	07-08	*	< LOD	< LOD	< LOD	< LOD	391
	09-10	*	< LOD	< LOD	< LOD	< LOD	461
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	303
	03-04	*	< LOD	< LOD	< LOD	< LOD	538
	05-06	*	< LOD	< LOD	< LOD	< LOD	544
	07-08	*	< LOD	< LOD	< LOD	< LOD	419
	09-10	*	< LOD	< LOD	< LOD	.100 (<LOD-.400)	391
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	519
	03-04	*	< LOD	< LOD	< LOD	< LOD	962
	05-06	*	< LOD	< LOD	< LOD	< LOD	935
	07-08	*	< LOD	< LOD	< LOD	< LOD	931
	09-10	*	< LOD	< LOD	< LOD	< LOD	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 1.0, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorododecanoic acid (PFDoA) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.140** (<LOD-.240)	1904
Age group							
12-19 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	344
20 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.150** (<LOD-.280)	1560
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.140** (<LOD-.240)	966
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.130** (<LOD-.280)	938
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.110** (<LOD-.230)	211
Non-Hispanic blacks	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.110** (<LOD-.160)	485
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.130** (<LOD-.290)	666
All Hispanics	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.110** (<LOD-.150)	406
Asians	11-12	*	**< LOD**	**< LOD**	**.180** (.130-.350)	**.360** (.180-.440)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluoroheptanoic acid (PFHpA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.500 (<LOD-.600)	.700 (.500-1.00)	1562
	03-04	*	< LOD	< LOD	< LOD	.400 (<LOD-.500)	2094
	05-06	*	< LOD	< LOD	< LOD	.700 (<LOD-1.70)	2120
	07-08	*	< LOD	< LOD	< LOD	.500 (.400-.600)	2100
	09-10	*	< LOD	< LOD	.200 (.100-.200)	.200 (.200-.300)	2233
Age group							
12-19 years	99-00	*	< LOD	< LOD	.800 (.600-1.10)	1.20 (.800-1.80)	543
	03-04	*	< LOD	< LOD	.400 (<LOD-.600)	.600 (.500-.900)	640
	05-06	*	< LOD	< LOD	.700 (<LOD-1.10)	1.10 (.600-2.70)	640
	07-08	*	< LOD	< LOD	.500 (<LOD-.600)	.600 (.500-.700)	357
	09-10	*	< LOD	.100 (.100-.200)	.200 (.200-.400)	.400 (.200-.500)	364
20 years and older	99-00	*	< LOD	< LOD	< LOD	.600 (<LOD-.900)	1019
	03-04	*	< LOD	< LOD	< LOD	< LOD	1454
	05-06	*	< LOD	< LOD	< LOD	.600 (<LOD-2.10)	1480
	07-08	*	< LOD	< LOD	< LOD	.500 (<LOD-.500)	1743
	09-10	*	< LOD	< LOD	.100 (.100-.200)	.200 (.200-.200)	1869
Gender							
Males	99-00	*	< LOD	< LOD	.500 (<LOD-.600)	.700 (.500-1.00)	743
	03-04	*	< LOD	< LOD	< LOD	.300 (<LOD-.400)	1053
	05-06	*	< LOD	< LOD	.400 (<LOD-1.00)	.800 (<LOD-2.10)	1048
	07-08	*	< LOD	< LOD	< LOD	.600 (.400-.700)	1059
	09-10	*	< LOD	< LOD	.200 (.100-.200)	.200 (.200-.300)	1075
Females	99-00	*	< LOD	< LOD	.500 (<LOD-.700)	.700 (<LOD-1.20)	819
	03-04	*	< LOD	< LOD	< LOD	.400 (.300-.600)	1041
	05-06	*	< LOD	< LOD	< LOD	.600 (<LOD-1.30)	1072
	07-08	*	< LOD	< LOD	< LOD	.500 (.400-.500)	1041
	09-10	*	< LOD	< LOD	.200 (.100-.200)	.200 (.200-.300)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.4, 0.3, 0.4, 0.4, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluoroheptanoic acid (PFHpA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**.500** (<LOD-.900)	**.900** (.500-1.30)	584
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.900)	485
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-1.50)	499
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.500)	391
	09-10	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.300)	461
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.600** (<LOD-1.20)	303
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	538
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-1.80)	544
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.600** (.400-.700)	419
	09-10	*	**< LOD**	**< LOD**	**.100** (.100-.200)	**.200** (.200-.200)	391
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**.400** (<LOD-.600)	**.600** (.500-.900)	519
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.500)	962
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.800** (<LOD-2.10)	935
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.500** (.400-.700)	931
	09-10	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.300)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.4, 0.3, 0.4, 0.4, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluoroheptanoic acid (PFHpA) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	**.140** (.120-.170)	**.220** (.180-.260)	1904
Age group							
12-19 years	11-12	*	< LOD	**.100** (<LOD-.130)	**.160** (.130-.200)	**.190** (.160-.270)	344
20 years and older	11-12	*	< LOD	< LOD	**.140** (.120-.180)	**.220** (.160-.280)	1560
Gender							
Males	11-12	*	< LOD	< LOD	**.140** (.120-.200)	**.220** (.180-.270)	966
Females	11-12	*	< LOD	< LOD	**.140** (.110-.180)	**.200** (.140-.360)	938
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	**.130** (<LOD-.180)	**.170** (.120-.230)	211
Non-Hispanic blacks	11-12	*	< LOD	< LOD	**.130** (.100-.150)	**.180** (.140-.230)	485
Non-Hispanic whites	11-12	*	< LOD	< LOD	**.150** (.120-.190)	**.230** (.160-.290)	666
All Hispanics	11-12	*	< LOD	< LOD	**.140** (.100-.180)	**.190** (.160-.230)	406
Asians	11-12	*	< LOD	< LOD	**.160** (.120-.220)	**.230** (.180-.310)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorohexane sulfonic acid (PFHxS) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**2.13** (1.91-2.38)	**2.10** (1.80-2.30)	**3.40** (3.10-4.00)	**5.80** (5.20-6.90)	**8.70** (7.00-10.0)	1562
	03-04	**1.93** (1.73-2.16)	**1.90** (1.70-2.10)	**3.30** (2.80-3.90)	**5.90** (4.80-7.20)	**8.30** (7.10-9.70)	2094
	05-06	**1.67** (1.42-1.98)	**1.80** (1.50-2.10)	**3.20** (2.60-4.00)	**5.40** (4.40-7.10)	**8.30** (5.80-11.9)	2120
	07-08	**1.95** (1.76-2.17)	**2.00** (1.80-2.10)	**3.50** (3.10-4.00)	**5.90** (4.90-8.30)	**9.80** (6.10-15.2)	2100
	09-10	**1.66** (1.51-1.82)	**1.70** (1.50-1.90)	**3.00** (2.60-3.30)	**4.80** (4.40-5.30)	**6.90** (5.90-7.60)	2233
Age group							
12-19 years	99-00	**2.69** (2.14-3.39)	**2.50** (2.00-3.70)	**5.00** (3.60-6.50)	**8.00** (5.80-12.9)	**12.9** (6.90-16.4)	543
	03-04	**2.44** (2.05-2.90)	**2.40** (1.80-3.20)	**4.90** (4.00-6.30)	**9.50** (6.80-12.5)	**13.3** (9.90-19.6)	640
	05-06	**2.09** (1.74-2.52)	**2.40** (2.00-2.90)	**4.30** (3.70-5.40)	**9.50** (6.40-13.1)	**14.1** (9.80-17.8)	640
	07-08	**2.40** (2.09-2.75)	**2.30** (1.80-2.70)	**4.30** (3.70-5.70)	**9.90** (6.50-12.5)	**15.9** (11.1-21.5)	357
	09-10	**2.03** (1.77-2.33)	**1.90** (1.60-2.10)	**3.80** (3.20-4.20)	**8.10** (6.30-9.70)	**12.3** (8.60-19.0)	364
20 years and older	99-00	**2.05** (1.85-2.27)	**2.00** (1.80-2.30)	**3.30** (3.00-3.70)	**5.40** (4.90-5.90)	**8.20** (6.70-9.50)	1019
	03-04	**1.86** (1.67-2.08)	**1.80** (1.60-2.10)	**3.00** (2.60-3.60)	**5.50** (4.50-6.70)	**7.60** (6.30-9.40)	1454
	05-06	**1.62** (1.37-1.92)	**1.70** (1.50-2.10)	**3.10** (2.50-3.80)	**5.20** (4.20-6.50)	**7.20** (5.10-11.6)	1480
	07-08	**1.90** (1.69-2.13)	**1.90** (1.70-2.10)	**3.30** (2.90-3.90)	**5.80** (4.50-8.00)	**9.00** (5.60-15.0)	1743
	09-10	**1.61** (1.45-1.79)	**1.70** (1.50-1.90)	**2.90** (2.50-3.30)	**4.50** (4.00-5.20)	**6.00** (5.40-7.10)	1869
Gender							
Males	99-00	**2.61** (2.27-3.00)	**2.60** (2.20-3.00)	**4.10** (3.50-4.70)	**6.60** (5.30-9.40)	**10.5** (6.90-15.0)	743
	03-04	**2.17** (1.87-2.51)	**2.10** (1.80-2.40)	**3.40** (2.80-4.50)	**6.10** (4.60-8.10)	**8.50** (6.50-10.5)	1053
	05-06	**2.08** (1.76-2.45)	**2.20** (1.80-2.70)	**3.70** (3.20-4.60)	**6.40** (4.80-9.30)	**9.50** (6.70-13.7)	1048
	07-08	**2.63** (2.36-2.94)	**2.60** (2.40-2.80)	**4.20** (3.80-4.90)	**7.30** (5.50-11.0)	**11.4** (7.10-18.1)	1059
	09-10	**2.21** (1.99-2.46)	**2.20** (1.90-2.50)	**3.40** (3.00-4.00)	**5.50** (5.00-6.40)	**7.80** (6.50-9.90)	1075
Females	99-00	**1.79** (1.56-2.06)	**1.70** (1.50-2.10)	**2.80** (2.30-3.50)	**5.10** (4.10-6.70)	**8.00** (5.70-9.00)	819
	03-04	**1.72** (1.56-1.91)	**1.60** (1.40-1.80)	**2.90** (2.50-3.50)	**5.80** (4.60-7.10)	**8.20** (6.70-10.0)	1041
	05-06	**1.37** (1.15-1.63)	**1.50** (1.20-1.70)	**2.80** (2.20-3.30)	**4.60** (3.90-5.80)	**6.60** (5.60-9.30)	1072
	07-08	**1.46** (1.30-1.64)	**1.40** (1.30-1.50)	**2.60** (2.20-3.10)	**4.70** (3.80-6.10)	**7.50** (5.00-12.5)	1041
	09-10	**1.26** (1.14-1.40)	**1.30** (1.20-1.40)	**2.20** (2.00-2.60)	**4.00** (3.50-4.50)	**5.40** (4.70-6.50)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.3, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorohexane sulfonic acid (PFHxS) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.47** (1.13-1.92)	**1.50** (1.00-2.00)	**2.80** (1.80-3.80)	**4.50** (3.30-6.90)	**6.70** (4.60-9.50)	584
	03-04	**1.42** (1.17-1.72)	**1.50** (1.20-1.70)	**2.30** (1.90-2.90)	**4.30** (3.10-5.10)	**5.50** (4.00-8.90)	485
	05-06	**1.25** (.884-1.76)	**1.60** (1.20-2.10)	**2.80** (2.50-3.40)	**4.30** (3.60-5.20)	**6.00** (4.60-7.20)	499
	07-08	**1.65** (1.46-1.86)	**1.70** (1.40-1.90)	**3.00** (2.70-3.40)	**5.00** (3.70-6.10)	**6.70** (5.20-10.7)	391
	09-10	**1.01** (.835-1.22)	**1.10** (.800-1.30)	**1.80** (1.50-2.20)	**3.10** (2.50-3.70)	**4.00** (3.20-5.30)	461
Non-Hispanic blacks	99-00	**2.14** (1.58-2.89)	**2.10** (1.40-3.00)	**3.40** (2.70-5.00)	**6.70** (3.90-10.7)	**10.7** (6.80-14.3)	303
	03-04	**1.92** (1.62-2.26)	**1.90** (1.60-2.20)	**3.50** (2.80-4.60)	**6.00** (5.00-7.10)	**8.30** (6.30-12.0)	538
	05-06	**1.53** (1.13-2.07)	**1.70** (1.40-2.20)	**3.30** (2.50-4.10)	**5.40** (3.90-7.50)	**7.50** (5.30-11.0)	544
	07-08	**1.98** (1.55-2.52)	**2.10** (1.80-2.50)	**3.90** (2.80-5.40)	**7.90** (4.20-12.5)	**11.1** (5.90-17.2)	419
	09-10	**1.44** (1.26-1.64)	**1.40** (1.20-1.70)	**2.60** (2.10-3.00)	**4.40** (3.80-5.20)	**6.50** (4.60-8.20)	391
Non-Hispanic whites	99-00	**2.30** (2.06-2.56)	**2.30** (1.90-2.60)	**3.60** (3.20-4.20)	**5.90** (5.30-7.00)	**8.40** (7.00-9.70)	519
	03-04	**2.01** (1.77-2.27)	**1.90** (1.70-2.20)	**3.30** (2.80-4.10)	**6.10** (4.70-7.80)	**8.20** (6.90-10.1)	962
	05-06	**1.79** (1.48-2.17)	**1.80** (1.50-2.20)	**3.30** (2.70-4.30)	**5.60** (4.60-8.20)	**9.40** (6.10-13.1)	935
	07-08	**2.13** (1.89-2.41)	**2.10** (1.80-2.40)	**3.70** (3.20-4.20)	**6.40** (5.30-9.00)	**10.5** (6.50-15.6)	931
	09-10	**1.93** (1.77-2.10)	**2.00** (1.80-2.20)	**3.30** (2.90-3.70)	**5.30** (4.80-5.60)	**7.30** (6.20-8.80)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.3, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorohexane sulfonic acid (PFHxS) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.28** (1.15-1.43)	**1.27** (1.11-1.45)	**2.26** (2.01-2.61)	**3.85** (3.28-4.61)	**5.44** (4.61-6.82)	1904
Age group							
12-19 years	11-12	**1.28** (1.08-1.51)	**1.13** (.920-1.45)	**2.17** (1.53-2.79)	**4.53** (2.76-5.72)	**6.45** (4.21-9.34)	344
20 years and older	11-12	**1.28** (1.14-1.43)	**1.28** (1.13-1.47)	**2.29** (2.02-2.62)	**3.76** (3.17-4.61)	**5.05** (4.61-6.44)	1560
Gender							
Males	11-12	**1.68** (1.50-1.89)	**1.73** (1.46-2.03)	**2.75** (2.37-3.28)	**4.46** (3.76-5.09)	**6.90** (4.99-8.59)	966
Females	11-12	**.989** (.876-1.12)	**.970** (.880-1.07)	**1.71** (1.39-2.05)	**2.96** (2.23-4.28)	**4.61** (3.00-5.61)	938
Race/ethnicity							
Mexican Americans	11-12	**.927** (.771-1.12)	**.980** (.690-1.28)	**1.56** (1.22-2.06)	**2.26** (1.95-2.54)	**2.78** (2.26-4.78)	211
Non-Hispanic blacks	11-12	**1.13** (1.03-1.23)	**1.10** (1.01-1.22)	**2.10** (1.84-2.35)	**3.44** (2.86-4.15)	**4.97** (3.68-6.89)	485
Non-Hispanic whites	11-12	**1.46** (1.28-1.66)	**1.41** (1.20-1.69)	**2.50** (2.10-3.00)	**4.30** (3.47-4.99)	**5.62** (4.70-7.60)	666
All Hispanics	11-12	**.904** (.737-1.11)	**.950** (.730-1.23)	**1.66** (1.36-2.06)	**2.54** (2.06-3.15)	**3.59** (2.52-5.42)	406
Asians	11-12	**.942** (.791-1.12)	**.980** (.820-1.20)	**1.69** (1.41-1.94)	**2.62** (2.13-3.50)	**3.72** (2.75-5.98)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorononanoic acid (PFNA) (1999-2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.551** (.456-.666)	**.600** (.500-.700)	**.900** (.700-1.00)	**1.30** (1.00-1.90)	**1.80** (1.30-2.40)	1562
	03-04	**.966** (.816-1.14)	**1.00** (.900-1.10)	**1.50** (1.20-1.80)	**2.30** (1.60-4.30)	**3.20** (1.80-7.70)	2094
	05-06	**1.09** (.909-1.29)	**1.10** (.900-1.20)	**1.70** (1.30-2.10)	**2.60** (1.80-4.20)	**3.60** (2.50-5.70)	2120
	07-08	**1.22** (1.12-1.32)	**1.23** (1.15-1.31)	**1.72** (1.56-1.89)	**2.62** (2.30-2.87)	**3.28** (2.95-3.77)	2100
	09-10	**1.26** (1.11-1.44)	**1.23** (1.07-1.31)	**1.80** (1.48-2.13)	**2.71** (1.97-4.26)	**3.77** (2.30-7.22)	2233
Age group							
12-19 years	99-00	**.473** (.406-.551)	**.500** (.400-.600)	**.700** (.600-.800)	**.900** (.800-1.10)	**1.20** (.900-1.40)	543
	03-04	**.852** (.697-1.04)	**.800** (.700-1.00)	**1.20** (1.00-1.60)	**1.90** (1.20-3.70)	**2.80** (1.30-6.30)	640
	05-06	**.929** (.782-1.10)	**.900** (.800-1.10)	**1.40** (1.10-1.80)	**2.00** (1.60-2.70)	**2.70** (2.10-3.40)	640
	07-08	**1.16** (1.04-1.30)	**1.15** (.980-1.31)	**1.56** (1.31-1.97)	**2.05** (1.64-2.71)	**2.54** (2.13-3.28)	357
	09-10	**1.10** (.950-1.27)	**1.07** (.900-1.23)	**1.48** (1.31-1.80)	**2.21** (1.48-2.95)	**2.62** (1.89-4.84)	364
20 years and older	99-00	**.566** (.464-.690)	**.600** (.500-.700)	**.900** (.700-1.20)	**1.40** (1.00-1.90)	**1.90** (1.40-2.40)	1019
	03-04	**.984** (.835-1.16)	**1.00** (.900-1.10)	**1.50** (1.20-1.80)	**2.40** (1.60-4.40)	**3.40** (1.80-8.40)	1454
	05-06	**1.11** (.929-1.33)	**1.10** (1.00-1.20)	**1.70** (1.30-2.20)	**2.60** (1.80-4.40)	**3.90** (2.50-5.80)	1480
	07-08	**1.23** (1.13-1.33)	**1.23** (1.15-1.31)	**1.72** (1.64-1.89)	**2.62** (2.38-2.95)	**3.36** (3.03-3.77)	1743
	09-10	**1.29** (1.13-1.47)	**1.23** (1.15-1.39)	**1.80** (1.56-2.21)	**2.71** (1.97-4.67)	**3.94** (2.38-8.36)	1869
Gender							
Males	99-00	**.604** (.510-.716)	**.600** (.500-.700)	**.900** (.800-1.10)	**1.30** (1.10-1.80)	**1.70** (1.30-2.40)	743
	03-04	**1.09** (.912-1.30)	**1.10** (.900-1.20)	**1.60** (1.40-1.90)	**2.40** (1.70-5.00)	**4.00** (1.80-8.70)	1053
	05-06	**1.19** (.993-1.43)	**1.20** (1.00-1.30)	**1.80** (1.40-2.50)	**2.90** (1.80-4.60)	**3.90** (2.50-6.70)	1048
	07-08	**1.36** (1.27-1.47)	**1.31** (1.23-1.39)	**1.89** (1.72-2.05)	**2.87** (2.54-3.12)	**3.53** (3.12-4.18)	1059
	09-10	**1.37** (1.17-1.59)	**1.31** (1.15-1.48)	**1.80** (1.56-2.30)	**2.79** (1.89-4.84)	**4.10** (2.21-12.1)	1075
Females	99-00	**.508** (.409-.632)	**.500** (.400-.600)	**.800** (.600-1.00)	**1.30** (.900-2.00)	**1.80** (1.30-2.60)	819
	03-04	**.861** (.721-1.03)	**.900** (.800-1.00)	**1.30** (1.00-1.70)	**2.20** (1.40-3.40)	**3.00** (1.70-6.10)	1041
	05-06	**.992** (.833-1.18)	**.900** (.800-1.10)	**1.50** (1.20-1.90)	**2.40** (1.70-3.50)	**3.10** (2.10-5.70)	1072
	07-08	**1.09** (.985-1.21)	**1.07** (.980-1.23)	**1.56** (1.48-1.72)	**2.21** (1.97-2.54)	**2.79** (2.54-3.53)	1041
	09-10	**1.17** (1.05-1.31)	**1.15** (.980-1.23)	**1.72** (1.39-2.05)	**2.62** (1.97-3.77)	**3.53** (2.30-6.15)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.1, 0.082, and 0.082 respectively.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.82 for Survey periods 2007-2008 and 2009-2010 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorononanoic acid (PFNA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.341** (.292-.398)	**.400** (.300-.400)	**.500** (.400-.700)	**.700** (.600-.900)	**.900** (.700-1.30)	584
	03-04	**.689** (.586-.809)	**.700** (.600-.900)	**1.10** (.900-1.40)	**1.60** (1.30-2.00)	**2.00** (1.60-2.80)	485
	05-06	**.821** (.710-.951)	**.800** (.700-.900)	**1.20** (1.10-1.40)	**1.60** (1.30-2.30)	**2.30** (1.50-3.20)	499
	07-08	**1.10** (.967-1.25)	**1.15** (.980-1.31)	**1.56** (1.39-1.80)	**2.13** (1.80-2.71)	**2.71** (2.13-3.28)	391
	09-10	**.993** (.906-1.09)	**.980** (.900-1.07)	**1.39** (1.31-1.56)	**2.05** (1.80-2.38)	**2.46** (2.21-3.03)	461
Non-Hispanic blacks	99-00	**.764** (.606-.964)	**.700** (.600-1.00)	**1.30** (.800-1.80)	**1.90** (1.50-2.50)	**2.50** (1.90-2.90)	303
	03-04	**1.14** (.834-1.54)	**1.10** (.900-1.40)	**1.70** (1.20-2.90)	**3.20** (1.50-6.50)	**4.70** (2.10-9.30)	538
	05-06	**1.17** (.916-1.50)	**1.20** (.900-1.40)	**1.60** (1.30-2.50)	**2.60** (1.70-5.60)	**4.40** (2.40-8.20)	544
	07-08	**1.35** (1.23-1.48)	**1.39** (1.23-1.48)	**1.89** (1.72-2.13)	**2.79** (2.30-3.36)	**3.36** (2.79-4.67)	419
	09-10	**1.42** (1.29-1.56)	**1.39** (1.23-1.56)	**1.97** (1.80-2.30)	**2.79** (2.38-3.36)	**3.36** (2.62-4.84)	391
Non-Hispanic whites	99-00	**.566** (.467-.687)	**.600** (.500-.700)	**.900** (.700-1.10)	**1.30** (1.00-1.90)	**1.70** (1.30-2.30)	519
	03-04	**.963** (.826-1.12)	**.900** (.900-1.10)	**1.50** (1.20-1.70)	**2.30** (1.60-3.60)	**3.00** (1.80-6.20)	962
	05-06	**1.10** (.914-1.31)	**1.10** (.900-1.20)	**1.70** (1.30-2.10)	**2.60** (1.80-4.20)	**3.50** (2.40-5.70)	935
	07-08	**1.22** (1.10-1.34)	**1.23** (1.15-1.31)	**1.72** (1.48-1.89)	**2.54** (2.13-3.03)	**3.20** (2.79-3.85)	931
	09-10	**1.28** (1.08-1.51)	**1.23** (1.07-1.39)	**1.80** (1.48-2.21)	**2.62** (1.80-5.08)	**3.85** (2.05-10.8)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.1, 0.082, and 0.082 respectively.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.82 for Survey periods 2007-2008 and 2009-2010 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorononanoic acid (PFNA) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.881** (.801-.968)	**.860** (.750-.960)	**1.30** (1.13-1.45)	**1.96** (1.68-2.21)	**2.54** (2.28-2.89)	1904
Age group							
12-19 years	11-12	**.741** (.638-.861)	**.680** (.620-.810)	**1.00** (.800-1.33)	**1.67** (1.12-2.06)	**2.06** (1.51-3.07)	344
20 years and older	11-12	**.903** (.823-.992)	**.890** (.800-.980)	**1.34** (1.16-1.48)	**2.00** (1.71-2.33)	**2.64** (2.37-3.03)	1560
Gender							
Males	11-12	**.946** (.836-1.07)	**.930** (.810-1.09)	**1.36** (1.18-1.52)	**1.89** (1.61-2.37)	**2.57** (2.14-3.12)	966
Females	11-12	**.824** (.762-.890)	**.770** (.700-.870)	**1.19** (1.00-1.44)	**2.00** (1.69-2.28)	**2.52** (2.20-2.76)	938
Race/ethnicity							
Mexican Americans	11-12	**.810** (.631-1.04)	**.790** (.580-1.10)	**1.17** (.840-1.66)	**1.74** (1.19-2.47)	**2.36** (1.66-2.85)	211
Non-Hispanic blacks	11-12	**.939** (.842-1.05)	**.950** (.870-1.00)	**1.35** (1.18-1.59)	**2.03** (1.60-3.03)	**3.12** (1.89-5.08)	485
Non-Hispanic whites	11-12	**.864** (.766-.975)	**.850** (.710-.980)	**1.26** (1.04-1.45)	**1.83** (1.54-2.21)	**2.37** (2.00-3.14)	666
All Hispanics	11-12	**.850** (.699-1.03)	**.840** (.660-1.00)	**1.21** (.970-1.67)	**1.99** (1.51-2.53)	**2.53** (2.07-2.85)	406
Asians	11-12	**1.18** (.996-1.40)	**1.18** (.970-1.49)	**1.94** (1.56-2.38)	**2.96** (2.52-3.50)	**3.72** (3.04-4.31)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.082.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctanoic acid (PFOA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**5.21** (4.72-5.74)	**5.20** (4.80-5.90)	**6.90** (6.30-7.80)	**9.40** (8.20-11.1)	**11.9** (10.9-13.5)	1562
	03-04	**3.95** (3.65-4.27)	**4.10** (3.80-4.40)	**5.80** (5.30-6.40)	**7.80** (6.70-9.60)	**9.80** (7.40-14.1)	2094
	05-06	**3.92** (3.48-4.42)	**4.20** (3.80-4.50)	**6.20** (5.40-7.20)	**9.00** (7.40-11.2)	**11.3** (8.80-14.5)	2120
	07-08	**4.12** (4.01-4.24)	**4.30** (4.20-4.50)	**5.90** (5.70-6.20)	**7.90** (7.50-8.30)	**9.60** (8.90-10.1)	2100
	09-10	**3.07** (2.81-3.36)	**3.20** (2.90-3.50)	**4.60** (4.10-5.10)	**6.00** (5.30-7.20)	**7.50** (6.20-9.70)	2233
Age group							
12-19 years	99-00	**5.46** (4.98-5.99)	**5.60** (4.90-6.10)	**6.90** (6.20-7.70)	**9.40** (7.70-11.0)	**11.6** (10.2-12.5)	543
	03-04	**3.89** (3.47-4.35)	**4.00** (3.50-4.50)	**5.40** (4.60-6.10)	**7.00** (5.60-9.20)	**8.60** (5.90-12.6)	640
	05-06	**3.59** (3.26-3.96)	**3.80** (3.30-4.20)	**5.40** (4.60-5.90)	**6.90** (6.30-7.90)	**8.40** (7.30-10.1)	640
	07-08	**3.91** (3.71-4.12)	**4.00** (3.70-4.40)	**5.00** (4.70-5.50)	**6.10** (5.70-6.70)	**7.30** (6.20-8.00)	357
	09-10	**2.74** (2.46-3.05)	**2.90** (2.60-3.10)	**3.80** (3.30-4.20)	**4.80** (4.10-5.30)	**5.00** (4.40-7.20)	364
20 years and older	99-00	**5.16** (4.66-5.72)	**5.20** (4.70-5.70)	**7.00** (6.30-7.80)	**9.40** (8.20-11.1)	**12.0** (10.8-14.0)	1019
	03-04	**3.96** (3.67-4.27)	**4.10** (3.90-4.40)	**5.90** (5.40-6.50)	**7.80** (6.80-9.60)	**9.90** (7.60-14.2)	1454
	05-06	**3.97** (3.51-4.49)	**4.20** (3.80-4.60)	**6.40** (5.40-7.50)	**9.30** (7.40-11.9)	**11.6** (9.00-14.8)	1480
	07-08	**4.15** (4.02-4.30)	**4.30** (4.20-4.60)	**6.10** (5.80-6.50)	**8.10** (7.70-8.70)	**9.80** (9.00-10.4)	1743
	09-10	**3.12** (2.84-3.43)	**3.30** (3.00-3.60)	**4.70** (4.20-5.30)	**6.40** (5.40-7.50)	**7.70** (6.30-10.2)	1869
Gender							
Males	99-00	**5.71** (5.17-6.31)	**6.00** (5.40-6.50)	**7.70** (6.80-8.70)	**10.6** (9.00-11.8)	**12.1** (11.2-13.1)	743
	03-04	**4.47** (4.07-4.91)	**4.60** (4.30-5.00)	**6.30** (5.70-7.20)	**8.40** (6.80-12.5)	**10.7** (7.40-17.5)	1053
	05-06	**4.69** (4.23-5.20)	**4.90** (4.40-5.40)	**7.20** (6.10-8.00)	**9.90** (8.00-12.2)	**12.2** (9.60-15.2)	1048
	07-08	**4.80** (4.55-5.06)	**4.90** (4.60-5.20)	**6.70** (6.30-7.10)	**8.70** (8.10-9.30)	**10.1** (9.50-11.1)	1059
	09-10	**3.53** (3.22-3.87)	**3.70** (3.40-4.00)	**4.90** (4.50-5.40)	**6.80** (5.40-8.00)	**7.90** (6.40-10.2)	1075
Females	99-00	**4.80** (4.32-5.34)	**4.70** (4.40-5.20)	**6.30** (5.60-7.10)	**8.30** (7.50-9.90)	**11.3** (9.20-14.4)	819
	03-04	**3.50** (3.21-3.82)	**3.60** (3.30-3.90)	**5.20** (4.70-5.80)	**7.10** (6.30-8.20)	**8.60** (7.40-10.6)	1041
	05-06	**3.31** (2.89-3.79)	**3.50** (3.10-4.00)	**5.20** (4.40-6.00)	**7.90** (6.10-9.70)	**10.1** (7.50-14.2)	1072
	07-08	**3.55** (3.38-3.73)	**3.70** (3.50-3.90)	**5.20** (4.80-5.60)	**7.00** (6.50-7.50)	**8.30** (7.20-9.90)	1041
	09-10	**2.69** (2.45-2.96)	**2.70** (2.50-3.00)	**4.10** (3.60-4.70)	**5.60** (5.10-6.50)	**6.90** (5.80-8.40)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.2, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctanoic acid (PFOA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**3.89** (3.58-4.21)	**4.20** (3.80-4.60)	**5.80** (5.20-6.30)	**7.70** (6.40-8.00)	**8.20** (7.70-8.90)	584
	03-04	**3.11** (2.84-3.40)	**3.30** (3.10-3.70)	**4.50** (4.20-5.20)	**6.70** (5.70-7.30)	**7.60** (6.70-10.5)	485
	05-06	**2.62** (2.33-2.95)	**2.80** (2.50-3.30)	**4.30** (3.80-4.70)	**5.80** (5.30-6.70)	**7.40** (5.90-8.10)	499
	07-08	**3.54** (3.35-3.75)	**3.80** (3.50-4.00)	**5.20** (4.90-5.60)	**6.60** (6.20-7.10)	**7.60** (6.80-9.00)	391
	09-10	**2.26** (2.00-2.54)	**2.40** (2.10-2.60)	**3.60** (3.10-3.80)	**4.60** (4.00-5.30)	**5.40** (4.50-6.60)	461
Non-Hispanic blacks	99-00	**4.78** (4.10-5.57)	**4.80** (3.80-5.90)	**6.40** (5.90-7.50)	**9.00** (7.40-11.5)	**11.5** (9.20-14.0)	303
	03-04	**3.37** (2.99-3.79)	**3.70** (3.20-4.20)	**5.20** (4.40-6.30)	**7.70** (5.30-11.6)	**9.60** (6.50-13.9)	538
	05-06	**3.27** (2.61-4.08)	**3.70** (3.00-4.20)	**5.50** (4.40-6.80)	**8.10** (6.00-11.3)	**10.4** (7.80-12.3)	544
	07-08	**3.86** (3.57-4.16)	**4.00** (3.50-4.30)	**5.90** (5.20-6.50)	**7.80** (7.10-8.70)	**9.20** (8.50-10.1)	419
	09-10	**2.74** (2.47-3.04)	**2.80** (2.60-3.00)	**4.00** (3.70-4.40)	**5.50** (5.00-6.20)	**6.70** (5.60-9.40)	391
Non-Hispanic whites	99-00	**5.61** (5.06-6.23)	**5.60** (4.90-6.20)	**7.30** (6.50-8.20)	**10.3** (8.40-12.1)	**13.0** (11.0-14.9)	519
	03-04	**4.18** (3.85-4.53)	**4.30** (3.90-4.70)	**6.00** (5.50-6.70)	**7.90** (7.20-9.20)	**9.90** (7.60-13.3)	962
	05-06	**4.27** (3.80-4.81)	**4.40** (4.00-5.00)	**6.60** (5.60-7.80)	**9.60** (7.40-12.2)	**11.6** (8.80-14.8)	935
	07-08	**4.38** (4.20-4.56)	**4.60** (4.30-4.70)	**6.10** (5.80-6.60)	**8.20** (7.80-8.80)	**9.90** (9.30-10.6)	931
	09-10	**3.36** (3.06-3.69)	**3.50** (3.20-3.90)	**4.80** (4.40-5.40)	**6.60** (5.40-7.80)	**7.80** (6.20-10.5)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.2, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctanoic acid (PFOA) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**2.08** (1.95-2.22)	**2.08** (1.96-2.26)	**3.03** (2.76-3.27)	**4.35** (3.82-4.85)	**5.68** (5.02-6.49)	1904
Age group							
12-19 years	11-12	**1.80** (1.71-1.91)	**1.74** (1.67-1.89)	**2.41** (2.17-2.62)	**2.93** (2.68-3.19)	**3.59** (2.93-4.25)	344
20 years and older	11-12	**2.12** (1.98-2.28)	**2.16** (2.01-2.33)	**3.15** (2.90-3.36)	**4.64** (3.93-5.25)	**5.94** (5.34-7.45)	1560
Gender							
Males	11-12	**2.37** (2.22-2.53)	**2.38** (2.26-2.56)	**3.25** (3.00-3.56)	**4.61** (4.11-5.02)	**5.62** (4.85-6.20)	966
Females	11-12	**1.84** (1.68-2.01)	**1.78** (1.62-1.98)	**2.65** (2.34-3.14)	**3.91** (3.36-4.99)	**5.68** (4.33-8.45)	938
Race/ethnicity							
Mexican Americans	11-12	**1.66** (1.37-2.02)	**1.71** (1.32-2.23)	**2.43** (1.98-2.98)	**3.38** (2.43-4.48)	**4.08** (2.98-6.15)	211
Non-Hispanic blacks	11-12	**1.80** (1.71-1.90)	**1.94** (1.76-2.09)	**2.82** (2.65-2.95)	**3.94** (3.51-4.40)	**5.11** (4.40-5.79)	485
Non-Hispanic whites	11-12	**2.25** (2.05-2.47)	**2.25** (1.98-2.48)	**3.21** (2.90-3.50)	**4.68** (3.95-5.35)	**6.20** (5.34-7.74)	666
All Hispanics	11-12	**1.70** (1.48-1.95)	**1.79** (1.59-1.95)	**2.46** (2.15-2.91)	**3.60** (2.95-4.48)	**4.70** (3.87-5.94)	406
Asians	11-12	**2.08** (1.83-2.36)	**2.21** (2.04-2.27)	**2.92** (2.55-3.45)	**4.66** (3.42-5.79)	**5.79** (4.93-8.91)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctane sulfonic acid (PFOS) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**30.4** (27.1-33.9)	**30.2** (27.8-33.9)	**43.7** (37.5-47.3)	**57.0** (50.2-71.7)	**75.7** (58.1-97.5)	1562
	03-04	**20.7** (19.2-22.3)	**21.2** (19.8-22.4)	**30.0** (27.5-33.0)	**41.3** (35.6-50.0)	**54.6** (44.0-66.5)	2094
	05-06	**17.1** (16.0-18.2)	**17.5** (16.8-18.6)	**27.2** (24.9-29.6)	**39.4** (34.9-43.1)	**47.5** (42.7-56.8)	2120
	07-08	**13.2** (12.2-14.2)	**13.6** (12.8-14.7)	**21.0** (18.9-23.3)	**32.6** (29.4-36.3)	**40.5** (35.4-47.4)	2100
	09-10	**9.32** (8.13-10.7)	**9.70** (8.50-10.8)	**14.8** (12.9-17.3)	**23.7** (18.3-30.2)	**32.0** (22.6-48.5)	2233
Age group							
12-19 years	99-00	**29.1** (26.2-32.4)	**29.5** (26.9-34.2)	**39.0** (35.9-45.0)	**52.7** (46.0-56.2)	**57.4** (52.7-66.5)	543
	03-04	**19.3** (17.5-21.4)	**19.9** (17.8-22.0)	**27.1** (23.7-30.2)	**36.5** (28.6-45.6)	**42.6** (35.1-52.1)	640
	05-06	**15.0** (14.3-15.7)	**14.9** (13.6-16.6)	**22.7** (19.7-24.9)	**30.6** (27.8-34.1)	**38.5** (33.0-44.6)	640
	07-08	**11.3** (10.3-12.3)	**11.3** (10.3-13.0)	**15.9** (15.1-17.7)	**21.7** (17.7-28.2)	**28.0** (22.0-32.2)	357
	09-10	**6.84** (5.81-8.06)	**6.90** (6.00-8.40)	**10.7** (8.90-12.5)	**14.4** (12.4-18.1)	**18.1** (13.5-26.0)	364
20 years and older	99-00	**30.6** (27.1-34.4)	**30.3** (27.9-33.9)	**44.4** (37.9-48.0)	**58.0** (50.1-75.7)	**78.0** (59.9-107)	1019
	03-04	**20.9** (19.3-22.5)	**21.4** (19.8-22.8)	**30.4** (28.1-33.0)	**42.7** (35.7-53.3)	**57.8** (45.7-69.4)	1454
	05-06	**17.4** (16.2-18.7)	**18.0** (17.1-19.4)	**27.8** (25.3-30.8)	**40.2** (35.6-44.5)	**49.6** (42.8-60.7)	1480
	07-08	**13.5** (12.4-14.6)	**14.0** (13.0-15.5)	**21.7** (19.5-24.6)	**33.9** (29.9-39.0)	**42.8** (37.3-50.3)	1743
	09-10	**9.72** (8.45-11.2)	**10.1** (8.90-11.2)	**15.7** (13.4-18.4)	**25.3** (19.3-32.9)	**34.1** (23.4-52.7)	1869
Gender							
Males	99-00	**33.4** (29.6-37.6)	**34.9** (31.1-37.9)	**46.3** (41.2-51.6)	**58.4** (50.2-78.3)	**78.3** (58.0-108)	743
	03-04	**23.2** (21.1-25.6)	**23.9** (22.4-25.5)	**32.2** (28.8-35.9)	**45.3** (35.5-62.7)	**62.7** (43.8-81.8)	1053
	05-06	**20.5** (19.4-21.8)	**21.3** (20.0-22.5)	**31.4** (27.9-33.7)	**43.3** (38.7-49.7)	**54.3** (43.5-80.7)	1048
	07-08	**16.3** (15.0-17.7)	**17.0** (15.7-17.8)	**23.9** (21.6-26.9)	**36.4** (33.5-41.1)	**45.3** (40.4-53.1)	1059
	09-10	**11.5** (9.93-13.3)	**11.8** (10.6-12.9)	**16.8** (14.3-20.4)	**25.7** (19.4-39.7)	**37.4** (22.5-72.3)	1075
Females	99-00	**28.0** (24.6-31.8)	**27.8** (24.5-30.2)	**39.0** (32.7-46.0)	**55.4** (46.3-70.2)	**75.7** (56.1-98.4)	819
	03-04	**18.4** (17.0-20.0)	**18.2** (16.9-19.8)	**27.4** (23.8-30.2)	**39.8** (34.4-42.6)	**46.6** (42.3-61.5)	1041
	05-06	**14.4** (13.3-15.4)	**14.6** (13.5-15.9)	**23.3** (21.1-25.3)	**34.2** (30.6-37.7)	**42.8** (38.0-46.5)	1072
	07-08	**10.7** (9.70-11.7)	**10.7** (9.80-11.7)	**17.2** (15.4-19.1)	**28.7** (21.7-32.5)	**33.6** (29.9-41.6)	1041
	09-10	**7.65** (6.73-8.71)	**7.80** (6.70-9.00)	**12.0** (10.8-14.4)	**21.1** (16.4-26.9)	**28.8** (22.3-34.1)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctane sulfonic acid (PFOS) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**22.7** (19.8-25.9)	**23.7** (20.8-27.2)	**33.0** (27.9-39.7)	**41.9** (36.7-54.5)	**53.6** (41.3-72.0)	584
	03-04	**14.7** (13.0-16.6)	**15.9** (13.4-17.9)	**21.2** (18.7-23.5)	**28.1** (24.1-35.0)	**35.5** (28.9-38.5)	485
	05-06	**11.2** (10.3-12.2)	**11.6** (9.90-13.3)	**17.2** (15.4-19.3)	**24.9** (22.0-30.3)	**31.9** (26.4-40.6)	499
	07-08	**10.6** (9.47-11.9)	**10.8** (9.70-12.2)	**17.1** (14.9-19.2)	**26.3** (20.7-30.4)	**31.5** (25.7-36.1)	391
	09-10	**6.23** (5.28-7.36)	**6.10** (5.10-8.10)	**11.2** (8.50-14.1)	**16.8** (14.9-18.8)	**20.4** (17.5-22.7)	461
Non-Hispanic blacks	99-00	**32.9** (26.0-41.6)	**32.0** (23.9-45.8)	**50.6** (37.4-62.2)	**69.3** (60.9-75.9)	**81.5** (68.0-129)	303
	03-04	**21.6** (19.1-24.4)	**22.1** (19.6-24.9)	**32.3** (28.1-36.2)	**43.8** (37.2-57.3)	**57.7** (43.8-78.4)	538
	05-06	**18.4** (15.6-21.8)	**19.0** (16.7-22.3)	**27.6** (24.3-35.5)	**45.9** (34.4-58.1)	**57.9** (45.0-84.4)	544
	07-08	**15.0** (12.6-17.8)	**15.2** (12.9-17.7)	**25.8** (21.0-33.3)	**42.7** (31.5-57.3)	**57.3** (43.4-79.2)	419
	09-10	**9.11** (7.93-10.5)	**9.50** (8.20-11.2)	**16.0** (13.4-17.4)	**23.0** (20.5-26.1)	**28.7** (25.7-39.7)	391
Non-Hispanic whites	99-00	**32.3** (29.5-35.3)	**32.8** (29.5-36.0)	**45.1** (40.4-47.4)	**56.3** (51.7-70.0)	**78.0** (58.0-98.4)	519
	03-04	**21.4** (19.9-23.1)	**22.0** (20.5-23.0)	**30.2** (27.7-33.3)	**41.7** (35.7-49.6)	**56.3** (44.0-70.0)	962
	05-06	**18.1** (17.1-19.1)	**18.6** (17.3-19.8)	**28.3** (26.1-30.8)	**39.7** (35.6-43.3)	**46.6** (42.7-54.3)	935
	07-08	**13.7** (12.7-14.8)	**14.3** (13.2-15.5)	**21.1** (18.7-23.7)	**32.9** (29.7-36.0)	**40.4** (36.1-44.9)	931
	09-10	**10.2** (8.69-11.9)	**10.4** (9.20-11.5)	**15.6** (13.0-18.7)	**24.7** (17.5-35.1)	**33.1** (20.7-56.7)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctane sulfonic acid (PFOS) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**6.31** (5.84-6.82)	**6.53** (5.99-7.13)	**10.5** (9.78-11.1)	**15.7** (14.7-17.5)	**21.7** (19.3-23.9)	1904
Age group							
12-19 years	11-12	**4.16** (3.70-4.68)	**4.11** (3.48-4.65)	**5.90** (5.14-7.25)	**9.05** (6.49-10.8)	**10.8** (8.52-14.2)	344
20 years and older	11-12	**6.71** (6.24-7.20)	**7.07** (6.65-7.52)	**11.0** (10.4-11.9)	**17.0** (15.3-18.5)	**22.7** (20.4-24.8)	1560
Gender							
Males	11-12	**7.91** (7.19-8.70)	**8.31** (7.35-9.15)	**12.5** (11.4-13.5)	**19.3** (15.7-21.4)	**24.1** (22.2-28.5)	966
Females	11-12	**5.10** (4.70-5.53)	**5.27** (4.67-5.64)	**8.57** (7.87-9.30)	**12.5** (11.0-14.9)	**17.5** (14.9-20.5)	938
Race/ethnicity							
Mexican Americans	11-12	**4.79** (4.07-5.64)	**5.18** (3.92-6.33)	**7.91** (6.18-9.48)	**10.5** (8.50-12.6)	**12.1** (10.0-14.4)	211
Non-Hispanic blacks	11-12	**6.35** (5.41-7.46)	**6.57** (5.71-7.65)	**11.3** (9.74-13.9)	**21.8** (13.9-31.3)	**30.7** (21.6-45.1)	485
Non-Hispanic whites	11-12	**6.71** (6.15-7.32)	**6.83** (6.07-7.73)	**10.7** (9.89-12.2)	**15.7** (14.8-18.1)	**21.3** (18.7-23.5)	666
All Hispanics	11-12	**4.63** (3.86-5.55)	**5.18** (4.41-6.19)	**8.10** (6.64-9.78)	**11.0** (9.96-12.6)	**13.4** (11.5-16.1)	406
Asians	11-12	**7.10** (5.80-8.68)	**7.53** (5.96-9.25)	**12.6** (10.8-17.0)	**24.6** (19.1-33.3)	**35.1** (26.4-42.3)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctane sulfonamide (PFOSA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.355** (.296-.426)	**.400** (.300-.400)	**.700** (.500-.800)	**1.00** (.900-1.40)	**1.40** (1.00-2.00)	1562
	03-04	*	**.100** (.100-.100)	**.100** (.100-.100)	**.300** (.200-.300)	**.300** (.300-.400)	2094
	05-06	*	**< LOD**	**.100** (<LOD-.200)	**.200** (.200-.300)	**.300** (.200-.500)	2120
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2100
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2233
Age group							
12-19 years	99-00	**.429** (.370-.498)	**.400** (.400-.500)	**.700** (.700-.900)	**1.10** (.900-1.40)	**1.60** (1.10-2.90)	543
	03-04	*	**.100** (.100-.100)	**.100** (.100-.200)	**.300** (.200-.300)	**.300** (.200-.500)	640
	05-06	*	**< LOD**	**< LOD**	**.200** (.100-.300)	**.300** (.200-.500)	640
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	364
20 years and older	99-00	**.344** (.283-.418)	**.300** (.300-.400)	**.600** (.500-.800)	**1.00** (.800-1.40)	**1.40** (1.00-2.00)	1019
	03-04	*	**.100** (.100-.100)	**.100** (.100-.100)	**.300** (.200-.300)	**.300** (.300-.400)	1454
	05-06	*	**< LOD**	**.100** (<LOD-.200)	**.200** (.200-.300)	**.300** (.200-.500)	1480
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1743
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1869
Gender							
Males	99-00	**.351** (.289-.426)	**.400** (.300-.400)	**.600** (.500-.700)	**.900** (.700-1.30)	**1.30** (.900-1.90)	743
	03-04	*	**.100** (.100-.100)	**.100** (.100-.100)	**.300** (.200-.300)	**.300** (.200-.500)	1053
	05-06	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.300)	**.300** (.200-.600)	1048
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1059
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1075
Females	99-00	**.358** (.298-.431)	**.300** (.300-.500)	**.700** (.500-.900)	**1.10** (.900-1.40)	**1.50** (1.20-2.00)	819
	03-04	*	**.100** (.100-.100)	**.100** (.100-.200)	**.300** (.200-.300)	**.300** (.300-.500)	1041
	05-06	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.400)	1072
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.05, 0.1, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctane sulfonamide (PFOSA) (1999 -2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.285** (.245-.332)	**.300** (.200-.400)	**.500** (.400-.600)	**.800** (.700-1.00)	**1.10** (.800-1.60)	584
	03-04	*	**.100** (.100-.100)	**.100** (.100-.100)	**.100** (.100-.100)	**.200** (.100-.300)	485
	05-06	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.200** (<LOD-5.00)	499
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	461
Non-Hispanic blacks	99-00	**.347** (.289-.417)	**.300** (.300-.400)	**.600** (.500-.800)	**1.00** (.700-1.70)	**1.70** (.900-2.60)	303
	03-04	*	**.100** (.100-.100)	**.100** (.100-.200)	**.300** (.200-.300)	**.300** (.200-.500)	538
	05-06	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.400)	544
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	419
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
Non-Hispanic whites	99-00	**.382** (.305-.479)	**.400** (.300-.500)	**.700** (.600-.900)	**1.10** (.900-1.40)	**1.50** (1.10-2.00)	519
	03-04	*	**.100** (.100-.100)	**.100** (.100-.200)	**.300** (.200-.300)	**.300** (.300-.500)	962
	05-06	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.300)	**.300** (.200-.500)	935
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	931
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.05, 0.1, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctane sulfonamide (PFOSA) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1904
Age group							
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	344
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1560
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	966
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	938
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	211
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	666
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	406
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum 2-(N-Ethyl-perfluorooctane sulfonamido) acetic acid (Et-PFOSA-AcOH) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.642** (.596-.691)	**.600** (.500-.700)	**1.10** (1.00-1.20)	**1.60** (1.50-1.80)	**2.30** (1.90-2.70)	1562
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2094
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.300)	2120
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2100
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	2233
Age group							
12-19 years	99-00	**.826** (.764-.893)	**.800** (.700-.800)	**1.20** (1.10-1.30)	**1.70** (1.50-2.00)	**2.40** (1.90-3.30)	543
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	640
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.200** (<LOD-.400)	640
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	364
20 years and older	99-00	**.614** (.569-.663)	**.600** (.500-.700)	**1.00** (.900-1.10)	**1.60** (1.50-1.80)	**2.30** (1.80-2.70)	1019
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1454
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.300)	1480
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1743
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	1869
Gender							
Males	99-00	**.619** (.572-.671)	**.600** (.500-.700)	**1.00** (.900-1.10)	**1.50** (1.30-1.80)	**1.90** (1.60-2.90)	743
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1053
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.300)	1048
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1059
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	1075
Females	99-00	**.662** (.599-.732)	**.700** (.500-.700)	**1.10** (1.00-1.20)	**1.70** (1.50-2.20)	**2.50** (2.00-2.80)	819
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.300)	1072
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum 2-(N-Ethyl-perfluorooctane sulfonamido) acetic acid (Et-PFOSA-AcOH) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.577** (.477-.698)	**.600** (.400-.700)	**1.00** (.800-1.20)	**1.70** (1.30-2.00)	**2.50** (1.90-3.00)	584
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	485
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	499
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	461
Non-Hispanic blacks	99-00	**.555** (.476-.646)	**.500** (.500-.600)	**.900** (.700-1.00)	**1.50** (1.20-1.90)	**2.20** (1.40-3.20)	303
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.400** (<LOD-.500)	538
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	544
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	419
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
Non-Hispanic whites	99-00	**.660** (.606-.717)	**.700** (.600-.700)	**1.10** (1.00-1.20)	**1.70** (1.50-1.90)	**2.40** (1.90-2.80)	519
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	962
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.400)	935
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	931
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.200)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum 2-(N-Ethyl-perfluorooctane sulfonamido) acetic acid (Et-PFOSA-AcOH) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.110** (<LOD-.130)	1904
Age group							
12-19 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	344
20 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.110** (<LOD-.150)	1560
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.110** (<LOD-.140)	966
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.130)	938
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.160)	211
Non-Hispanic blacks	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	485
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.120** (<LOD-.140)	666
All Hispanics	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	406
Asians	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.110** (<LOD-.200)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum 2-(N-Methyl-perfluorooctane sulfonamido) acetic acid (Me-PFOSA-AcOH) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.846** (.738-.970)	**.870** (.780-.960)	**1.40** (1.13-1.66)	**2.18** (1.83-2.62)	**2.79** (2.44-3.23)	1562
	03-04	*	**< LOD**	**.610** (<LOD-.610)	**.870** (.780-.960)	**1.13** (.960-1.31)	2094
	05-06	**.410** (.372-.451)	**.440** (.350-.440)	**.700** (.610-.780)	**1.22** (1.13-1.22)	**1.57** (1.48-1.74)	2120
	07-08	**.303** (.277-.330)	**.300** (.300-.300)	**.500** (.400-.600)	**1.00** (.800-1.00)	**1.30** (1.20-1.40)	2100
	09-10	**.198** (.184-.213)	**.200** (.200-.200)	**.300** (.300-.300)	**.700** (.600-.700)	**1.00** (.900-1.00)	2233
Age group							
12-19 years	99-00	**1.17** (1.03-1.34)	**1.22** (1.05-1.31)	**1.83** (1.31-2.18)	**2.70** (2.18-3.05)	**3.23** (2.79-4.10)	543
	03-04	*	**< LOD**	**.610** (<LOD-.700)	**.960** (.780-1.13)	**1.31** (1.05-1.57)	640
	05-06	**.432** (.380-.490)	**.440** (.350-.520)	**.780** (.610-.870)	**1.13** (.960-1.31)	**1.48** (1.13-1.66)	640
	07-08	**.340** (.305-.379)	**.300** (.300-.400)	**.600** (.500-.600)	**1.00** (.800-1.50)	**1.60** (1.00-2.00)	357
	09-10	**.235** (.203-.273)	**.300** (.200-.300)	**.400** (.300-.500)	**.700** (.500-.900)	**.900** (.600-1.70)	364
20 years and older	99-00	**.800** (.693-.923)	**.780** (.700-.960)	**1.31** (1.13-1.57)	**2.09** (1.74-2.44)	**2.70** (2.27-3.14)	1019
	03-04	*	**< LOD**	**.610** (<LOD-.610)	**.870** (.780-.960)	**1.05** (.960-1.40)	1454
	05-06	**.406** (.369-.448)	**.440** (.350-.440)	**.700** (.610-.780)	**1.22** (1.13-1.31)	**1.66** (1.48-1.74)	1480
	07-08	**.297** (.270-.327)	**.300** (.300-.300)	**.500** (.400-.600)	**1.00** (.800-1.00)	**1.20** (1.10-1.40)	1743
	09-10	**.193** (.178-.210)	**.200** (.200-.200)	**.300** (.300-.300)	**.700** (.600-.800)	**1.00** (.900-1.00)	1869
Gender							
Males	99-00	**.885** (.756-1.04)	**.870** (.780-1.05)	**1.40** (1.13-1.74)	**2.27** (2.01-2.79)	**2.79** (2.44-3.66)	743
	03-04	*	**< LOD**	**.610** (<LOD-.610)	**.960** (.780-1.05)	**1.13** (.960-1.48)	1053
	05-06	**.435** (.400-.472)	**.440** (.350-.440)	**.780** (.700-.870)	**1.22** (1.13-1.31)	**1.66** (1.40-1.74)	1048
	07-08	**.307** (.281-.334)	**.300** (.300-.300)	**.500** (.400-.600)	**.900** (.800-1.00)	**1.30** (1.10-1.40)	1059
	09-10	**.200** (.187-.214)	**.200** (.200-.200)	**.300** (.300-.400)	**.700** (.600-.800)	**1.00** (.800-1.10)	1075
Females	99-00	**.813** (.717-.923)	**.780** (.700-.960)	**1.31** (1.13-1.66)	**2.01** (1.74-2.35)	**2.62** (2.27-3.23)	819
	03-04	*	**< LOD**	**< LOD**	**.870** (.780-.960)	**.960** (.870-1.57)	1041
	05-06	**.387** (.342-.438)	**.350** (.350-.440)	**.700** (.610-.780)	**1.13** (1.05-1.31)	**1.57** (1.40-1.83)	1072
	07-08	**.299** (.267-.334)	**.300** (.300-.300)	**.500** (.400-.600)	**1.00** (.800-1.10)	**1.30** (1.10-1.70)	1041
	09-10	**.196** (.178-.216)	**.200** (.200-.200)	**.300** (.300-.300)	**.600** (.500-.800)	**1.00** (.800-1.00)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.174, 0.523, 0.174, 0.174, and 0.087 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum 2-(N-Methyl-perfluorooctane sulfonamido) acetic acid (Me-PFOSA-AcOH) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.668** (.545-.817)	**.700** (.520-.780)	**1.13** (.870-1.31)	**1.83** (1.40-2.35)	**2.35** (1.74-3.92)	584
	03-04	*	**< LOD**	**< LOD**	**.610** (<LOD-.780)	**.780** (<LOD-1.13)	485
	05-06	**.292** (.245-.348)	**.260** (.260-.350)	**.440** (.350-.700)	**.780** (.610-1.05)	**1.05** (.870-1.22)	499
	07-08	*	**.200** (<LOD-.200)	**.300** (.300-.300)	**.500** (.400-.800)	**.800** (.500-1.10)	391
	09-10	**.139** (.118-.163)	**.100** (.100-.200)	**.300** (.200-.300)	**.500** (.400-.600)	**.700** (.500-1.00)	461
Non-Hispanic blacks	99-00	**.989** (.853-1.15)	**1.05** (.780-1.22)	**1.57** (1.31-1.83)	**2.35** (1.92-2.79)	**3.14** (2.27-4.27)	303
	03-04	*	**< LOD**	**.700** (<LOD-.780)	**.960** (.780-1.22)	**1.31** (.960-1.57)	538
	05-06	**.418** (.361-.486)	**.440** (.350-.520)	**.700** (.610-.870)	**1.22** (1.05-1.48)	**1.66** (1.48-2.01)	544
	07-08	**.330** (.304-.357)	**.300** (.300-.300)	**.500** (.500-.700)	**1.00** (.800-1.20)	**1.40** (1.20-1.70)	419
	09-10	**.193** (.166-.225)	**.200** (.200-.200)	**.300** (.300-.400)	**.600** (.400-.800)	**.900** (.600-1.10)	391
Non-Hispanic whites	99-00	**.883** (.758-1.03)	**.870** (.780-1.05)	**1.40** (1.22-1.74)	**2.18** (1.92-2.70)	**2.79** (2.44-3.66)	519
	03-04	*	**< LOD**	**.610** (<LOD-.700)	**.870** (.780-.960)	**1.13** (.960-1.40)	962
	05-06	**.428** (.380-.483)	**.440** (.350-.520)	**.780** (.700-.870)	**1.22** (1.13-1.31)	**1.66** (1.40-1.83)	935
	07-08	**.332** (.296-.372)	**.300** (.300-.300)	**.600** (.500-.700)	**1.00** (.800-1.10)	**1.30** (1.10-1.60)	931
	09-10	**.216** (.201-.232)	**.200** (.200-.300)	**.300** (.300-.400)	**.700** (.600-.800)	**1.00** (.900-1.10)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.174, 0.523, 0.174, 0.174, and 0.087 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum 2-(N-Methyl-perfluorooctane sulfonamido) acetic acid (Me-PFOSA-AcOH) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**.100** (<LOD-.160)	**.250** (.200-.310)	**.500** (.440-.530)	**.690** (.580-.850)	1904
Age group							
12-19 years	11-12	**.134** (.110-.163)	**.110** (.090-.170)	**.260** (.170-.350)	**.420** (.350-.480)	**.510** (.420-.850)	344
20 years and older	11-12	*	**.100** (<LOD-.160)	**.250** (.200-.310)	**.510** (.460-.550)	**.700** (.640-.840)	1560
Gender							
Males	11-12	*	**.110** (<LOD-.160)	**.270** (.190-.350)	**.490** (.390-.660)	**.720** (.510-1.06)	966
Females	11-12	*	**.100** (<LOD-.160)	**.250** (.200-.300)	**.510** (.410-.540)	**.690** (.560-.810)	938
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**.220** (.160-.310)	**.440** (.310-.590)	**.590** (.390-.970)	211
Non-Hispanic blacks	11-12	*	**.100** (<LOD-.150)	**.240** (.170-.340)	**.520** (.390-.660)	**.780** (.580-1.06)	485
Non-Hispanic whites	11-12	*	**.120** (<LOD-.170)	**.280** (.230-.340)	**.510** (.460-.580)	**.700** (.600-.990)	666
All Hispanics	11-12	*	**< LOD**	**.170** (.130-.230)	**.350** (.260-.450)	**.510** (.380-.740)	406
Asians	11-12	*	**< LOD**	**.170** (.130-.260)	**.370** (.300-.520)	**.580** (.420-.860)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.087.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluoroundecanoic acid (PFUA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.300 (<LOD-.400)	.400 (.300-.700)	1562
	03-04	*	< LOD	< LOD	< LOD	.600 (<LOD-1.30)	2094
	05-06	*	< LOD	.300 (.200-.400)	.500 (.400-.800)	.700 (.600-1.20)	2120
	07-08	*	< LOD	.200 (<LOD-.300)	.400 (.300-.500)	.600 (.500-.800)	2100
	09-10	.172 (.151-.196)	.200 (.100-.200)	.300 (.200-.400)	.600 (.400-.800)	.900 (.600-1.10)	2233
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	.200 (<LOD-.300)	543
	03-04	*	< LOD	< LOD	< LOD	.300 (<LOD-1.10)	640
	05-06	*	< LOD	< LOD	.300 (.200-.500)	.500 (.300-.900)	640
	07-08	*	< LOD	< LOD	.200 (<LOD-.200)	.300 (.200-.300)	357
	09-10	*	.100 (<LOD-.100)	.200 (.100-.200)	.300 (.200-.600)	.400 (.200-.900)	364
20 years and older	99-00	*	< LOD	< LOD	.300 (<LOD-.500)	.500 (.300-.700)	1019
	03-04	*	< LOD	< LOD	.300 (<LOD-.600)	.600 (<LOD-1.40)	1454
	05-06	*	< LOD	.300 (.200-.400)	.500 (.400-.800)	.800 (.600-1.10)	1480
	07-08	*	< LOD	.200 (.200-.300)	.400 (.300-.600)	.600 (.500-.900)	1743
	09-10	.182 (.160-.207)	.200 (.200-.200)	.300 (.300-.400)	.600 (.400-.800)	.900 (.700-1.20)	1869
Gender							
Males	99-00	*	< LOD	< LOD	.300 (<LOD-.500)	.500 (.300-.600)	743
	03-04	*	< LOD	< LOD	.400 (<LOD-1.00)	.700 (<LOD-2.30)	1053
	05-06	*	< LOD	.300 (.200-.400)	.600 (.400-.700)	.800 (.600-1.10)	1048
	07-08	*	< LOD	.200 (<LOD-.300)	.400 (.300-.500)	.700 (.500-1.00)	1059
	09-10	.170 (.147-.196)	.200 (.100-.200)	.300 (.200-.400)	.500 (.400-.900)	.800 (.500-1.20)	1075
Females	99-00	*	< LOD	< LOD	.300 (<LOD-.400)	.400 (.200-.800)	819
	03-04	*	< LOD	< LOD	< LOD	.400 (<LOD-.700)	1041
	05-06	*	< LOD	.300 (<LOD-.400)	.500 (.400-.700)	.700 (.500-1.10)	1072
	07-08	*	< LOD	.200 (<LOD-.200)	.400 (.300-.500)	.600 (.400-.700)	1041
	09-10	.175 (.153-.199)	.200 (.100-.200)	.300 (.200-.400)	.600 (.400-.800)	.900 (.700-1.20)	1158

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.3, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluoroundecanoic acid (PFUA) (1999 – 2010)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	584
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	485
	05-06	*	**< LOD**	**< LOD**	**.300** (<LOD-.700)	**.500** (.300-1.00)	499
	07-08	*	**< LOD**	**< LOD**	**.300** (<LOD-.400)	**.300** (<LOD-1.40)	391
	09-10	*	**.100** (.100-.100)	**.200** (.200-.200)	**.300** (.300-.400)	**.400** (.300-.600)	461
Non-Hispanic blacks	99-00	*	**< LOD**	**.300** (<LOD-.500)	**.600** (.300-1.00)	**.900** (.600-1.80)	303
	03-04	*	**< LOD**	**< LOD**	**.600** (<LOD-1.40)	**.900** (.300-2.90)	538
	05-06	*	**< LOD**	**.300** (<LOD-.500)	**.600** (.400-1.50)	**1.20** (.600-2.70)	544
	07-08	*	**< LOD**	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.20)	419
	09-10	**.237** (.199-.283)	**.200** (.200-.200)	**.400** (.300-.500)	**.800** (.500-1.10)	**1.30** (.800-1.80)	391
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.300** (<LOD-.800)	519
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.900)	962
	05-06	*	**< LOD**	**.300** (.200-.400)	**.500** (.400-.700)	**.600** (.400-1.50)	935
	07-08	*	**< LOD**	**.200** (<LOD-.200)	**.300** (.300-.500)	**.500** (.400-.600)	931
	09-10	**.162** (.136-.193)	**.200** (.100-.200)	**.300** (.200-.400)	**.500** (.300-.800)	**.800** (.500-1.00)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.3, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluoroundecanoic acid (PFUA) (2011 - 2012)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**.120** (.100-.140)	**.220** (.180-.250)	**.380** (.310-.520)	**.620** (.440-.790)	1904
Age group							
12-19 years	11-12	*	**< LOD**	**.110** (<LOD-.140)	**.180** (.140-.220)	**.250** (.190-.390)	344
20 years and older	11-12	**.146** (.129-.165)	**.130** (.110-.150)	**.230** (.190-.280)	**.420** (.330-.530)	**.660** (.490-.840)	1560
Gender							
Males	11-12	*	**.120** (.100-.150)	**.220** (.180-.260)	**.340** (.290-.480)	**.590** (.390-.820)	966
Females	11-12	*	**.120** (.100-.140)	**.210** (.180-.270)	**.420** (.320-.540)	**.650** (.520-.740)	938
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**.150** (.130-.180)	**.230** (.190-.300)	**.310** (.230-.330)	211
Non-Hispanic blacks	11-12	**.164** (.135-.199)	**.140** (.110-.190)	**.260** (.200-.390)	**.530** (.350-.840)	**.840** (.520-1.26)	485
Non-Hispanic whites	11-12	*	**.110** (<LOD-.140)	**.200** (.160-.240)	**.330** (.280-.410)	**.450** (.330-.690)	666
All Hispanics	11-12	*	**.110** (<LOD-.130)	**.180** (.160-.210)	**.310** (.230-.390)	**.420** (.300-.630)	406
Asians	11-12	**.338** (.277-.412)	**.330** (.220-.510)	**.840** (.630-1.01)	**1.38** (1.02-2.33)	**2.40** (1.33-3.41)	291

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Urinary Mono-benzyl phthalate (MBzP) (1999 – 2010)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**11.0** (9.88-12.3)	**12.2** (11.0-13.6)	**25.5** (23.5-28.6)	**48.3** (39.8-59.3)	**74.4** (68.1-83.4)	2541
	01-02	**10.8** (10.0-11.7)	**11.4** (10.7-12.5)	**27.4** (24.8-29.7)	**58.2** (51.3-63.5)	**87.6** (73.7-102)	2782
	03-04	**9.89** (9.12-10.7)	**10.3** (9.22-11.8)	**23.3** (21.7-25.2)	**47.9** (41.3-54.4)	**72.6** (61.4-90.2)	2605
	05-06	**8.32** (7.28-9.51)	**8.93** (7.78-10.4)	**20.7** (18.2-23.7)	**44.6** (37.6-52.8)	**67.1** (57.4-77.7)	2548
	07-08	**7.24** (6.47-8.09)	**8.42** (7.20-9.50)	**18.3** (16.6-20.4)	**37.3** (31.3-43.3)	**58.8** (48.7-69.1)	2604
	09-10	**6.46** (5.76-7.24)	**6.70** (5.97-7.49)	**15.4** (13.4-17.1)	**31.0** (26.8-36.1)	**48.3** (43.1-55.4)	2749
Age group							
6-11 years	99-00	**28.4** (23.7-34.0)	**29.0** (24.3-35.0)	**59.0** (40.2-70.6)	**92.8** (70.6-154)	**154** (77.8-287)	328
	01-02	**24.1** (21.0-27.6)	**26.6** (19.2-31.2)	**49.3** (44.4-66.8)	**120** (83.7-137)	**169** (132-237)	393
	03-04	**24.4** (20.3-29.2)	**25.2** (21.7-28.7)	**45.9** (36.3-66.5)	**105** (79.1-154)	**184** (105-263)	342
	05-06	**21.3** (19.2-23.7)	**23.5** (19.4-26.6)	**46.1** (37.1-56.9)	**78.6** (64.3-104)	**116** (88.4-137)	356
	07-08	**15.4** (12.3-19.3)	**17.6** (13.8-20.8)	**33.8** (27.0-47.5)	**69.9** (51.3-104)	**131** (69.9-221)	389
	09-10	**11.6** (9.51-14.1)	**12.6** (10.4-14.5)	**28.4** (20.2-37.8)	**63.9** (47.4-76.8)	**87.8** (65.4-212)	415
12-19 years	99-00	**18.4** (15.7-21.6)	**20.4** (16.1-25.1)	**36.9** (31.5-42.1)	**63.7** (48.4-82.6)	**90.2** (67.5-122)	752
	01-02	**16.7** (14.3-19.6)	**17.9** (15.3-22.3)	**40.0** (34.1-45.3)	**81.1** (66.1-95.5)	**122** (96.3-143)	742
	03-04	**15.9** (14.0-18.1)	**17.9** (16.1-19.6)	**35.9** (28.7-46.5)	**64.7** (51.2-86.3)	**110** (71.9-136)	729
	05-06	**14.2** (11.9-16.9)	**14.8** (11.5-18.3)	**31.8** (24.2-41.0)	**62.6** (44.0-85.0)	**94.2** (67.7-134)	702
	07-08	**11.6** (9.56-14.2)	**14.6** (11.5-16.6)	**27.2** (22.0-31.5)	**46.7** (35.4-58.3)	**63.9** (54.7-102)	401
	09-10	**10.6** (8.75-12.9)	**11.9** (10.1-15.4)	**24.8** (21.9-29.2)	**43.1** (36.0-45.8)	**56.1** (44.7-74.3)	420
20 years and older	99-00	**8.96** (7.83-10.3)	**9.94** (8.71-11.2)	**21.0** (18.1-23.8)	**37.4** (31.6-45.0)	**62.1** (39.4-85.5)	1461
	01-02	**9.16** (8.40-9.98)	**10.0** (9.22-10.7)	**22.9** (20.5-24.1)	**47.1** (38.7-54.9)	**71.8** (59.6-87.1)	1647
	03-04	**8.22** (7.42-9.11)	**8.71** (7.78-9.72)	**19.4** (17.0-21.2)	**39.0** (33.9-44.3)	**57.2** (47.9-68.3)	1534
	05-06	**6.87** (6.00-7.86)	**7.34** (6.41-8.71)	**17.1** (14.5-19.7)	**34.0** (28.3-43.4)	**56.9** (45.9-66.7)	1490
	07-08	**6.18** (5.40-7.08)	**7.13** (6.12-8.06)	**15.5** (13.4-17.6)	**30.5** (25.2-37.7)	**49.5** (40.3-63.9)	1814
	09-10	**5.61** (4.97-6.34)	**5.95** (5.17-6.61)	**12.7** (10.9-14.8)	**25.6** (21.5-29.4)	**39.6** (34.2-47.7)	1914
Gender							
Males	99-00	**11.6** (10.1-13.4)	**12.7** (10.9-14.4)	**25.5** (22.7-29.0)	**50.0** (43.1-62.8)	**77.8** (69.3-93.4)	1215
	01-02	**11.2** (9.78-12.9)	**11.5** (10.5-13.3)	**26.6** (23.8-31.0)	**56.4** (45.7-70.1)	**87.5** (63.5-132)	1371
	03-04	**10.5** (9.50-11.6)	**10.9** (9.50-12.6)	**23.3** (21.2-25.6)	**47.2** (38.6-57.3)	**72.6** (56.6-94.8)	1250
	05-06	**9.47** (8.20-10.9)	**10.2** (8.78-12.2)	**23.3** (19.3-25.9)	**51.6** (39.8-61.6)	**71.0** (61.6-83.2)	1270
	07-08	**7.80** (6.96-8.74)	**8.64** (7.49-10.0)	**17.6** (15.8-20.4)	**33.8** (28.4-41.3)	**49.3** (41.5-62.1)	1294
	09-10	**6.93** (6.07-7.92)	**6.98** (6.21-7.80)	**15.6** (13.3-17.6)	**33.0** (27.4-37.8)	**49.0** (40.4-62.8)	1399
Females	99-00	**10.5** (9.17-12.0)	**11.6** (10.2-13.8)	**25.8** (22.2-29.8)	**45.9** (38.7-59.3)	**73.9** (60.6-83.4)	1326
	01-02	**10.5** (9.40-11.7)	**11.1** (9.94-12.9)	**27.4** (23.3-31.5)	**58.6** (49.2-66.0)	**88.0** (73.2-103)	1411
	03-04	**9.33** (8.53-10.2)	**9.58** (8.71-11.2)	**24.0** (21.2-26.1)	**48.3** (42.3-52.1)	**72.5** (60.8-86.3)	1355
	05-06	**7.34** (6.30-8.55)	**7.70** (6.55-9.36)	**18.4** (15.6-22.2)	**39.5** (33.0-46.3)	**62.1** (48.0-73.7)	1278
	07-08	**6.73** (5.77-7.85)	**7.99** (6.41-9.36)	**18.8** (15.4-22.5)	**40.1** (32.2-50.9)	**64.4** (51.1-78.8)	1310
	09-10	**6.04** (5.38-6.77)	**6.36** (5.18-7.47)	**15.3** (12.9-16.9)	**29.3** (24.5-36.9)	**47.7** (38.0-60.4)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.576, 0.216, 0.072, 0.216, 0.216, and 0.216 respectively.

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.72 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BzBP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-benzyl phthalate (MBzP) (1999 – 2010)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**10.0** (8.69-11.6)	**11.3** (9.65-12.2)	**23.8** (19.8-26.0)	**48.6** (40.0-60.5)	**71.1** (58.0-108)	814
	01-02	**9.49** (7.75-11.6)	**10.7** (7.78-13.3)	**21.2** (18.9-27.4)	**50.7** (38.2-61.5)	**68.2** (50.6-116)	677
	03-04	**10.7** (9.52-12.0)	**11.2** (9.72-13.2)	**23.3** (19.9-25.5)	**51.4** (35.0-66.5)	**71.9** (62.3-104)	652
	05-06	**8.95** (7.12-11.3)	**10.2** (8.57-11.9)	**20.1** (14.3-31.0)	**43.1** (33.9-49.8)	**59.8** (43.6-77.3)	637
	07-08	**7.87** (6.39-9.68)	**9.43** (6.91-11.5)	**18.7** (14.1-25.3)	**38.0** (30.2-47.5)	**60.4** (40.5-73.9)	531
	09-10	**7.58** (6.42-8.96)	**7.39** (6.33-9.00)	**17.1** (14.3-20.3)	**33.8** (26.5-43.5)	**54.5** (34.4-79.7)	566
Non-Hispanic blacks	99-00	**16.6** (14.9-18.4)	**16.6** (14.8-18.4)	**35.5** (31.7-40.0)	**68.2** (57.6-93.4)	**99.1** (76.6-174)	603
	01-02	**17.1** (15.1-19.4)	**17.4** (14.3-20.2)	**36.4** (29.9-45.3)	**72.6** (62.2-91.3)	**103** (91.2-129)	703
	03-04	**13.6** (11.8-15.7)	**14.4** (11.1-17.7)	**31.5** (28.0-35.3)	**58.2** (50.4-76.0)	**86.2** (71.8-124)	699
	05-06	**11.9** (9.03-15.7)	**12.7** (10.1-17.1)	**26.1** (21.0-35.0)	**60.6** (47.2-74.6)	**83.2** (74.6-102)	678
	07-08	**9.37** (8.28-10.6)	**9.72** (8.35-11.7)	**21.4** (18.4-24.8)	**46.9** (34.3-61.6)	**71.3** (63.7-89.6)	597
	09-10	**8.98** (7.67-10.5)	**9.14** (7.76-10.5)	**21.0** (16.4-24.7)	**38.9** (30.3-52.6)	**67.4** (51.3-80.7)	516
Non-Hispanic whites	99-00	**10.3** (9.12-11.6)	**11.6** (10.3-13.4)	**24.5** (22.0-27.6)	**42.3** (36.9-53.4)	**73.9** (53.4-83.4)	912
	01-02	**10.1** (9.12-11.1)	**10.5** (9.65-11.2)	**25.6** (23.2-28.4)	**55.2** (47.6-65.0)	**87.5** (67.1-112)	1216
	03-04	**9.25** (8.30-10.3)	**9.50** (8.42-11.5)	**22.0** (20.0-25.3)	**45.9** (38.6-52.1)	**65.9** (54.9-87.9)	1088
	05-06	**7.67** (6.61-8.90)	**8.06** (6.98-10.1)	**19.8** (17.1-23.5)	**43.4** (32.4-52.5)	**65.8** (52.5-76.8)	1038
	07-08	**7.10** (6.33-7.97)	**8.14** (7.06-9.29)	**17.9** (16.5-20.3)	**37.7** (31.0-44.2)	**57.0** (46.0-68.6)	1077
	09-10	**6.07** (5.24-7.03)	**6.31** (5.54-7.23)	**14.7** (12.4-16.7)	**29.5** (23.4-36.9)	**44.6** (34.9-64.1)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.576, 0.216, 0.072, 0.216, 0.216, and 0.216 respectively.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.72 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BzBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-benzyl phthalate (MBzP) (2011 - 2012)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**4.52** (4.17-4.90)	**4.40** (4.10-5.00)	**10.7** (9.80-12.2)	**21.7** (20.2-24.4)	**35.9** (29.2-41.7)	2489
Age group							
6-11 years	11-12	**8.62** (7.22-10.3)	**8.50** (6.60-10.4)	**21.6** (15.8-26.2)	**50.7** (31.4-71.7)	**75.2** (51.3-124)	396
12-19 years	11-12	**6.62** (5.28-8.30)	**7.30** (4.80-10.2)	**17.0** (13.3-20.2)	**31.5** (24.1-39.2)	**42.6** (33.4-65.3)	388
20 years and older	11-12	**3.98** (3.60-4.39)	**4.00** (3.70-4.40)	**9.70** (8.10-10.5)	**19.2** (17.0-21.0)	**28.0** (22.4-37.0)	1705
Gender							
Males	11-12	**4.80** (4.25-5.41)	**4.80** (4.20-5.40)	**11.1** (9.80-12.7)	**22.4** (19.9-25.7)	**37.0** (28.0-58.3)	1259
Females	11-12	**4.27** (3.81-4.77)	**4.20** (3.80-4.90)	**10.5** (9.50-12.3)	**21.6** (19.7-24.4)	**33.9** (27.4-42.0)	1230
Race/ethnicity							
Mexican Americans	11-12	**5.11** (4.03-6.48)	**5.10** (3.90-6.60)	**11.3** (7.60-16.9)	**20.4** (14.7-28.8)	**29.1** (19.9-69.3)	316
Non-Hispanic blacks	11-12	**7.43** (6.14-8.98)	**7.50** (6.40-9.00)	**16.4** (13.4-20.1)	**33.9** (24.3-48.6)	**54.9** (42.7-76.1)	665
Non-Hispanic whites	11-12	**4.14** (3.84-4.46)	**4.10** (3.80-4.40)	**10.1** (8.50-11.4)	**20.2** (17.9-22.9)	**30.4** (24.8-38.2)	813
All Hispanics	11-12	**4.80** (4.03-5.72)	**4.90** (4.00-5.70)	**11.3** (8.40-14.8)	**22.4** (17.6-29.8)	**33.6** (22.4-45.5)	571
Asians	11-12	**2.99** (2.44-3.67)	**2.90** (2.40-3.50)	**7.20** (5.20-9.50)	**15.1** (11.2-21.5)	**27.7** (17.5-45.9)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.3.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BzBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-benzyl phthalate (MBzP) (creatinine corrected) (1999 – 2010)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**10.0** (9.33-10.8)	**9.60** (9.22-10.3)	**18.1** (16.8-19.6)	**36.1** (29.9-42.3)	**55.7** (50.1-62.1)	2541
	01-02	**10.2** (9.50-10.9)	**9.71** (9.12-10.4)	**19.1** (17.8-20.9)	**39.5** (35.3-42.1)	**65.1** (53.6-73.2)	2782
	03-04	**9.29** (8.76-9.86)	**9.04** (8.07-9.82)	**17.7** (16.0-19.0)	**33.1** (29.5-37.1)	**50.4** (44.9-57.5)	2605
	05-06	**8.11** (7.28-9.04)	**8.24** (7.37-8.98)	**15.3** (13.9-17.4)	**30.2** (26.4-35.1)	**47.4** (42.7-53.3)	2548
	07-08	**7.29** (6.71-7.93)	**7.20** (6.57-8.17)	**14.3** (13.1-15.4)	**28.3** (24.4-31.8)	**42.6** (36.3-49.1)	2604
	09-10	**6.74** (6.06-7.50)	**6.40** (5.63-7.30)	**12.4** (11.3-13.8)	**24.0** (20.4-26.6)	**34.1** (30.5-41.4)	2749
Age group							
6-11 years	99-00	**28.8** (24.2-34.3)	**27.8** (21.7-36.9)	**52.9** (40.8-71.4)	**75.1** (64.4-102)	**102** (71.8-124)	328
	01-02	**27.4** (24.8-30.3)	**26.9** (24.3-30.4)	**48.9** (40.2-57.9)	**96.7** (83.3-127)	**140** (86.9-219)	393
	03-04	**25.8** (21.9-30.3)	**23.2** (20.1-29.1)	**43.7** (36.1-57.2)	**97.8** (61.6-154)	**165** (71.8-286)	342
	05-06	**23.5** (21.1-26.2)	**25.5** (20.5-29.5)	**47.1** (35.8-57.8)	**77.6** (62.8-94.3)	**104** (85.8-130)	356
	07-08	**19.0** (16.0-22.5)	**20.7** (15.6-27.0)	**35.4** (32.3-40.0)	**67.2** (51.9-91.5)	**118** (74.3-159)	389
	09-10	**15.1** (12.7-18.0)	**14.6** (12.0-17.2)	**29.3** (25.9-37.6)	**66.5** (45.3-84.1)	**92.2** (67.1-163)	415
12-19 years	99-00	**12.4** (11.1-14.0)	**12.3** (10.5-14.6)	**20.4** (17.5-25.1)	**35.8** (27.9-49.9)	**50.4** (35.7-59.0)	752
	01-02	**12.9** (11.3-14.8)	**13.0** (11.3-15.0)	**24.4** (21.1-27.8)	**48.7** (40.2-61.9)	**72.0** (58.1-88.6)	742
	03-04	**11.9** (11.1-12.8)	**12.2** (11.1-13.1)	**21.6** (18.0-25.6)	**37.5** (29.3-44.5)	**56.0** (39.5-82.6)	729
	05-06	**10.6** (9.14-12.2)	**10.5** (8.33-13.0)	**18.5** (15.9-23.7)	**35.8** (28.1-46.0)	**48.8** (41.3-65.3)	702
	07-08	**9.06** (7.76-10.6)	**9.39** (8.12-11.1)	**16.7** (13.8-21.0)	**32.1** (22.0-45.9)	**48.4** (32.3-55.6)	401
	09-10	**8.54** (7.36-9.90)	**8.73** (7.44-10.8)	**14.9** (13.2-17.5)	**24.9** (21.6-28.9)	**32.5** (25.7-42.7)	420
20 years and older	99-00	**8.47** (7.73-9.27)	**8.68** (8.01-9.26)	**14.5** (13.2-16.8)	**24.9** (22.0-29.4)	**41.1** (29.7-53.2)	1461
	01-02	**8.66** (8.08-9.28)	**8.47** (8.00-9.00)	**15.6** (14.3-17.1)	**30.5** (25.8-34.7)	**46.8** (39.0-56.4)	1647
	03-04	**7.90** (7.39-8.45)	**7.58** (6.98-8.37)	**14.2** (13.1-15.4)	**26.3** (25.0-28.2)	**40.2** (33.7-44.9)	1534
	05-06	**6.89** (6.20-7.66)	**7.10** (6.60-7.71)	**13.1** (12.1-14.2)	**22.4** (19.9-25.5)	**34.6** (28.9-43.1)	1490
	07-08	**6.35** (5.74-7.03)	**6.41** (5.65-7.15)	**12.3** (11.1-13.6)	**21.8** (19.1-25.7)	**32.6** (28.7-40.5)	1814
	09-10	**5.94** (5.31-6.66)	**5.67** (5.03-6.53)	**10.8** (9.18-12.5)	**19.2** (16.6-23.5)	**29.1** (24.2-33.4)	1914
Gender							
Males	99-00	**9.14** (8.51-9.82)	**8.96** (8.32-9.39)	**17.1** (15.5-18.8)	**32.0** (25.5-41.0)	**52.9** (34.9-71.8)	1215
	01-02	**9.13** (8.18-10.2)	**8.55** (7.85-9.53)	**17.4** (15.1-19.0)	**35.3** (31.5-40.4)	**57.8** (43.8-74.7)	1371
	03-04	**8.25** (7.60-8.95)	**7.99** (7.01-9.03)	**15.2** (14.0-17.0)	**28.4** (24.6-35.8)	**45.3** (37.4-59.8)	1250
	05-06	**7.61** (6.65-8.70)	**7.57** (6.65-8.91)	**14.3** (13.0-16.6)	**30.0** (25.5-34.5)	**43.7** (36.2-48.2)	1270
	07-08	**6.57** (5.91-7.31)	**6.66** (5.68-7.46)	**12.8** (11.3-14.8)	**24.4** (21.2-29.5)	**36.3** (30.6-45.5)	1294
	09-10	**6.21** (5.56-6.94)	**5.88** (5.13-6.74)	**11.6** (10.1-12.9)	**21.3** (18.8-24.1)	**32.2** (27.6-35.6)	1399
Females	99-00	**11.0** (9.96-12.1)	**10.6** (9.60-11.5)	**18.6** (17.3-21.1)	**40.6** (33.7-43.6)	**57.9** (43.3-84.2)	1326
	01-02	**11.3** (10.2-12.4)	**10.8** (9.97-11.9)	**21.2** (18.6-24.5)	**42.1** (35.9-50.0)	**69.0** (50.0-83.4)	1411
	03-04	**10.4** (9.65-11.2)	**9.97** (9.20-10.9)	**20.1** (17.8-22.6)	**37.4** (31.2-43.4)	**52.9** (45.8-65.0)	1355
	05-06	**8.63** (7.84-9.51)	**8.67** (8.12-9.26)	**15.9** (14.8-18.3)	**32.0** (26.3-41.4)	**52.3** (45.2-62.8)	1278
	07-08	**8.07** (7.29-8.93)	**8.37** (7.20-9.16)	**15.5** (13.9-18.0)	**31.5** (27.5-34.2)	**48.3** (40.2-54.9)	1310
	09-10	**7.29** (6.47-8.21)	**6.90** (5.90-8.04)	**13.6** (11.9-15.3)	**25.6** (21.9-30.4)	**38.8** (30.7-47.3)	1350

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.72 for survey periods 1999-2008 compared with results previously released.

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Urinary Mono-benzyl phthalate (MBzP) (creatinine corrected) (1999 – 2010)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**9.10** (8.20-10.1)	**8.60** (7.87-9.53)	**17.4** (15.5-19.1)	**33.5** (30.2-38.7)	**49.1** (40.6-67.5)	814
	01-02	**8.95** (7.69-10.4)	**8.55** (7.16-10.7)	**17.1** (14.1-20.9)	**33.6** (26.3-44.4)	**51.5** (36.8-86.5)	677
	03-04	**9.66** (8.41-11.1)	**9.00** (8.25-9.66)	**17.3** (15.1-20.0)	**38.2** (27.6-46.7)	**56.0** (41.1-89.8)	652
	05-06	**8.05** (6.69-9.69)	**8.38** (7.48-8.91)	**16.0** (12.6-20.2)	**31.0** (22.4-40.6)	**45.7** (31.3-54.2)	637
	07-08	**7.68** (6.13-9.62)	**8.06** (6.42-10.3)	**15.5** (12.5-19.2)	**29.1** (21.9-36.9)	**42.9** (33.5-51.8)	531
	09-10	**7.53** (6.52-8.69)	**7.29** (6.30-8.18)	**13.3** (11.6-16.3)	**32.3** (23.3-43.6)	**52.2** (33.0-66.1)	566
Non-Hispanic blacks	99-00	**10.7** (9.75-11.7)	**9.83** (8.76-10.9)	**19.4** (16.2-22.9)	**40.5** (28.4-54.7)	**62.5** (46.4-71.9)	603
	01-02	**12.0** (10.5-13.7)	**11.3** (9.84-13.9)	**24.1** (19.1-27.4)	**43.3** (38.7-50.0)	**77.7** (54.4-83.4)	703
	03-04	**9.65** (8.46-11.0)	**9.81** (8.32-11.2)	**17.4** (15.8-20.7)	**36.0** (29.6-41.6)	**53.8** (42.5-65.2)	699
	05-06	**8.38** (6.44-10.9)	**8.24** (6.72-10.6)	**16.1** (12.8-21.5)	**34.1** (25.8-43.9)	**52.3** (39.9-62.9)	678
	07-08	**7.28** (6.51-8.14)	**7.07** (5.97-8.28)	**14.7** (12.2-16.0)	**25.8** (22.6-31.5)	**42.3** (32.6-50.3)	597
	09-10	**6.50** (5.49-7.70)	**6.50** (5.38-7.45)	**11.7** (9.80-14.9)	**23.9** (17.0-31.8)	**34.4** (25.8-48.9)	516
Non-Hispanic whites	99-00	**10.0** (9.16-11.0)	**9.66** (9.25-10.7)	**18.2** (16.6-19.8)	**38.3** (27.9-46.7)	**56.1** (48.5-65.0)	912
	01-02	**9.97** (9.24-10.8)	**9.33** (8.69-10.3)	**18.5** (17.1-20.1)	**38.2** (33.5-42.1)	**64.2** (49.7-78.5)	1216
	03-04	**9.14** (8.48-9.84)	**8.97** (7.77-9.93)	**17.6** (15.6-19.2)	**30.2** (28.1-35.2)	**47.2** (41.4-57.3)	1088
	05-06	**8.08** (7.17-9.10)	**8.35** (7.31-9.49)	**15.2** (13.7-17.4)	**29.9** (25.1-36.5)	**47.4** (40.0-57.1)	1038
	07-08	**7.42** (6.90-7.97)	**7.38** (6.65-8.23)	**14.0** (12.9-15.4)	**28.3** (24.2-32.3)	**44.5** (36.3-52.4)	1077
	09-10	**6.83** (6.08-7.67)	**6.37** (5.58-7.34)	**12.6** (11.1-14.5)	**24.0** (19.5-27.6)	**33.4** (27.9-44.6)	1206

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.72 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BzBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-benzyl phthalate (MBzP) (creatinine corrected) (2011 - 2012)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**5.15** (4.80-5.52)	**4.96** (4.62-5.35)	**9.49** (8.71-10.5)	**17.4** (16.2-19.1)	**26.7** (24.3-30.0)	2487
Age group							
6-11 years	11-12	**12.5** (10.8-14.5)	**11.9** (10.0-14.3)	**24.1** (18.5-28.9)	**53.2** (35.9-67.4)	**81.0** (54.1-97.7)	395
12-19 years	11-12	**6.45** (5.81-7.16)	**6.23** (5.39-7.54)	**11.7** (10.1-13.2)	**18.3** (15.2-22.1)	**25.5** (20.3-39.9)	388
20 years and older	11-12	**4.52** (4.18-4.89)	**4.46** (4.05-4.76)	**8.08** (7.50-8.83)	**15.1** (12.9-16.8)	**21.6** (18.5-24.5)	1704
Gender							
Males	11-12	**4.49** (4.01-5.04)	**4.26** (3.91-4.73)	**8.46** (7.56-9.10)	**15.4** (13.8-18.3)	**24.7** (18.3-37.0)	1258
Females	11-12	**5.87** (5.43-6.35)	**5.65** (5.00-6.43)	**10.5** (9.45-12.1)	**19.7** (16.4-23.3)	**28.7** (24.5-34.8)	1229
Race/ethnicity							
Mexican Americans	11-12	**5.76** (4.41-7.51)	**5.86** (5.00-7.08)	**10.2** (8.61-13.1)	**17.8** (12.4-34.6)	**28.3** (17.1-50.2)	316
Non-Hispanic blacks	11-12	**5.78** (4.83-6.92)	**5.30** (4.49-6.16)	**10.5** (8.68-13.6)	**21.1** (17.4-27.5)	**35.3** (25.2-53.4)	665
Non-Hispanic whites	11-12	**5.04** (4.67-5.44)	**4.82** (4.44-5.37)	**9.11** (8.18-10.7)	**16.6** (15.1-18.5)	**24.7** (21.4-28.7)	811
All Hispanics	11-12	**5.38** (4.45-6.51)	**5.29** (4.55-6.14)	**9.63** (7.95-12.7)	**18.4** (13.9-34.6)	**35.6** (18.4-49.3)	571
Asians	11-12	**4.01** (3.49-4.60)	**3.96** (3.27-4.72)	**7.74** (6.39-9.73)	**13.4** (10.5-16.4)	**20.5** (14.3-27.7)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BzBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isobutyl phthalate (MiBP) (2001 – 2010)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.71** (2.49-2.94)	**2.70** (2.40-3.00)	**5.70** (5.30-6.10)	**12.0** (11.4-12.7)	**17.9** (16.3-19.8)	2782
	03-04	**3.80** (3.40-4.25)	**4.20** (3.70-4.80)	**8.40** (7.40-9.50)	**15.0** (13.1-17.3)	**21.3** (18.6-26.0)	2605
	05-06	**5.20** (4.64-5.83)	**5.80** (5.40-6.60)	**11.9** (10.6-13.3)	**21.3** (18.7-23.7)	**31.6** (27.1-37.2)	2548
	07-08	**7.15** (6.59-7.77)	**8.00** (7.50-8.60)	**15.3** (13.9-16.9)	**27.2** (24.6-30.4)	**39.1** (35.4-43.8)	2604
	09-10	**7.64** (6.88-8.49)	**8.30** (7.24-9.27)	**15.8** (14.5-17.4)	**27.6** (24.7-31.7)	**41.3** (35.6-47.5)	2749
Age group							
6-11 years	01-02	**4.22** (3.28-5.43)	**4.40** (3.20-6.20)	**10.7** (7.30-13.4)	**18.6** (14.2-22.0)	**23.4** (20.4-27.8)	393
	03-04	**6.56** (5.24-8.22)	**7.00** (5.10-9.10)	**12.8** (9.40-17.7)	**24.3** (19.6-34.5)	**40.6** (29.3-48.5)	342
	05-06	**8.53** (7.67-9.48)	**9.00** (8.20-10.3)	**15.8** (13.7-19.2)	**33.2** (27.5-38.4)	**49.1** (33.2-54.4)	356
	07-08	**10.7** (8.94-12.8)	**11.4** (8.90-13.2)	**21.1** (16.6-27.2)	**35.9** (30.2-44.7)	**55.4** (36.4-75.5)	389
	09-10	**10.2** (9.10-11.4)	**10.9** (9.45-12.2)	**20.8** (18.8-23.6)	**35.7** (28.8-46.9)	**55.4** (41.2-75.4)	415
12-19 years	01-02	**3.48** (2.90-4.17)	**3.80** (2.90-4.40)	**7.40** (6.00-9.00)	**14.5** (11.7-18.6)	**22.3** (16.2-33.4)	742
	03-04	**4.55** (3.73-5.55)	**5.60** (4.50-6.30)	**10.1** (8.00-11.4)	**17.1** (13.3-20.9)	**22.7** (18.5-29.1)	729
	05-06	**7.46** (6.53-8.51)	**7.90** (6.90-9.80)	**16.2** (13.6-19.3)	**29.2** (23.6-31.3)	**34.1** (30.1-49.9)	702
	07-08	**10.2** (8.53-12.3)	**10.5** (8.40-12.9)	**22.3** (17.0-26.9)	**41.6** (32.9-48.1)	**56.2** (44.6-82.7)	401
	09-10	**10.7** (9.54-12.1)	**12.3** (10.7-13.6)	**20.2** (17.3-22.2)	**36.1** (28.3-46.0)	**49.8** (42.3-60.2)	420
20 years and older	01-02	**2.46** (2.30-2.63)	**2.40** (2.20-2.70)	**5.10** (4.80-5.50)	**10.6** (9.40-12.0)	**16.3** (13.6-18.5)	1647
	03-04	**3.46** (3.11-3.84)	**3.90** (3.40-4.30)	**7.50** (6.70-8.50)	**13.3** (11.5-16.5)	**19.9** (16.0-25.0)	1534
	05-06	**4.65** (4.07-5.30)	**5.40** (4.70-6.00)	**10.6** (9.50-12.0)	**18.7** (16.0-21.9)	**29.0** (22.1-34.4)	1490
	07-08	**6.47** (5.91-7.09)	**7.50** (6.70-8.00)	**14.1** (12.5-16.1)	**24.5** (21.3-27.7)	**34.2** (27.9-39.5)	1814
	09-10	**7.03** (6.26-7.90)	**7.55** (6.66-8.57)	**14.6** (12.8-16.6)	**25.7** (23.2-28.5)	**38.6** (31.4-43.6)	1914
Gender							
Males	01-02	**2.73** (2.50-2.97)	**2.80** (2.40-3.20)	**5.60** (5.00-6.10)	**11.6** (10.1-12.6)	**16.6** (13.6-20.1)	1371
	03-04	**4.07** (3.56-4.66)	**4.30** (3.80-5.10)	**9.20** (7.50-10.2)	**16.0** (13.3-18.5)	**22.7** (17.3-30.3)	1250
	05-06	**5.65** (5.08-6.29)	**6.20** (5.60-6.90)	**11.9** (10.7-13.3)	**22.1** (18.7-26.5)	**32.3** (25.5-39.8)	1270
	07-08	**7.52** (6.84-8.26)	**8.30** (7.70-9.40)	**15.2** (13.6-17.2)	**25.0** (21.7-28.4)	**38.3** (27.3-44.2)	1294
	09-10	**7.80** (6.96-8.74)	**8.48** (7.44-9.16)	**15.3** (14.0-17.0)	**26.2** (23.2-30.9)	**39.1** (31.1-46.4)	1399
Females	01-02	**2.68** (2.44-2.96)	**2.60** (2.30-3.00)	**5.80** (5.30-6.50)	**12.6** (11.0-14.7)	**18.7** (16.3-24.0)	1411
	03-04	**3.56** (3.19-3.97)	**4.10** (3.50-4.50)	**8.00** (7.10-9.10)	**14.2** (12.5-16.6)	**20.5** (17.9-23.0)	1355
	05-06	**4.80** (4.15-5.55)	**5.50** (4.70-6.60)	**11.9** (10.1-13.6)	**19.6** (17.0-24.1)	**29.8** (24.6-35.9)	1278
	07-08	**6.82** (6.21-7.49)	**7.40** (6.50-8.30)	**15.5** (14.5-16.9)	**29.1** (27.0-32.9)	**39.8** (36.2-46.7)	1310
	09-10	**7.50** (6.68-8.43)	**8.07** (6.94-9.62)	**16.4** (14.0-18.9)	**29.1** (25.3-33.5)	**45.0** (36.0-52.7)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.0, 0.3, 0.3,0.3, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isobutyl phthalate (MiBP) (2001 – 2010)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**3.26** (2.72-3.91)	**3.40** (2.70-4.30)	**7.20** (6.20-9.30)	**12.2** (11.2-14.7)	**18.4** (14.1-25.6)	677
	03-04	**4.81** (3.85-6.02)	**5.10** (4.00-6.70)	**10.2** (8.20-12.6)	**18.3** (13.5-24.5)	**26.0** (19.0-38.5)	652
	05-06	**6.88** (5.58-8.48)	**7.30** (6.00-8.90)	**14.5** (11.5-17.5)	**26.3** (20.7-34.1)	**40.4** (33.8-46.8)	637
	07-08	**9.30** (8.12-10.6)	**10.2** (9.40-11.1)	**17.4** (15.9-18.8)	**31.9** (24.0-39.2)	**47.6** (34.2-58.2)	531
	09-10	**9.34** (8.22-10.6)	**9.97** (8.31-11.6)	**18.8** (16.0-21.8)	**31.7** (25.6-37.2)	**46.4** (37.3-54.0)	566
Non-Hispanic blacks	01-02	**4.90** (4.46-5.37)	**5.30** (4.60-6.00)	**10.7** (9.20-12.0)	**18.3** (16.1-20.1)	**25.5** (20.7-31.3)	703
	03-04	**6.67** (5.97-7.46)	**6.90** (6.30-7.50)	**12.6** (10.9-14.7)	**25.7** (17.7-31.0)	**33.5** (27.3-43.9)	699
	05-06	**8.37** (7.06-9.91)	**8.70** (7.50-10.2)	**16.1** (13.8-19.7)	**30.1** (22.1-37.2)	**41.4** (30.1-67.7)	678
	07-08	**10.7** (9.08-12.5)	**12.5** (10.5-14.8)	**23.1** (21.7-25.0)	**38.9** (32.4-43.5)	**47.6** (44.5-57.0)	597
	09-10	**14.0** (11.9-16.4)	**15.4** (12.9-17.8)	**27.5** (22.4-34.1)	**47.6** (34.4-65.6)	**66.0** (46.3-85.2)	516
Non-Hispanic whites	01-02	**2.33** (2.10-2.59)	**2.30** (1.90-2.60)	**4.90** (4.40-5.30)	**9.60** (8.30-11.6)	**15.6** (13.0-18.6)	1216
	03-04	**3.17** (2.82-3.56)	**3.50** (3.00-4.00)	**6.80** (5.90-7.90)	**12.5** (10.6-14.5)	**17.6** (14.7-20.8)	1088
	05-06	**4.41** (3.86-5.04)	**5.00** (4.20-5.70)	**10.3** (9.10-11.5)	**18.7** (16.3-21.1)	**28.8** (22.1-32.2)	1038
	07-08	**6.32** (5.78-6.93)	**7.20** (6.40-7.90)	**13.6** (12.4-14.9)	**24.3** (20.1-27.3)	**33.8** (27.0-39.5)	1077
	09-10	**6.34** (5.65-7.10)	**6.92** (6.08-7.90)	**12.9** (11.7-14.5)	**21.6** (19.1-24.2)	**29.6** (26.0-34.3)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.0, 0.3, 0.3,0.3, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isobutyl phthalate (MiBP) (2011 - 2012)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**6.00** (5.41-6.65)	**6.30** (5.80-6.90)	**13.0** (11.9-14.5)	**25.4** (22.3-29.7)	**36.5** (33.4-41.0)	2489
Age group							
6-11 years	11-12	**8.28** (6.93-9.91)	**9.40** (6.90-11.6)	**18.6** (14.1-23.6)	**31.8** (26.0-38.2)	**43.1** (33.6-66.5)	396
12-19 years	11-12	**7.73** (6.74-8.86)	**8.10** (6.90-9.60)	**19.0** (14.5-23.0)	**34.2** (25.3-38.5)	**43.3** (36.5-45.4)	388
20 years and older	11-12	**5.57** (4.92-6.31)	**6.00** (5.40-6.60)	**12.2** (10.6-13.6)	**23.6** (19.4-27.8)	**34.4** (31.1-39.2)	1705
Gender							
Males	11-12	**6.54** (5.70-7.51)	**6.60** (5.70-7.50)	**13.6** (11.7-15.8)	**27.6** (21.8-35.1)	**39.3** (33.6-46.9)	1259
Females	11-12	**5.52** (4.95-6.15)	**6.10** (5.60-6.80)	**12.7** (11.3-14.5)	**24.1** (21.2-26.3)	**32.7** (30.2-36.5)	1230
Race/ethnicity							
Mexican Americans	11-12	**6.71** (5.77-7.82)	**6.60** (5.30-8.40)	**12.4** (10.5-15.2)	**23.7** (15.5-31.2)	**33.4** (23.7-54.7)	316
Non-Hispanic blacks	11-12	**9.88** (8.55-11.4)	**10.4** (8.90-12.5)	**19.7** (16.5-23.6)	**36.5** (30.8-41.2)	**49.9** (41.2-67.8)	665
Non-Hispanic whites	11-12	**5.23** (4.71-5.82)	**5.50** (4.90-6.00)	**11.7** (9.40-13.3)	**23.7** (17.6-28.8)	**34.2** (28.6-37.7)	813
All Hispanics	11-12	**7.22** (5.89-8.87)	**7.70** (5.70-10.0)	**13.7** (11.4-18.2)	**24.8** (18.8-32.4)	**33.4** (23.9-64.8)	571
Asians	11-12	**5.70** (4.35-7.46)	**6.20** (4.30-8.70)	**13.8** (9.80-21.2)	**27.8** (19.9-39.3)	**40.1** (27.8-65.3)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isobutyl phthalate (MiBP) (creatinine corrected) (2001 – 2010)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.54** (2.36-2.73)	**2.46** (2.26-2.68)	**4.54** (4.20-4.86)	**8.02** (7.78-8.66)	**12.0** (10.8-13.5)	2782
	03-04	**3.57** (3.18-4.00)	**3.57** (3.15-4.08)	**6.21** (5.36-7.17)	**10.9** (9.47-12.7)	**15.4** (12.8-18.6)	2605
	05-06	**5.07** (4.68-5.50)	**5.07** (4.74-5.45)	**8.81** (8.08-9.55)	**15.2** (13.4-16.5)	**21.3** (18.3-24.3)	2548
	07-08	**7.21** (6.76-7.70)	**7.25** (6.77-7.81)	**12.1** (11.2-13.3)	**19.5** (17.2-21.5)	**27.8** (24.9-31.3)	2604
	09-10	**7.98** (7.34-8.68)	**7.86** (7.12-8.52)	**12.4** (11.2-14.1)	**20.1** (17.3-23.0)	**26.8** (23.7-32.8)	2749
Age group							
6-11 years	01-02	**4.81** (3.89-5.94)	**5.18** (4.13-6.32)	**9.20** (7.03-11.7)	**15.2** (11.1-24.3)	**24.3** (13.9-40.3)	393
	03-04	**6.94** (5.79-8.31)	**7.03** (5.29-8.95)	**11.8** (9.56-15.1)	**18.6** (15.1-25.1)	**28.7** (21.8-36.9)	342
	05-06	**9.39** (8.56-10.3)	**9.46** (8.50-10.3)	**15.3** (13.0-18.1)	**25.2** (21.6-30.1)	**37.9** (28.0-65.5)	356
	07-08	**13.2** (11.1-15.5)	**12.9** (10.5-15.7)	**21.9** (17.8-26.0)	**35.5** (28.3-43.5)	**52.6** (41.4-58.3)	389
	09-10	**13.2** (11.8-14.9)	**12.6** (11.0-14.7)	**20.9** (18.7-24.9)	**35.3** (28.6-46.1)	**53.0** (39.1-95.1)	415
12-19 years	01-02	**2.68** (2.29-3.15)	**2.83** (2.39-3.33)	**4.79** (4.04-5.51)	**7.62** (6.18-10.2)	**12.8** (8.76-15.6)	742
	03-04	**3.41** (2.86-4.05)	**3.69** (2.99-4.31)	**5.75** (4.69-7.04)	**9.32** (7.17-12.0)	**13.5** (9.52-20.1)	729
	05-06	**5.56** (5.05-6.11)	**5.82** (5.20-6.53)	**9.05** (8.06-10.4)	**14.3** (13.4-16.5)	**20.3** (17.7-26.8)	702
	07-08	**7.95** (6.96-9.09)	**8.30** (6.89-9.76)	**13.7** (11.3-15.7)	**21.3** (16.3-28.4)	**28.7** (20.5-62.6)	401
	09-10	**8.63** (7.97-9.34)	**8.94** (7.87-9.78)	**12.7** (11.7-14.9)	**19.5** (16.5-25.3)	**28.8** (20.6-53.4)	420
20 years and older	01-02	**2.33** (2.20-2.46)	**2.26** (2.08-2.43)	**3.89** (3.65-4.25)	**7.31** (7.00-7.78)	**10.6** (9.46-11.3)	1647
	03-04	**3.32** (3.00-3.68)	**3.33** (3.00-3.81)	**5.59** (4.93-6.51)	**9.84** (8.65-11.2)	**13.5** (11.4-16.0)	1534
	05-06	**4.66** (4.23-5.13)	**4.62** (4.36-5.03)	**8.00** (7.23-8.78)	**13.5** (11.6-15.7)	**18.2** (16.1-23.0)	1490
	07-08	**6.65** (6.21-7.12)	**6.73** (6.29-7.20)	**11.1** (10.2-12.1)	**17.1** (15.6-18.6)	**23.8** (21.0-26.7)	1814
	09-10	**7.45** (6.81-8.15)	**7.24** (6.69-7.89)	**11.6** (10.4-12.6)	**17.7** (15.1-21.9)	**23.8** (20.7-28.8)	1914
Gender							
Males	01-02	**2.22** (2.09-2.35)	**2.18** (1.97-2.37)	**3.76** (3.58-4.11)	**7.38** (6.64-7.95)	**11.1** (10.1-12.5)	1371
	03-04	**3.20** (2.80-3.66)	**3.19** (2.74-3.56)	**5.84** (4.79-6.56)	**10.0** (8.27-12.2)	**13.9** (11.5-19.1)	1250
	05-06	**4.54** (4.19-4.92)	**4.45** (4.21-4.81)	**7.95** (6.95-8.73)	**13.4** (11.6-15.8)	**18.5** (16.7-19.8)	1270
	07-08	**6.33** (5.91-6.79)	**6.36** (5.93-6.77)	**10.4** (9.43-11.3)	**16.4** (15.0-19.7)	**24.1** (21.1-27.7)	1294
	09-10	**6.99** (6.44-7.59)	**6.70** (6.26-7.21)	**10.6** (9.80-11.5)	**17.5** (15.4-19.8)	**23.4** (20.9-27.3)	1399
Females	01-02	**2.88** (2.61-3.18)	**2.85** (2.52-3.18)	**5.14** (4.67-5.89)	**8.66** (8.02-10.1)	**13.7** (11.1-15.0)	1411
	03-04	**3.96** (3.56-4.42)	**4.00** (3.57-4.45)	**6.73** (5.64-7.80)	**11.6** (10.2-13.0)	**15.7** (13.0-18.7)	1355
	05-06	**5.64** (5.04-6.32)	**5.86** (5.39-6.39)	**9.61** (8.85-10.6)	**15.8** (14.3-18.1)	**24.3** (18.7-32.5)	1278
	07-08	**8.18** (7.46-8.96)	**8.70** (7.78-9.47)	**13.9** (12.2-15.2)	**21.3** (18.3-25.3)	**31.6** (26.4-34.7)	1310
	09-10	**9.05** (8.22-9.97)	**9.13** (8.19-9.90)	**14.4** (12.2-16.2)	**22.0** (18.1-26.3)	**29.8** (25.8-36.4)	1350

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isobutyl phthalate (MiBP) (creatinine corrected) (2001 – 2010)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**3.07** (2.58-3.66)	**2.98** (2.53-3.82)	**5.82** (4.91-6.99)	**10.6** (8.28-13.3)	**16.0** (12.6-19.4)	677
	03-04	**4.34** (3.47-5.43)	**4.47** (3.53-5.24)	**7.75** (6.33-9.69)	**13.1** (11.9-16.8)	**23.3** (17.9-26.1)	652
	05-06	**6.19** (5.24-7.31)	**6.17** (5.59-7.02)	**10.9** (9.61-12.3)	**18.6** (17.1-21.5)	**28.3** (23.7-36.2)	637
	07-08	**9.07** (7.87-10.5)	**8.94** (8.07-10.3)	**14.6** (12.4-18.0)	**25.9** (21.1-32.4)	**36.1** (28.0-42.3)	531
	09-10	**9.27** (8.37-10.3)	**8.95** (8.00-10.0)	**14.6** (12.8-17.3)	**25.6** (23.1-28.2)	**40.6** (28.7-47.4)	566
Non-Hispanic blacks	01-02	**3.44** (3.20-3.69)	**3.52** (2.95-3.81)	**6.11** (5.03-7.04)	**10.6** (8.94-12.4)	**15.6** (12.6-19.7)	703
	03-04	**4.74** (4.07-5.51)	**4.65** (4.10-5.30)	**7.81** (6.38-10.0)	**15.2** (10.8-18.4)	**19.9** (15.7-28.7)	699
	05-06	**5.88** (5.12-6.76)	**5.86** (5.03-7.03)	**9.74** (8.21-11.3)	**14.9** (12.0-19.9)	**21.4** (14.9-29.7)	678
	07-08	**8.28** (7.20-9.52)	**8.96** (8.33-9.71)	**14.4** (12.9-15.7)	**21.6** (20.3-24.3)	**29.6** (24.3-37.7)	597
	09-10	**10.1** (8.76-11.7)	**10.5** (9.41-11.6)	**15.2** (12.9-19.2)	**24.1** (19.3-32.2)	**33.2** (26.3-42.0)	516
Non-Hispanic whites	01-02	**2.31** (2.11-2.52)	**2.20** (2.01-2.43)	**3.80** (3.53-4.39)	**7.30** (6.72-7.78)	**10.7** (9.62-12.6)	1216
	03-04	**3.13** (2.76-3.54)	**3.17** (2.76-3.72)	**5.28** (4.55-6.21)	**8.92** (7.64-10.3)	**11.8** (10.2-15.1)	1088
	05-06	**4.64** (4.25-5.07)	**4.58** (4.35-4.91)	**8.28** (7.45-9.01)	**13.7** (12.2-15.6)	**18.8** (16.9-22.2)	1038
	07-08	**6.60** (6.14-7.10)	**6.70** (6.26-7.08)	**10.9** (10.0-12.1)	**17.0** (15.2-20.5)	**24.9** (20.5-29.1)	1077
	09-10	**7.12** (6.62-7.66)	**6.95** (6.51-7.40)	**10.7** (10.1-11.8)	**17.0** (14.6-20.3)	**22.0** (19.1-26.2)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isobutyl phthalate (MiBP) (creatinine corrected) (2011 - 2012)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**6.83** (6.30-7.40)	**6.77** (6.19-7.27)	**11.6** (10.9-12.6)	**19.4** (17.5-22.6)	**27.5** (24.5-31.6)	2487
Age group							
6-11 years	11-12	**11.8** (10.2-13.6)	**12.2** (10.4-14.2)	**18.5** (16.2-22.4)	**31.1** (24.5-46.3)	**46.4** (30.8-70.0)	395
12-19 years	11-12	**7.53** (6.81-8.32)	**7.61** (6.84-8.26)	**11.7** (10.9-13.8)	**19.9** (14.9-24.8)	**25.6** (20.6-33.5)	388
20 years and older	11-12	**6.34** (5.83-6.89)	**6.19** (5.56-6.85)	**10.8** (9.54-11.6)	**18.1** (15.5-20.1)	**25.2** (23.3-29.9)	1704
Gender							
Males	11-12	**6.13** (5.47-6.86)	**5.91** (5.12-6.88)	**10.7** (8.81-12.2)	**17.6** (14.6-22.4)	**25.8** (22.2-33.3)	1258
Females	11-12	**7.58** (7.03-8.17)	**7.57** (6.94-7.90)	**12.8** (11.6-13.8)	**21.2** (18.5-24.5)	**28.5** (25.2-31.6)	1229
Race/ethnicity							
Mexican Americans	11-12	**7.57** (6.49-8.81)	**7.00** (5.61-8.77)	**12.3** (9.74-15.2)	**18.4** (15.2-30.8)	**33.1** (18.0-61.6)	316
Non-Hispanic blacks	11-12	**7.69** (6.69-8.83)	**7.83** (6.73-8.89)	**13.2** (10.6-15.4)	**20.6** (17.1-26.9)	**30.9** (24.5-35.8)	665
Non-Hispanic whites	11-12	**6.36** (5.68-7.12)	**6.12** (5.43-6.93)	**11.0** (9.52-11.8)	**18.5** (14.8-22.9)	**25.8** (21.2-33.8)	811
All Hispanics	11-12	**8.09** (6.94-9.43)	**8.02** (6.80-9.43)	**13.0** (10.6-15.9)	**21.0** (15.6-30.5)	**30.5** (20.5-45.0)	571
Asians	11-12	**7.64** (6.21-9.39)	**7.84** (6.10-9.68)	**14.3** (10.5-17.7)	**25.0** (18.2-30.6)	**33.2** (22.5-55.5)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-butyl phthalate (MnBP) (1999 – 2010)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.*

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**24.6** (22.1-27.4)	**26.0** (23.6-29.2)	**51.6** (44.5-60.3)	**98.6** (90.2-114)	**150** (121-169)	2541
	01-02	**18.9** (17.4-20.6)	**20.4** (19.2-21.8)	**40.4** (36.5-44.2)	**73.6** (65.3-85.6)	**108** (94.1-122)	2782
	03-04	**21.1** (19.8-22.5)	**23.2** (21.2-24.8)	**42.7** (38.5-47.2)	**80.7** (70.2-93.9)	**122** (104-137)	2605
	05-06	**19.6** (18.2-21.3)	**20.6** (18.6-23.0)	**40.4** (36.4-44.9)	**71.5** (66.5-79.5)	**107** (96.3-124)	2548
	07-08	**18.9** (17.2-20.7)	**20.0** (18.1-21.9)	**39.1** (34.5-43.4)	**72.4** (64.5-77.7)	**110** (94.5-120)	2604
	09-10	**14.6** (13.2-16.2)	**15.9** (14.3-17.3)	**30.5** (27.2-33.3)	**54.4** (49.7-59.1)	**75.9** (67.5-86.8)	2749
Age group							
6-11 years	99-00	**41.4** (35.6-48.0)	**40.0** (36.2-49.2)	**75.5** (59.1-92.8)	**124** (98.4-159)	**166** (127-279)	328
	01-02	**31.1** (26.6-36.5)	**32.4** (25.6-37.1)	**62.1** (51.3-76.9)	**107** (84.3-136)	**159** (110-290)	393
	03-04	**36.3** (30.7-42.9)	**36.7** (28.5-47.5)	**71.3** (56.9-87.2)	**137** (107-162)	**191** (150-243)	342
	05-06	**30.5** (27.5-33.8)	**32.3** (27.8-35.0)	**57.4** (46.8-65.4)	**93.4** (75.6-130)	**136** (108-181)	356
	07-08	**26.9** (22.5-32.1)	**28.7** (21.3-38.0)	**53.6** (45.6-63.6)	**85.6** (71.4-102)	**119** (91.6-150)	389
	09-10	**21.7** (19.0-24.8)	**23.3** (20.8-26.2)	**44.9** (39.1-49.7)	**83.8** (59.6-121)	**124** (92.3-173)	415
12-19 years	99-00	**36.0** (30.8-42.1)	**36.3** (30.6-44.9)	**68.6** (55.9-79.7)	**119** (90.2-159)	**165** (121-227)	752
	01-02	**25.1** (21.6-29.2)	**26.7** (22.0-32.7)	**52.6** (48.4-60.4)	**92.4** (72.7-121)	**148** (106-185)	742
	03-04	**26.7** (24.1-29.5)	**28.2** (25.2-33.1)	**52.0** (45.3-60.9)	**97.5** (74.7-116)	**134** (110-158)	729
	05-06	**27.5** (24.3-31.3)	**29.0** (23.7-36.6)	**57.2** (48.7-64.9)	**88.6** (75.1-105)	**125** (96.2-154)	702
	07-08	**26.2** (22.5-30.6)	**27.3** (22.1-32.8)	**51.7** (46.2-63.8)	**111** (77.7-132)	**149** (103-188)	401
	09-10	**18.9** (16.1-22.2)	**22.3** (19.4-24.4)	**37.2** (31.3-43.4)	**61.7** (52.8-73.2)	**81.4** (68.9-86.3)	420
20 years and older	99-00	**21.6** (19.0-24.5)	**23.1** (19.7-26.1)	**46.3** (36.9-53.6)	**95.0** (78.7-111)	**143** (117-161)	1461
	01-02	**17.0** (15.4-18.8)	**19.1** (17.1-20.4)	**35.1** (31.6-40.2)	**64.8** (57.3-79.7)	**95.4** (84.6-113)	1647
	03-04	**19.0** (17.7-20.5)	**20.7** (18.9-22.9)	**38.4** (35.7-42.7)	**74.7** (64.1-82.6)	**108** (90.7-127)	1534
	05-06	**17.7** (16.0-19.6)	**18.4** (16.6-20.6)	**36.7** (32.5-41.4)	**65.1** (55.4-74.3)	**101** (84.3-121)	1490
	07-08	**17.2** (15.6-19.1)	**18.6** (16.7-20.3)	**34.5** (31.5-39.1)	**63.8** (56.4-72.5)	**98.3** (83.0-115)	1814
	09-10	**13.5** (12.0-15.1)	**14.5** (13.0-16.0)	**28.1** (24.1-32.0)	**50.0** (44.1-56.1)	**68.9** (60.6-77.3)	1914
Gender							
Males	99-00	**22.0** (20.1-24.1)	**23.2** (20.4-26.3)	**43.1** (36.6-49.5)	**84.4** (71.3-96.2)	**116** (97.8-132)	1215
	01-02	**17.7** (16.0-19.6)	**19.3** (17.3-21.0)	**34.5** (30.3-40.6)	**62.1** (54.1-75.5)	**95.2** (75.5-117)	1371
	03-04	**20.0** (18.1-22.0)	**21.1** (19.0-24.0)	**39.4** (35.5-43.4)	**65.5** (59.0-73.0)	**95.9** (79.8-111)	1250
	05-06	**19.8** (18.4-21.4)	**20.7** (19.0-23.0)	**38.5** (34.6-42.0)	**63.8** (56.8-72.0)	**96.2** (79.0-113)	1270
	07-08	**18.4** (16.8-20.3)	**19.0** (17.3-21.3)	**36.0** (32.5-40.4)	**60.9** (52.8-68.8)	**88.3** (72.6-110)	1294
	09-10	**14.5** (13.0-16.3)	**15.4** (13.7-16.9)	**28.4** (25.9-31.2)	**51.7** (44.3-54.8)	**68.9** (58.9-78.0)	1399
Females	99-00	**27.3** (23.6-31.5)	**30.0** (25.9-33.3)	**59.7** (51.6-69.6)	**120** (98.3-145)	**167** (143-223)	1326
	01-02	**20.2** (18.2-22.4)	**21.7** (19.7-24.3)	**46.7** (43.1-51.1)	**85.0** (72.7-92.5)	**121** (106-136)	1411
	03-04	**22.2** (21.2-23.3)	**24.4** (23.4-25.8)	**47.3** (42.7-53.0)	**95.9** (79.9-114)	**137** (122-156)	1355
	05-06	**19.5** (17.2-22.0)	**20.4** (17.1-24.7)	**42.3** (36.7-52.0)	**83.2** (71.0-90.2)	**124** (101-137)	1278
	07-08	**19.3** (17.2-21.7)	**20.8** (18.1-23.2)	**42.5** (35.6-50.6)	**83.7** (68.6-109)	**132** (109-151)	1310
	09-10	**14.7** (13.1-16.5)	**16.4** (13.9-19.3)	**32.7** (29.9-37.1)	**57.7** (52.7-63.9)	**86.2** (68.9-113)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.9, 1.1, 0.4, 0.6, 0.6, and 0.4 respectively.

*In the 1999-2000 survey period, concentrations of mono-isobutyl and mono-n-butyl phthalates were measured together and expressed as the combined value, monobutyl phthalate (MBP)

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-butyl phthalate (MnBP) (1999 – 2010)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.*

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**23.4** (21.8-25.1)	**26.3** (23.9-28.1)	**48.1** (41.2-56.7)	**92.2** (78.9-101)	**117** (104-131)	814
	01-02	**20.1** (16.6-24.5)	**23.1** (18.0-26.5)	**42.1** (34.0-51.5)	**77.1** (62.9-92.5)	**112** (84.6-143)	677
	03-04	**24.1** (19.8-29.5)	**26.9** (20.2-32.0)	**47.4** (38.0-58.5)	**85.6** (61.7-117)	**127** (99.8-165)	652
	05-06	**22.4** (18.6-27.0)	**23.5** (19.0-29.0)	**45.4** (37.1-55.4)	**90.2** (71.1-119)	**132** (106-174)	637
	07-08	**22.2** (18.5-26.7)	**22.4** (17.8-27.1)	**43.8** (36.2-50.4)	**76.4** (59.8-106)	**145** (85.6-223)	531
	09-10	**17.2** (15.3-19.4)	**17.3** (14.3-20.9)	**34.3** (31.4-38.8)	**56.1** (47.7-67.9)	**80.0** (65.1-107)	566
Non-Hispanic blacks	99-00	**37.0** (31.9-42.9)	**38.7** (33.4-44.5)	**78.2** (58.7-91.8)	**118** (108-143)	**167** (143-197)	603
	01-02	**29.6** (26.6-33.1)	**31.5** (28.7-34.1)	**58.3** (51.2-63.4)	**93.2** (79.5-121)	**138** (110-184)	703
	03-04	**30.1** (28.4-31.9)	**31.5** (29.7-34.1)	**64.1** (58.3-67.1)	**106** (94.8-119)	**144** (115-168)	699
	05-06	**27.1** (23.1-31.8)	**28.5** (25.0-31.2)	**53.1** (39.9-65.8)	**105** (77.3-135)	**143** (118-183)	678
	07-08	**25.0** (21.9-28.4)	**25.8** (22.0-30.4)	**52.4** (43.9-59.5)	**91.2** (75.6-106)	**114** (96.8-148)	597
	09-10	**21.9** (19.2-25.0)	**23.2** (20.0-26.3)	**42.4** (37.1-47.5)	**69.1** (59.4-84.2)	**103** (74.8-134)	516
Non-Hispanic whites	99-00	**21.8** (19.3-24.6)	**23.2** (19.5-27.5)	**46.3** (37.5-53.3)	**90.2** (74.7-106)	**142** (111-161)	912
	01-02	**17.6** (16.0-19.3)	**19.2** (17.0-21.0)	**36.6** (32.4-42.6)	**69.2** (59.2-87.6)	**107** (89.8-123)	1216
	03-04	**18.9** (17.6-20.3)	**20.7** (18.9-22.8)	**38.4** (35.5-42.7)	**71.3** (60.1-80.0)	**101** (90.7-124)	1088
	05-06	**17.8** (16.2-19.5)	**18.6** (16.9-20.7)	**37.8** (33.1-42.1)	**65.4** (55.4-73.9)	**95.9** (79.5-113)	1038
	07-08	**17.8** (16.2-19.5)	**18.9** (17.2-20.9)	**36.7** (32.3-41.4)	**68.0** (58.9-77.2)	**110** (86.5-120)	1077
	09-10	**13.0** (11.6-14.5)	**14.1** (12.7-15.8)	**26.6** (23.4-31.0)	**48.8** (42.2-54.3)	**67.5** (57.6-76.5)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.9, 1.1, 0.4, 0.6, 0.6, and 0.4 respectively.

*In the 1999-2000 survey period, concentrations of mono-isobutyl and mono-n-butyl phthalates were measured together and expressed as the combined value, monobutyl phthalate (MBP)

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-butyl phthalate (MnBP) (2011 - 2012)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**7.61** (6.64-8.72)	**9.20** (8.10-10.1)	**20.0** (17.8-22.1)	**35.5** (31.3-41.8)	**55.0** (44.3-68.5)	2489
Age group							
6-11 years	11-12	**11.1** (8.73-14.2)	**14.9** (10.8-17.1)	**25.7** (23.2-32.1)	**58.6** (39.6-71.4)	**97.0** (59.3-163)	396
12-19 years	11-12	**9.69** (7.91-11.9)	**12.2** (10.0-14.7)	**24.7** (21.0-30.7)	**44.2** (36.1-56.9)	**60.7** (51.3-83.4)	388
20 years and older	11-12	**7.04** (6.04-8.21)	**8.20** (7.20-9.60)	**18.2** (15.7-20.7)	**31.8** (27.3-38.3)	**46.4** (37.7-64.3)	1705
Gender							
Males	11-12	**8.14** (7.03-9.43)	**9.20** (8.50-10.1)	**20.1** (17.6-23.2)	**34.0** (29.7-43.1)	**56.9** (38.5-75.1)	1259
Females	11-12	**7.14** (6.05-8.41)	**9.00** (7.10-10.6)	**19.7** (17.5-21.9)	**36.1** (30.3-43.1)	**51.8** (44.3-68.0)	1230
Race/ethnicity							
Mexican Americans	11-12	**8.96** (7.58-10.6)	**10.1** (7.70-13.1)	**20.6** (15.2-26.4)	**35.8** (29.1-45.4)	**50.3** (38.9-83.4)	316
Non-Hispanic blacks	11-12	**13.2** (11.2-15.6)	**15.3** (13.3-17.9)	**29.7** (26.4-32.8)	**53.1** (43.6-67.3)	**76.4** (60.3-100)	665
Non-Hispanic whites	11-12	**6.47** (5.66-7.39)	**7.60** (6.70-8.50)	**17.1** (15.2-18.4)	**30.3** (25.9-33.4)	**43.1** (32.3-59.3)	813
All Hispanics	11-12	**9.78** (8.15-11.7)	**11.0** (8.80-14.4)	**23.3** (20.0-27.0)	**38.9** (31.8-50.6)	**60.5** (45.4-93.3)	571
Asians	11-12	**6.77** (5.05-9.06)	**8.20** (5.80-10.8)	**18.9** (13.5-29.1)	**40.5** (29.1-58.6)	**64.3** (45.9-104)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.4.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-butyl phthalate (MnBP) (creatinine corrected) (1999 – 2010)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.*

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**22.4** (20.6-24.4)	**21.9** (19.8-24.3)	**38.9** (35.0-41.8)	**68.3** (60.3-78.3)	**97.7** (81.4-131)	2541
	01-02	**17.8** (16.7-19.0)	**17.4** (16.3-18.4)	**30.3** (28.1-32.3)	**52.4** (47.4-61.0)	**81.3** (71.0-92.5)	2782
	03-04	**19.8** (18.5-21.2)	**19.3** (17.7-20.8)	**33.9** (30.9-38.5)	**59.0** (52.9-68.1)	**91.6** (74.1-115)	2605
	05-06	**19.2** (18.0-20.4)	**18.3** (16.8-19.8)	**30.8** (29.0-33.0)	**50.8** (47.8-56.6)	**77.8** (67.2-94.8)	2548
	07-08	**19.0** (17.7-20.5)	**18.8** (17.2-20.0)	**31.4** (28.7-34.1)	**52.0** (46.4-59.5)	**77.1** (64.2-88.6)	2604
	09-10	**15.3** (14.0-16.6)	**14.4** (13.4-15.8)	**23.6** (21.7-25.2)	**38.7** (34.1-45.8)	**57.4** (49.8-69.9)	2749
Age group							
6-11 years	99-00	**41.9** (37.4-47.1)	**39.1** (34.3-49.0)	**65.9** (56.7-80.0)	**108** (71.2-179)	**159** (102-263)	328
	01-02	**35.4** (31.7-39.6)	**35.1** (29.3-38.9)	**55.4** (50.1-62.3)	**84.0** (69.0-113)	**147** (93.8-235)	393
	03-04	**38.4** (33.8-43.6)	**39.0** (34.7-42.6)	**59.3** (52.9-68.1)	**104** (83.6-119)	**137** (108-198)	342
	05-06	**33.6** (30.8-36.6)	**33.9** (30.6-37.4)	**50.6** (45.0-58.3)	**78.5** (66.8-111)	**128** (73.4-172)	356
	07-08	**33.1** (27.6-39.7)	**34.2** (27.5-41.3)	**51.9** (42.6-63.8)	**81.8** (61.3-101)	**109** (83.1-159)	389
	09-10	**28.3** (25.0-32.0)	**26.7** (24.0-31.1)	**47.8** (39.4-53.9)	**78.6** (59.8-101)	**130** (98.9-156)	415
12-19 years	99-00	**24.3** (21.2-27.8)	**23.7** (20.6-27.4)	**37.6** (31.6-43.8)	**63.3** (52.4-76.4)	**88.1** (61.5-142)	752
	01-02	**19.4** (17.3-21.7)	**20.3** (17.5-22.3)	**34.9** (30.5-37.9)	**53.4** (45.2-73.9)	**89.7** (60.3-106)	742
	03-04	**20.0** (18.7-21.3)	**19.8** (18.2-21.7)	**30.7** (27.9-34.8)	**52.7** (43.4-65.4)	**74.4** (56.0-90.9)	729
	05-06	**20.5** (19.0-22.2)	**21.2** (18.8-22.9)	**31.9** (29.6-33.8)	**49.3** (42.1-56.4)	**70.2** (52.0-108)	702
	07-08	**20.4** (18.4-22.6)	**21.9** (18.7-25.7)	**33.8** (30.0-38.5)	**50.7** (42.4-64.0)	**72.4** (50.7-84.5)	401
	09-10	**15.2** (13.8-16.8)	**15.3** (13.8-18.4)	**22.5** (21.1-24.8)	**31.8** (28.2-34.6)	**42.3** (33.8-51.2)	420
20 years and older	99-00	**20.4** (18.6-22.4)	**19.5** (18.1-21.4)	**34.9** (30.3-40.0)	**62.4** (53.4-72.1)	**91.0** (70.4-135)	1461
	01-02	**16.1** (15.0-17.3)	**15.5** (14.2-16.5)	**26.3** (24.2-28.6)	**44.2** (38.7-51.1)	**71.6** (61.2-85.6)	1647
	03-04	**18.3** (17.0-19.6)	**17.7** (16.6-19.2)	**31.0** (27.4-34.0)	**53.3** (46.5-64.2)	**83.8** (65.3-114)	1534
	05-06	**17.8** (16.4-19.2)	**16.8** (15.6-18.4)	**28.1** (25.3-30.9)	**46.1** (41.5-53.0)	**74.3** (55.4-94.8)	1490
	07-08	**17.7** (16.3-19.2)	**17.2** (15.7-18.8)	**28.2** (25.8-30.5)	**46.7** (42.0-53.3)	**71.8** (57.8-89.5)	1814
	09-10	**14.3** (13.0-15.7)	**13.5** (12.5-14.8)	**21.6** (20.0-23.8)	**34.5** (30.1-40.2)	**50.9** (42.2-67.7)	1914
Gender							
Males	99-00	**17.3** (16.1-18.6)	**17.0** (15.5-18.8)	**28.6** (25.8-32.1)	**49.3** (42.6-53.5)	**64.7** (57.3-71.5)	1215
	01-02	**14.4** (13.5-15.4)	**13.7** (12.9-14.9)	**22.9** (20.8-24.6)	**39.9** (35.6-44.0)	**60.0** (50.5-76.2)	1371
	03-04	**15.7** (14.5-16.9)	**14.8** (13.6-16.0)	**25.4** (23.6-28.1)	**41.4** (37.0-47.5)	**59.4** (50.3-81.5)	1250
	05-06	**15.9** (15.1-16.8)	**15.4** (14.2-16.4)	**24.9** (23.1-27.0)	**38.6** (35.7-42.3)	**51.2** (46.1-63.5)	1270
	07-08	**15.5** (14.4-16.8)	**14.7** (13.4-16.3)	**24.9** (22.6-27.6)	**40.8** (35.2-44.9)	**55.2** (46.1-65.2)	1294
	09-10	**13.0** (12.0-14.2)	**12.8** (11.7-13.6)	**19.9** (18.1-21.2)	**30.3** (28.4-33.2)	**45.3** (39.7-53.8)	1399
Females	99-00	**28.6** (25.3-32.3)	**28.8** (25.5-30.5)	**50.6** (41.9-56.3)	**84.3** (69.2-106)	**134** (93.6-155)	1326
	01-02	**21.7** (19.6-23.9)	**21.6** (19.7-23.6)	**35.8** (33.0-38.7)	**64.9** (58.9-70.2)	**91.5** (81.4-103)	1411
	03-04	**24.8** (22.9-26.8)	**24.1** (21.6-26.8)	**42.9** (39.2-48.9)	**74.9** (64.2-86.6)	**117** (83.6-139)	1355
	05-06	**22.9** (20.9-25.1)	**21.5** (19.4-24.6)	**37.1** (33.3-41.9)	**67.2** (56.8-74.4)	**99.6** (77.8-128)	1278
	07-08	**23.1** (21.0-25.5)	**22.8** (20.9-25.2)	**38.0** (32.7-43.1)	**62.7** (52.1-78.5)	**89.8** (76.2-126)	1310
	09-10	**17.8** (16.0-19.7)	**17.6** (15.1-19.4)	**27.1** (24.4-30.3)	**47.8** (37.9-53.8)	**70.6** (53.8-91.5)	1350

*In the 1999-2000 survey period, concentrations of mono-isobutyl and mono-n-butyl phthalates were measured together and expressed as the combined value, monobutyl phthalate (MBP)

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-butyl phthalate (MnBP) (creatinine corrected) (1999 – 2010)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.*

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**21.2** (19.3-23.3)	**20.0** (18.2-22.9)	**40.1** (32.6-44.3)	**63.6** (57.5-70.1)	**82.9** (73.9-100)	814
	01-02	**19.0** (16.2-22.2)	**19.2** (16.3-21.9)	**33.7** (28.3-39.6)	**61.0** (43.9-84.0)	**86.7** (60.6-128)	677
	03-04	**21.8** (17.7-26.8)	**20.4** (17.4-24.0)	**37.6** (29.6-50.1)	**75.3** (55.6-92.0)	**96.3** (76.4-164)	652
	05-06	**20.1** (17.8-22.8)	**19.1** (16.4-23.0)	**34.3** (29.2-42.6)	**64.8** (54.6-75.9)	**98.1** (70.2-154)	637
	07-08	**21.7** (17.7-26.5)	**20.9** (16.4-27.1)	**36.9** (29.1-46.7)	**59.5** (47.1-88.9)	**102** (63.4-161)	531
	09-10	**17.1** (15.5-18.8)	**15.0** (14.0-16.3)	**27.4** (23.6-31.6)	**51.0** (42.9-69.6)	**88.1** (59.8-100)	566
Non-Hispanic blacks	99-00	**23.9** (21.3-26.8)	**25.0** (20.7-28.1)	**42.2** (35.9-49.6)	**70.0** (61.1-83.9)	**96.2** (83.9-105)	603
	01-02	**20.8** (18.8-23.1)	**20.2** (19.2-22.8)	**34.5** (30.9-36.8)	**62.8** (50.6-74.6)	**85.6** (72.1-99.0)	703
	03-04	**21.4** (19.5-23.4)	**22.0** (19.6-24.8)	**35.4** (31.6-42.7)	**65.7** (54.0-75.3)	**94.0** (71.1-128)	699
	05-06	**19.1** (16.4-22.1)	**18.5** (16.2-20.7)	**30.1** (24.9-39.5)	**54.6** (42.0-81.3)	**84.7** (51.3-125)	678
	07-08	**19.4** (17.3-21.7)	**19.2** (16.8-22.0)	**30.5** (27.0-36.5)	**50.7** (42.8-60.4)	**78.3** (59.3-125)	597
	09-10	**15.9** (14.5-17.4)	**15.3** (13.5-18.6)	**24.9** (22.6-27.2)	**37.6** (33.8-45.4)	**51.2** (44.7-70.6)	516
Non-Hispanic whites	99-00	**21.3** (19.1-23.8)	**20.5** (18.6-23.2)	**36.4** (31.5-41.0)	**67.1** (56.7-78.4)	**97.7** (73.5-142)	912
	01-02	**17.4** (16.2-18.6)	**16.5** (15.3-17.8)	**29.0** (26.6-32.2)	**51.1** (46.0-60.0)	**81.4** (68.1-99.0)	1216
	03-04	**18.6** (17.3-20.1)	**17.9** (16.7-19.8)	**31.6** (27.7-37.8)	**53.3** (48.2-61.5)	**81.5** (64.2-108)	1088
	05-06	**18.7** (17.5-19.9)	**17.9** (16.3-19.5)	**29.7** (27.5-32.0)	**48.7** (42.2-55.4)	**74.3** (58.3-94.5)	1038
	07-08	**18.5** (17.3-19.9)	**18.1** (16.6-19.6)	**30.4** (27.3-33.3)	**50.9** (43.6-61.0)	**75.8** (62.6-88.0)	1077
	09-10	**14.6** (13.5-15.7)	**13.9** (13.2-15.0)	**22.1** (20.3-24.2)	**35.3** (30.9-40.6)	**52.5** (45.8-63.0)	1206

*In the 1999-2000 survey period, concentrations of mono-isobutyl and mono-n-butyl phthalates were measured together and expressed as the combined value, monobutyl phthalate (MBP)

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-butyl phthalate (MnBP) (creatinine corrected) (2011 - 2012)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**8.66** (7.79-9.62)	**9.04** (8.30-9.92)	**15.8** (15.0-17.3)	**27.9** (24.2-30.9)	**41.2** (33.0-51.8)	2487
Age group							
6-11 years	11-12	**15.9** (13.0-19.5)	**17.7** (15.0-20.6)	**29.8** (24.8-34.4)	**51.2** (38.4-66.4)	**73.3** (47.3-114)	395
12-19 years	11-12	**9.44** (8.71-10.2)	**10.5** (8.61-12.7)	**15.7** (14.9-17.8)	**28.1** (22.0-30.0)	**37.0** (29.2-46.7)	388
20 years and older	11-12	**8.00** (7.09-9.01)	**8.32** (7.64-9.12)	**14.6** (13.0-16.0)	**23.4** (21.4-27.9)	**36.2** (29.4-47.3)	1704
Gender							
Males	11-12	**7.61** (6.65-8.69)	**8.07** (7.54-8.85)	**13.7** (11.9-15.5)	**22.7** (19.3-26.3)	**34.6** (24.1-53.0)	1258
Females	11-12	**9.81** (8.86-10.9)	**10.3** (9.18-11.5)	**18.1** (16.8-19.7)	**31.8** (28.1-34.6)	**44.8** (38.4-54.6)	1229
Race/ethnicity							
Mexican Americans	11-12	**10.1** (8.62-11.8)	**10.7** (8.62-12.9)	**17.6** (14.2-19.7)	**32.6** (24.7-46.4)	**55.9** (35.1-76.6)	316
Non-Hispanic blacks	11-12	**10.3** (8.80-12.0)	**11.1** (9.27-12.6)	**19.1** (17.0-21.5)	**31.7** (25.7-37.0)	**43.5** (34.0-56.0)	665
Non-Hispanic whites	11-12	**7.85** (6.92-8.91)	**8.13** (7.43-8.99)	**14.5** (13.0-15.9)	**22.9** (21.4-27.9)	**34.6** (27.9-46.4)	811
All Hispanics	11-12	**11.0** (9.71-12.3)	**11.2** (10.3-12.5)	**19.3** (15.8-24.9)	**36.1** (28.8-47.4)	**55.6** (42.1-65.6)	571
Asians	11-12	**9.07** (7.35-11.2)	**9.84** (7.57-11.9)	**19.0** (14.0-24.5)	**35.6** (25.9-45.0)	**46.2** (41.5-73.3)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-cyclohexyl phthalate (MCHP) (1999 – 2010)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**2.21** (<LOD-3.42)	2541
	01-02	*	< LOD	< LOD	**.804** (.603-1.01)	**1.01** (.804-1.21)	2782
	03-04	*	< LOD	< LOD	< LOD	**.603** (.402-.804)	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
	07-08	*	< LOD	< LOD	< LOD	< LOD	2604
	09-10	*	< LOD	< LOD	< LOD	< LOD	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	**2.01** (<LOD-2.21)	**3.42** (2.01-7.64)	328
	01-02	*	< LOD	< LOD	**.804** (.603-1.01)	**1.21** (1.01-1.41)	393
	03-04	*	< LOD	< LOD	**.603** (<LOD-.804)	**1.01** (.603-1.01)	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
	09-10	*	< LOD	< LOD	< LOD	**.960** (.640-1.57)	415
12-19 years	99-00	*	< LOD	< LOD	**2.01** (<LOD-3.02)	**3.42** (2.01-5.03)	752
	01-02	*	< LOD	< LOD	**.804** (.603-1.01)	**1.01** (.804-1.21)	742
	03-04	*	< LOD	< LOD	**.402** (<LOD-.603)	**.804** (.603-1.21)	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	401
	09-10	*	< LOD	< LOD	< LOD	< LOD	420
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1461
	01-02	*	< LOD	< LOD	**.804** (<LOD-1.01)	**1.01** (.804-1.21)	1647
	03-04	*	< LOD	< LOD	< LOD	**.603** (.402-.603)	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
	07-08	*	< LOD	< LOD	< LOD	< LOD	1814
	09-10	*	< LOD	< LOD	< LOD	< LOD	1914
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**2.21** (<LOD-4.02)	1215
	01-02	*	< LOD	< LOD	**.804** (.603-1.01)	**1.01** (.804-1.21)	1371
	03-04	*	< LOD	< LOD	< LOD	**.603** (.603-.804)	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1399
Females	99-00	*	< LOD	< LOD	< LOD	**2.21** (<LOD-3.82)	1326
	01-02	*	< LOD	< LOD	**.804** (<LOD-.804)	**1.01** (.804-1.01)	1411
	03-04	*	< LOD	< LOD	< LOD	**.603** (.402-1.01)	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	< LOD	1310
	09-10	*	< LOD	< LOD	< LOD	< LOD	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.81, 0.603, 0.402, 0.603, 0.603 and 0.402 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 2.01 for survey periods 1999-2008 compared with results previously released.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DCHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-cyclohexyl phthalate (MCHP) (1999 – 2010)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	814
	01-02	*	**< LOD**	**< LOD**	**.804** (<LOD-1.01)	**1.01** (.603-1.41)	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.603** (.402-1.01)	652
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.440** (<LOD-.640)	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**2.21** (1.81-2.41)	603
	01-02	*	**< LOD**	**< LOD**	**.804** (.603-1.01)	**1.01** (.804-1.41)	703
	03-04	*	**< LOD**	**< LOD**	**.603** (.402-.603)	**.804** (.603-1.01)	699
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	678
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	597
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.480** (<LOD-.620)	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**2.01** (<LOD-3.42)	912
	01-02	*	**< LOD**	**< LOD**	**.804** (<LOD-.804)	**1.01** (.804-1.21)	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.603** (.402-.804)	1088
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1077
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.81, 0.603, 0.402, 0.603, 0.603 and 0.402 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 2.01 for survey periods 1999-2008 compared with results previously released.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DCHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-cyclohexyl phthalate (MCHP) (creatinine corrected) (1999 – 2010)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**6.03** (<LOD-6.69)	2541
	01-02	*	< LOD	< LOD	**1.23** (1.07-1.39)	**1.83** (1.55-2.01)	2782
	03-04	*	< LOD	< LOD	< LOD	**.905** (.804-1.01)	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
	07-08	*	< LOD	< LOD	< LOD	< LOD	2604
	09-10	*	< LOD	< LOD	< LOD	< LOD	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	**3.10** (<LOD-4.70)	**5.67** (3.10-12.9)	328
	01-02	*	< LOD	< LOD	**1.39** (1.03-1.49)	**1.89** (1.39-2.35)	393
	03-04	*	< LOD	< LOD	**.744** (<LOD-1.07)	**1.07** (.704-1.67)	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
	09-10	*	< LOD	< LOD	< LOD	**1.80** (1.34-2.55)	415
12-19 years	99-00	*	< LOD	< LOD	**2.45** (<LOD-3.10)	**3.36** (2.73-3.66)	752
	01-02	*	< LOD	< LOD	**.945** (.764-1.33)	**1.55** (1.07-2.37)	742
	03-04	*	< LOD	< LOD	**.442** (<LOD-.543)	**.764** (.482-1.25)	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	401
	09-10	*	< LOD	< LOD	< LOD	< LOD	420
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1461
	01-02	*	< LOD	< LOD	**1.27** (<LOD-1.39)	**1.83** (1.55-2.11)	1647
	03-04	*	< LOD	< LOD	< LOD	**.905** (.804-1.01)	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
	07-08	*	< LOD	< LOD	< LOD	< LOD	1814
	09-10	*	< LOD	< LOD	< LOD	< LOD	1914
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**4.30** (<LOD-6.35)	1215
	01-02	*	< LOD	< LOD	**1.03** (.844-1.33)	**1.77** (1.35-2.13)	1371
	03-04	*	< LOD	< LOD	< LOD	**.663** (.583-1.01)	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1399
Females	99-00	*	< LOD	< LOD	< LOD	**6.69** (<LOD-7.10)	1326
	01-02	*	< LOD	< LOD	**1.35** (<LOD-1.55)	**1.83** (1.61-2.21)	1411
	03-04	*	< LOD	< LOD	< LOD	**1.01** (.844-1.19)	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	< LOD	1310
	09-10	*	< LOD	< LOD	< LOD	< LOD	1350

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 2.01 for survey periods 1999-2008 compared with results previously released.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DCHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-cyclohexyl phthalate (MCHP) (creatinine corrected) (1999 – 2010)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	814
	01-02	*	**< LOD**	**< LOD**	**1.19** (<LOD-1.39)	**1.91** (1.59-2.23)	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.784** (.623-1.13)	652
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**1.20** (<LOD-1.56)	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**2.87** (2.25-3.50)	603
	01-02	*	**< LOD**	**< LOD**	**.824** (.724-.985)	**1.19** (1.01-1.43)	703
	03-04	*	**< LOD**	**< LOD**	**.503** (.342-.623)	**.663** (.523-.945)	699
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	678
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	597
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.880** (<LOD-1.08)	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**6.35** (<LOD-7.10)	912
	01-02	*	**< LOD**	**< LOD**	**1.27** (<LOD-1.49)	**1.83** (1.55-2.13)	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.965** (.844-1.07)	1088
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1077
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 2.01 for survey periods 1999-2008 compared with results previously released.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DCHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP) (1999 – 2010)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**118** (103-135)	**108** (90.0-132)	**300** (244-355)	**830** (664-977)	**1870** (1420-2490)	2536
	01-02	**117** (105-131)	**112** (93.0-128)	**307** (274-348)	**813** (688-947)	**1650** (1230-2130)	2782
	03-04	**127** (112-145)	**115** (99.9-137)	**332** (302-366)	**909** (769-1150)	**1780** (1420-2180)	2605
	05-06	**108** (95.5-123)	**102** (83.4-121)	**284** (257-323)	**750** (707-825)	**1410** (1140-1830)	2548
	07-08	**90.4** (80.3-102)	**81.1** (70.8-93.5)	**239** (205-272)	**605** (493-713)	**1180** (821-1760)	2604
	09-10	**64.4** (58.3-71.2)	**54.9** (50.5-62.7)	**163** (145-187)	**485** (374-604)	**988** (805-1180)	2749
Age group							
6-11 years	99-00	**60.3** (49.4-73.6)	**49.8** (41.0-61.8)	**130** (85.2-164)	**249** (192-481)	**499** (250-703)	328
	01-02	**56.2** (47.0-67.2)	**47.5** (40.9-61.1)	**121** (93.7-143)	**297** (208-420)	**533** (377-717)	393
	03-04	**62.9** (54.3-72.9)	**53.9** (46.4-67.9)	**130** (112-159)	**344** (195-377)	**546** (358-949)	342
	05-06	**55.7** (45.7-67.9)	**47.9** (38.3-61.6)	**111** (73.9-147)	**289** (173-368)	**522** (326-719)	356
	07-08	**49.0** (42.4-56.6)	**45.2** (38.5-53.3)	**108** (80.5-135)	**193** (155-227)	**296** (214-359)	389
	09-10	**35.2** (31.2-39.8)	**33.0** (29.8-37.8)	**68.7** (54.3-80.9)	**151** (114-207)	**288** (205-530)	415
12-19 years	99-00	**139** (105-183)	**127** (92.8-169)	**372** (276-540)	**994** (694-1420)	**2150** (1020-2920)	752
	01-02	**130** (105-161)	**121** (97.9-150)	**316** (256-429)	**835** (649-974)	**1360** (969-2020)	742
	03-04	**148** (123-178)	**146** (109-194)	**367** (285-459)	**828** (642-1030)	**1520** (900-2180)	729
	05-06	**126** (108-146)	**114** (96.4-134)	**315** (256-390)	**765** (636-1060)	**1360** (1030-1680)	702
	07-08	**98.6** (79.1-123)	**97.4** (68.3-130)	**214** (173-330)	**477** (356-705)	**821** (511-1270)	401
	09-10	**64.0** (50.1-81.8)	**53.9** (39.0-75.4)	**151** (101-228)	**354** (260-497)	**662** (371-1190)	420
20 years and older	99-00	**125** (108-145)	**119** (92.6-146)	**318** (257-389)	**882** (666-1100)	**2300** (1470-3060)	1456
	01-02	**126** (113-141)	**120** (101-140)	**329** (291-374)	**888** (702-1100)	**1800** (1420-2420)	1647
	03-04	**135** (116-157)	**124** (104-145)	**351** (311-415)	**1050** (807-1370)	**1970** (1480-2510)	1534
	05-06	**114** (99.0-132)	**111** (87.1-131)	**299** (268-346)	**782** (724-901)	**1480** (1140-2080)	1490
	07-08	**95.3** (85.4-106)	**84.7** (75.6-97.8)	**264** (235-299)	**673** (539-823)	**1470** (913-1920)	1814
	09-10	**69.0** (61.8-76.9)	**60.5** (54.0-68.7)	**183** (159-207)	**557** (445-712)	**1110** (875-1350)	1914
Gender							
Males	99-00	**118** (98.5-142)	**102** (78.3-130)	**345** (246-429)	**948** (672-1500)	**2310** (1400-3010)	1214
	01-02	**120** (103-139)	**113** (91.8-131)	**331** (276-398)	**957** (703-1390)	**2040** (1390-2900)	1371
	03-04	**130** (114-148)	**113** (97.8-133)	**354** (296-432)	**1000** (801-1370)	**1920** (1460-2300)	1250
	05-06	**107** (92.1-124)	**95.9** (75.8-120)	**279** (227-340)	**757** (651-855)	**1470** (923-1930)	1270
	07-08	**92.8** (80.1-107)	**81.0** (70.4-93.3)	**245** (194-298)	**659** (481-867)	**1450** (851-1900)	1294
	09-10	**61.0** (54.2-68.6)	**52.8** (45.4-58.3)	**157** (126-202)	**436** (342-586)	**965** (768-1170)	1399
Females	99-00	**118** (102-136)	**115** (91.3-139)	**280** (231-335)	**652** (581-813)	**1470** (903-2560)	1322
	01-02	**115** (101-131)	**110** (91.5-128)	**282** (255-329)	**692** (580-867)	**1230** (982-1650)	1411
	03-04	**125** (106-148)	**120** (90.9-145)	**316** (258-372)	**830** (639-1080)	**1710** (1190-2260)	1355
	05-06	**110** (92.8-130)	**109** (86.8-130)	**291** (252-346)	**734** (671-871)	**1310** (1140-1900)	1278
	07-08	**88.2** (77.8-99.9)	**82.4** (67.6-101)	**233** (202-264)	**553** (462-703)	**1050** (713-1680)	1310
	09-10	**67.8** (60.3-76.4)	**59.6** (52.4-73.7)	**164** (148-192)	**548** (392-675)	**988** (777-1340)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.792, 0.594, 0.264, 0.528, 0.462, and 0.396 respectively.

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.66 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP) (1999 – 2010)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**119** (103-138)	**115** (96.5-138)	**291** (257-357)	**842** (561-996)	**1130** (966-1410)	813
	01-02	**149** (129-173)	**145** (125-174)	**349** (293-435)	**984** (690-1390)	**1730** (1010-2940)	677
	03-04	**176** (158-196)	**164** (140-202)	**394** (345-454)	**1080** (873-1440)	**2010** (1470-2840)	652
	05-06	**163** (130-203)	**161** (124-186)	**384** (310-466)	**1030** (682-1830)	**1930** (1170-3330)	637
	07-08	**122** (105-141)	**111** (82.0-144)	**314** (270-372)	**850** (604-971)	**1180** (971-1520)	531
	09-10	**82.2** (70.0-96.5)	**72.6** (59.6-84.0)	**199** (142-254)	**586** (415-869)	**1300** (818-1760)	566
Non-Hispanic blacks	99-00	**213** (182-249)	**202** (169-231)	**521** (419-626)	**1250** (932-1500)	**2380** (1410-3060)	603
	01-02	**233** (214-253)	**235** (191-269)	**563** (468-718)	**1430** (1070-1630)	**2340** (1860-3350)	703
	03-04	**236** (205-272)	**202** (167-273)	**626** (507-760)	**1650** (1220-1970)	**2880** (1840-3900)	699
	05-06	**219** (189-254)	**199** (163-253)	**522** (440-700)	**1450** (1070-1900)	**2610** (1900-3600)	678
	07-08	**168** (145-195)	**165** (132-202)	**415** (343-493)	**994** (711-1260)	**1920** (1090-3370)	597
	09-10	**156** (130-188)	**137** (113-159)	**405** (276-543)	**1190** (841-1570)	**1930** (1430-3380)	516
Non-Hispanic whites	99-00	**101** (87.6-116)	**88.4** (71.0-104)	**242** (189-318)	**651** (527-882)	**1630** (1050-2560)	908
	01-02	**104** (92.8-117)	**96.8** (78.8-117)	**273** (241-297)	**672** (598-813)	**1530** (1030-1800)	1216
	03-04	**110** (95.4-128)	**97.8** (82.4-115)	**276** (242-315)	**801** (630-975)	**1480** (1050-2170)	1088
	05-06	**91.3** (80.3-104)	**84.2** (69.4-111)	**232** (196-278)	**600** (500-715)	**1140** (757-1550)	1038
	07-08	**78.9** (70.4-88.5)	**68.9** (59.8-80.1)	**199** (175-233)	**506** (429-650)	**880** (670-1500)	1077
	09-10	**52.1** (48.1-56.5)	**45.1** (40.0-51.6)	**127** (106-140)	**309** (259-394)	**768** (468-988)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.792, 0.594, 0.264, 0.528, 0.462, and 0.396 respectively.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.66 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP) (2011 - 2012)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**37.9** (33.0-43.5)	**31.1** (27.3-37.9)	**96.4** (83.7-114)	**277** (227-367)	**570** (419-738)	2489
Age group							
6-11 years	11-12	**23.4** (18.7-29.2)	**24.5** (18.9-28.7)	**49.8** (38.4-70.6)	**112** (85.0-165)	**199** (139-277)	396
12-19 years	11-12	**36.2** (27.9-47.0)	**30.6** (24.0-40.4)	**86.7** (59.0-129)	**216** (155-256)	**378** (254-642)	388
20 years and older	11-12	**40.2** (34.9-46.5)	**32.0** (27.6-40.9)	**105** (93.7-119)	**315** (253-406)	**688** (460-801)	1705
Gender							
Males	11-12	**38.1** (33.3-43.7)	**29.6** (26.1-35.9)	**93.8** (75.3-118)	**262** (227-369)	**566** (371-875)	1259
Females	11-12	**37.7** (30.6-46.4)	**32.5** (25.2-45.3)	**101** (82.8-118)	**295** (207-406)	**596** (447-727)	1230
Race/ethnicity							
Mexican Americans	11-12	**49.5** (39.3-62.3)	**39.3** (34.0-47.0)	**120** (69.8-163)	**375** (259-561)	**874** (394-1420)	316
Non-Hispanic blacks	11-12	**89.2** (77.9-102)	**82.1** (71.0-93.2)	**196** (166-229)	**524** (381-669)	**942** (653-1790)	665
Non-Hispanic whites	11-12	**30.4** (26.0-35.6)	**25.4** (20.1-29.2)	**77.6** (64.2-92.9)	**221** (166-290)	**460** (290-697)	813
All Hispanics	11-12	**55.5** (44.2-69.6)	**47.6** (38.0-59.6)	**132** (99.9-180)	**406** (334-537)	**809** (461-1240)	571
Asians	11-12	**23.3** (17.9-30.3)	**18.8** (13.9-28.3)	**60.7** (38.6-89.5)	**166** (109-289)	**405** (175-1080)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP) (creatinine corrected) (1999 – 2010)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**107** (98.0-118)	**93.0** (85.4-104)	**237** (203-278)	**598** (497-781)	**1290** (1100-1530)	2536
	01-02	**110** (99.3-122)	**97.4** (87.9-107)	**256** (218-287)	**640** (532-778)	**1220** (959-1450)	2782
	03-04	**120** (107-133)	**101** (90.1-117)	**298** (254-332)	**733** (587-853)	**1350** (1080-1680)	2605
	05-06	**106** (95.3-117)	**92.3** (80.9-104)	**242** (211-286)	**625** (528-711)	**1140** (942-1310)	2548
	07-08	**91.1** (82.6-101)	**75.3** (68.6-83.5)	**204** (185-231)	**547** (433-680)	**987** (821-1190)	2604
	09-10	**67.2** (60.5-74.7)	**56.1** (48.9-66.8)	**150** (128-172)	**433** (373-524)	**850** (709-999)	2749
Age group							
6-11 years	99-00	**61.1** (51.4-72.7)	**52.5** (43.3-72.4)	**109** (83.6-137)	**225** (145-365)	**412** (264-517)	328
	01-02	**64.0** (54.4-75.2)	**53.6** (43.7-69.4)	**117** (88.8-148)	**338** (191-529)	**556** (338-874)	393
	03-04	**66.6** (57.5-77.1)	**57.4** (43.9-74.7)	**119** (95.6-134)	**310** (205-394)	**474** (310-877)	342
	05-06	**61.3** (49.6-75.8)	**50.1** (42.7-61.0)	**107** (76.2-145)	**279** (167-441)	**512** (366-1210)	356
	07-08	**60.4** (53.9-67.7)	**52.8** (42.4-64.2)	**108** (96.3-134)	**205** (166-237)	**278** (228-386)	389
	09-10	**45.9** (41.0-51.3)	**39.0** (34.7-41.8)	**73.0** (63.2-87.2)	**168** (125-234)	**296** (182-590)	415
12-19 years	99-00	**93.7** (78.6-112)	**80.7** (61.4-103)	**240** (181-326)	**580** (446-834)	**1160** (661-1320)	752
	01-02	**100** (83.0-121)	**92.4** (73.1-119)	**218** (164-270)	**533** (389-729)	**878** (573-1220)	742
	03-04	**111** (93.1-132)	**99.1** (81.2-121)	**240** (193-320)	**522** (389-714)	**969** (651-1470)	729
	05-06	**93.6** (80.5-109)	**85.3** (69.0-104)	**201** (174-238)	**500** (389-635)	**813** (590-1110)	702
	07-08	**76.7** (61.8-95.1)	**72.8** (53.3-91.3)	**161** (108-218)	**334** (213-491)	**547** (334-866)	401
	09-10	**51.4** (40.8-64.9)	**46.6** (31.2-68.8)	**108** (84.2-137)	**236** (150-393)	**419** (268-524)	420
20 years and older	99-00	**118** (107-131)	**102** (89.5-117)	**257** (222-298)	**669** (530-965)	**1430** (1180-2210)	1456
	01-02	**119** (108-132)	**105** (96.3-120)	**277** (240-321)	**702** (583-871)	**1400** (1010-1840)	1647
	03-04	**130** (115-147)	**117** (96.8-133)	**338** (279-417)	**815** (652-1060)	**1510** (1170-2110)	1534
	05-06	**115** (103-128)	**100** (87.6-117)	**278** (233-309)	**700** (574-803)	**1220** (972-1530)	1490
	07-08	**97.9** (89.6-107)	**78.7** (73.2-87.7)	**236** (208-266)	**624** (518-759)	**1100** (875-1380)	1814
	09-10	**73.0** (65.1-81.9)	**62.5** (52.4-72.8)	**173** (149-195)	**523** (407-662)	**989** (810-1120)	1914
Gender							
Males	99-00	**92.8** (82.0-105)	**79.0** (70.8-88.2)	**214** (165-274)	**661** (457-978)	**1290** (965-1920)	1214
	01-02	**97.6** (85.8-111)	**83.2** (72.6-96.8)	**232** (186-280)	**729** (554-974)	**1400** (980-2000)	1371
	03-04	**102** (91.9-113)	**83.7** (71.0-99.0)	**258** (225-307)	**704** (562-896)	**1320** (1060-1590)	1250
	05-06	**85.7** (75.4-97.4)	**73.0** (61.0-90.2)	**204** (172-231)	**504** (368-673)	**898** (607-1240)	1270
	07-08	**78.1** (68.5-89.1)	**65.5** (57.0-73.8)	**181** (162-216)	**490** (390-625)	**936** (662-1190)	1294
	09-10	**54.7** (48.3-62.0)	**43.3** (38.2-54.2)	**125** (97.7-153)	**314** (262-436)	**792** (570-935)	1399
Females	99-00	**123** (109-139)	**104** (93.7-118)	**249** (203-326)	**543** (460-770)	**1270** (770-2250)	1322
	01-02	**123** (110-139)	**113** (97.4-124)	**269** (235-312)	**568** (470-725)	**944** (784-1330)	1411
	03-04	**139** (119-163)	**120** (97.8-143)	**335** (250-418)	**741** (587-923)	**1490** (951-2200)	1355
	05-06	**129** (116-144)	**106** (97.4-121)	**293** (247-333)	**759** (629-920)	**1370** (1150-1730)	1278
	07-08	**106** (95.5-117)	**88.5** (77.6-98.6)	**227** (188-278)	**610** (491-727)	**1040** (759-1520)	1310
	09-10	**81.9** (72.7-92.2)	**69.9** (57.2-80.9)	**178** (151-214)	**523** (407-661)	**987** (716-1220)	1350

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.66 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP) (creatinine corrected) (1999 2010)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**108** (93.9-125)	**102** (89.8-115)	**252** (207-312)	**538** (444-643)	**875** (643-1270)	813
	01-02	**141** (120-165)	**131** (108-160)	**304** (261-378)	**714** (568-1090)	**1280** (928-1740)	677
	03-04	**159** (141-179)	**154** (133-178)	**352** (275-439)	**815** (631-1060)	**1500** (1190-2070)	652
	05-06	**146** (123-173)	**125** (107-157)	**324** (235-425)	**767** (600-1020)	**1410** (926-2510)	637
	07-08	**119** (100-140)	**105** (81.9-142)	**260** (224-306)	**616** (502-750)	**1230** (628-2160)	531
	09-10	**81.6** (70.9-93.8)	**64.9** (56.3-72.7)	**170** (131-254)	**523** (324-792)	**945** (685-1510)	566
Non-Hispanic blacks	99-00	**137** (121-156)	**130** (109-151)	**292** (257-333)	**682** (503-1120)	**1270** (810-1710)	603
	01-02	**163** (149-179)	**150** (122-178)	**367** (316-408)	**818** (634-979)	**1380** (1020-1850)	703
	03-04	**167** (148-189)	**140** (124-162)	**409** (314-522)	**1010** (793-1300)	**1710** (1420-2310)	699
	05-06	**154** (131-181)	**134** (113-160)	**360** (311-412)	**919** (590-1290)	**1700** (1070-2030)	678
	07-08	**131** (115-148)	**121** (105-132)	**280** (224-334)	**614** (489-843)	**1100** (836-1780)	597
	09-10	**113** (89.0-143)	**92.7** (77.5-121)	**236** (180-338)	**722** (443-1210)	**1300** (890-2240)	516
Non-Hispanic whites	99-00	**98.3** (88.9-109)	**84.5** (72.9-93.7)	**206** (158-255)	**565** (432-916)	**1290** (975-1810)	908
	01-02	**103** (93.5-114)	**89.6** (82.1-98.9)	**223** (190-265)	**607** (470-765)	**1050** (874-1440)	1216
	03-04	**109** (95.3-125)	**88.9** (79.2-105)	**254** (223-320)	**652** (548-876)	**1270** (922-1830)	1088
	05-06	**96.1** (86.5-107)	**84.5** (71.2-97.6)	**211** (189-242)	**532** (450-686)	**993** (828-1240)	1038
	07-08	**82.4** (74.7-90.9)	**66.4** (58.5-73.8)	**185** (158-219)	**523** (397-640)	**871** (708-1040)	1077
	09-10	**58.6** (53.2-64.4)	**49.1** (41.4-56.8)	**125** (110-146)	**366** (278-437)	**706** (515-965)	1206

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.66 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP) (creatinine corrected) (2011 - 2012)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**43.2** (38.5-48.5)	**34.4** (30.5-39.2)	**94.2** (79.5-111)	**263** (198-368)	**541** (398-777)	2487
Age group							
6-11 years	11-12	**33.4** (26.7-41.6)	**29.2** (23.0-36.7)	**59.7** (39.8-99.6)	**123** (90.0-172)	**177** (144-353)	395
12-19 years	11-12	**35.3** (30.5-40.9)	**29.4** (22.8-37.3)	**61.1** (46.7-94.5)	**157** (122-223)	**262** (163-549)	388
20 years and older	11-12	**45.8** (40.4-52.0)	**35.4** (32.2-42.3)	**101** (86.9-124)	**328** (235-405)	**634** (432-1010)	1704
Gender							
Males	11-12	**35.8** (31.7-40.4)	**29.3** (25.0-33.6)	**77.3** (60.9-92.4)	**203** (156-293)	**455** (271-703)	1258
Females	11-12	**51.8** (44.5-60.4)	**40.7** (34.0-49.9)	**111** (89.2-132)	**339** (249-415)	**646** (436-1020)	1229
Race/ethnicity							
Mexican Americans	11-12	**55.7** (47.0-66.1)	**41.6** (34.5-52.5)	**122** (85.3-164)	**335** (223-549)	**736** (398-1080)	316
Non-Hispanic blacks	11-12	**69.4** (59.9-80.4)	**57.7** (49.7-67.4)	**141** (124-168)	**404** (274-571)	**973** (609-1220)	665
Non-Hispanic whites	11-12	**37.0** (31.9-43.0)	**29.1** (25.0-33.0)	**80.4** (62.3-98.6)	**230** (152-346)	**481** (314-704)	811
All Hispanics	11-12	**62.1** (52.3-73.8)	**51.2** (42.6-57.4)	**138** (101-187)	**393** (257-484)	**739** (398-1400)	571
Asians	11-12	**31.2** (24.6-39.7)	**24.7** (18.6-32.4)	**71.3** (49.0-101)	**186** (94.0-527)	**405** (200-886)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP) (1999 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**3.43** (3.19-3.69)	**3.20** (3.00-3.60)	**7.60** (6.80-8.40)	**14.9** (13.5-17.4)	**23.8** (19.2-28.6)	2541
	01-02	**4.27** (3.80-4.79)	**4.20** (3.70-4.90)	**9.80** (8.40-11.6)	**23.0** (19.1-27.9)	**39.2** (31.8-50.0)	2782
	03-04	**2.34** (2.10-2.62)	**1.90** (1.70-2.40)	**5.30** (4.50-6.60)	**15.1** (11.4-20.6)	**31.0** (21.4-42.0)	2605
	05-06	**3.04** (2.78-3.32)	**2.50** (2.10-2.80)	**6.30** (5.70-7.10)	**17.7** (14.0-22.5)	**39.7** (28.6-52.1)	2548
	07-08	**2.64** (2.29-3.05)	**2.20** (1.80-2.50)	**5.40** (4.30-6.90)	**14.1** (11.2-20.2)	**27.6** (19.8-39.8)	2604
	09-10	**1.59** (1.41-1.79)	**1.51** (1.33-1.71)	**3.52** (2.99-4.00)	**7.54** (5.96-9.54)	**14.1** (9.91-21.1)	2749
Age group							
6-11 years	99-00	**5.12** (4.42-5.92)	**4.90** (3.70-6.40)	**11.1** (8.30-13.6)	**19.0** (13.8-36.1)	**35.3** (15.6-130)	328
	01-02	**4.41** (3.90-5.00)	**4.40** (4.10-5.30)	**9.30** (7.90-11.7)	**19.7** (14.6-25.9)	**31.4** (21.8-47.9)	393
	03-04	**2.84** (2.10-3.84)	**2.70** (1.80-4.10)	**6.40** (4.40-9.60)	**13.9** (7.80-27.6)	**27.6** (11.3-64.7)	342
	05-06	**3.10** (2.78-3.47)	**3.00** (2.60-3.30)	**6.20** (5.10-7.10)	**14.1** (9.40-19.3)	**19.7** (14.7-36.6)	356
	07-08	**2.39** (2.05-2.80)	**2.20** (1.70-2.90)	**4.50** (3.70-6.20)	**8.70** (6.40-13.9)	**15.1** (10.6-24.1)	389
	09-10	**1.64** (1.45-1.85)	**1.71** (1.26-2.02)	**3.50** (3.09-3.94)	**5.95** (4.56-7.56)	**8.92** (6.94-12.9)	415
12-19 years	99-00	**3.75** (3.24-4.35)	**3.70** (2.90-4.60)	**8.10** (6.40-9.40)	**15.3** (11.4-20.5)	**22.8** (19.1-29.2)	752
	01-02	**4.57** (3.96-5.27)	**4.50** (3.70-5.10)	**11.0** (9.50-14.4)	**23.0** (17.7-32.7)	**42.5** (25.9-57.5)	742
	03-04	**2.77** (2.25-3.41)	**2.50** (2.00-3.00)	**6.40** (4.50-8.60)	**18.6** (10.2-35.6)	**40.6** (20.7-58.4)	729
	05-06	**3.72** (3.04-4.56)	**3.20** (2.40-4.10)	**8.80** (6.20-13.3)	**22.6** (13.8-43.4)	**48.7** (23.1-62.9)	702
	07-08	**2.99** (2.39-3.75)	**2.30** (1.80-2.70)	**6.00** (4.40-9.90)	**21.1** (11.8-32.8)	**37.6** (24.8-74.1)	401
	09-10	**1.82** (1.52-2.16)	**1.66** (1.42-1.94)	**3.98** (3.35-4.73)	**9.53** (6.27-14.0)	**17.6** (9.54-27.4)	420
20 years and older	99-00	**3.21** (2.94-3.51)	**3.00** (2.70-3.40)	**7.30** (6.40-8.00)	**14.5** (12.1-17.0)	**22.7** (17.5-27.0)	1461
	01-02	**4.20** (3.63-4.86)	**4.10** (3.50-5.00)	**9.50** (8.10-11.9)	**23.5** (18.0-29.8)	**39.5** (30.3-57.1)	1647
	03-04	**2.23** (2.03-2.44)	**1.70** (1.50-2.00)	**5.10** (4.50-6.00)	**15.1** (10.9-19.7)	**29.5** (20.4-40.0)	1534
	05-06	**2.94** (2.68-3.21)	**2.30** (1.90-2.70)	**6.20** (5.60-6.70)	**17.7** (13.6-24.5)	**41.5** (28.6-54.1)	1490
	07-08	**2.62** (2.27-3.02)	**2.10** (1.80-2.50)	**5.40** (4.20-7.10)	**14.4** (11.2-20.2)	**27.3** (19.2-40.6)	1814
	09-10	**1.55** (1.36-1.78)	**1.44** (1.25-1.68)	**3.40** (2.88-4.03)	**7.39** (5.94-9.58)	**14.6** (9.91-21.1)	1914
Gender							
Males	99-00	**3.68** (3.31-4.10)	**3.40** (2.90-3.90)	**8.00** (7.40-8.80)	**16.0** (14.0-19.0)	**25.3** (19.5-36.7)	1215
	01-02	**4.31** (3.84-4.83)	**4.30** (3.70-5.10)	**9.70** (8.30-11.2)	**23.0** (16.9-29.8)	**37.9** (29.9-48.4)	1371
	03-04	**2.56** (2.26-2.90)	**2.20** (1.70-2.60)	**6.00** (4.60-7.70)	**17.2** (11.3-26.3)	**33.3** (24.9-55.5)	1250
	05-06	**3.40** (3.01-3.85)	**2.80** (2.40-3.30)	**7.00** (5.70-9.00)	**22.6** (15.0-35.8)	**49.8** (35.2-67.4)	1270
	07-08	**2.77** (2.35-3.27)	**2.30** (1.90-2.80)	**5.50** (4.20-7.60)	**14.4** (11.2-20.5)	**28.9** (19.2-40.0)	1294
	09-10	**1.83** (1.63-2.05)	**1.77** (1.63-1.91)	**3.97** (3.49-4.51)	**8.63** (6.94-11.9)	**18.0** (12.6-29.0)	1399
Females	99-00	**3.21** (2.91-3.54)	**3.10** (2.80-3.50)	**7.10** (5.90-8.50)	**13.6** (12.1-17.2)	**21.9** (15.6-28.5)	1326
	01-02	**4.23** (3.67-4.86)	**4.10** (3.50-5.00)	**9.80** (8.40-12.2)	**23.0** (19.5-28.4)	**43.5** (31.4-53.7)	1411
	03-04	**2.15** (1.92-2.42)	**1.80** (1.50-2.10)	**4.90** (4.10-5.70)	**13.2** (10.0-18.1)	**27.8** (17.5-40.7)	1355
	05-06	**2.72** (2.49-2.98)	**2.10** (1.90-2.40)	**6.00** (5.20-6.80)	**13.9** (11.7-17.5)	**30.8** (21.9-36.2)	1278
	07-08	**2.52** (2.18-2.92)	**2.00** (1.70-2.40)	**5.10** (4.20-6.30)	**14.1** (9.50-21.4)	**26.4** (19.2-42.1)	1310
	09-10	**1.39** (1.21-1.60)	**1.30** (1.12-1.53)	**3.00** (2.51-3.62)	**6.48** (5.45-8.09)	**10.3** (8.33-14.9)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.2, 1.0, 0.9, 1.2, 1.1, and 0.5 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP) (1999 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**3.49** (3.16-3.85)	**3.50** (3.10-3.90)	**7.00** (5.70-8.60)	**13.3** (10.7-18.7)	**23.9** (17.4-27.3)	814
	01-02	**4.32** (3.75-4.98)	**4.70** (3.80-5.70)	**10.1** (8.50-11.4)	**19.6** (16.6-23.0)	**28.5** (24.2-39.9)	677
	03-04	**2.35** (1.87-2.96)	**2.20** (1.50-3.00)	**5.10** (4.30-6.60)	**11.2** (7.50-16.5)	**18.5** (11.6-38.2)	652
	05-06	**2.99** (2.50-3.57)	**2.30** (1.70-3.30)	**5.70** (4.70-7.60)	**18.4** (12.1-30.6)	**36.4** (26.2-63.8)	637
	07-08	**2.89** (2.38-3.50)	**2.60** (2.00-3.10)	**5.30** (4.40-8.20)	**16.9** (10.3-27.3)	**30.2** (22.9-34.3)	531
	09-10	**2.08** (1.84-2.36)	**2.10** (1.86-2.40)	**4.44** (3.73-5.63)	**9.67** (6.89-16.0)	**17.9** (13.1-24.3)	566
Non-Hispanic blacks	99-00	**4.82** (3.92-5.93)	**5.20** (4.10-5.80)	**9.50** (7.60-11.4)	**19.5** (12.9-26.5)	**29.5** (18.6-60.3)	603
	01-02	**6.60** (5.57-7.82)	**6.70** (5.40-8.10)	**15.4** (13.0-18.7)	**32.9** (26.5-41.4)	**52.6** (41.0-84.0)	703
	03-04	**3.61** (3.07-4.23)	**3.50** (3.00-4.00)	**8.50** (7.10-11.4)	**22.9** (16.5-28.6)	**35.2** (29.3-49.1)	699
	05-06	**4.09** (3.51-4.75)	**3.70** (3.10-4.10)	**9.10** (6.90-11.9)	**22.5** (17.4-40.7)	**59.3** (34.5-86.7)	678
	07-08	**3.30** (2.98-3.64)	**3.20** (2.70-3.60)	**7.20** (6.30-8.90)	**15.3** (13.3-20.2)	**25.5** (19.2-38.1)	597
	09-10	**2.08** (1.79-2.41)	**2.05** (1.70-2.42)	**4.79** (3.80-5.95)	**10.1** (7.50-14.4)	**16.4** (9.60-38.4)	516
Non-Hispanic whites	99-00	**3.16** (2.89-3.46)	**2.80** (2.50-3.10)	**7.40** (6.30-8.40)	**14.5** (12.2-17.4)	**22.4** (16.9-28.5)	912
	01-02	**3.85** (3.37-4.40)	**3.70** (3.10-4.40)	**8.70** (7.80-9.90)	**20.9** (17.3-25.9)	**37.9** (29.9-49.5)	1216
	03-04	**2.14** (1.92-2.39)	**1.70** (1.40-1.90)	**4.80** (4.00-5.80)	**13.6** (9.50-20.0)	**31.0** (18.1-48.9)	1088
	05-06	**2.83** (2.59-3.10)	**2.20** (1.80-2.60)	**5.90** (5.30-6.90)	**17.0** (13.3-21.6)	**36.3** (26.6-51.0)	1038
	07-08	**2.44** (2.07-2.88)	**2.00** (1.70-2.30)	**4.90** (3.70-6.20)	**13.1** (8.70-20.1)	**25.0** (15.8-42.1)	1077
	09-10	**1.41** (1.22-1.62)	**1.30** (1.12-1.57)	**3.04** (2.53-3.60)	**6.12** (5.23-7.65)	**11.8** (7.63-21.1)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.2, 1.0, 0.9, 1.2, 1.1, and 0.5 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP) (2011 - 2012)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.36** (1.25-1.49)	**1.40** (1.20-1.50)	**3.00** (2.70-3.30)	**6.00** (5.30-6.40)	**8.70** (7.60-9.70)	2489
Age group							
6-11 years	11-12	**1.41** (1.23-1.61)	**1.50** (1.20-1.80)	**2.90** (2.50-3.40)	**5.30** (4.10-7.10)	**7.60** (6.30-8.80)	396
12-19 years	11-12	**1.58** (1.33-1.87)	**1.50** (1.00-2.30)	**3.90** (3.10-4.40)	**6.80** (5.20-10.3)	**12.5** (8.90-14.3)	388
20 years and older	11-12	**1.33** (1.19-1.48)	**1.30** (1.10-1.50)	**2.90** (2.50-3.20)	**5.90** (5.10-6.40)	**8.30** (7.10-9.60)	1705
Gender							
Males	11-12	**1.51** (1.33-1.70)	**1.50** (1.20-1.80)	**3.10** (2.60-3.90)	**6.10** (5.50-7.00)	**9.20** (7.70-11.3)	1259
Females	11-12	**1.24** (1.14-1.34)	**1.20** (1.00-1.40)	**2.90** (2.50-3.10)	**5.60** (4.90-6.30)	**8.10** (6.80-9.20)	1230
Race/ethnicity							
Mexican Americans	11-12	**1.49** (1.16-1.91)	**1.50** (1.00-1.90)	**3.40** (2.50-4.30)	**6.60** (5.10-8.90)	**9.60** (6.60-12.9)	316
Non-Hispanic blacks	11-12	**1.89** (1.67-2.13)	**2.00** (1.60-2.40)	**4.00** (3.40-4.90)	**8.00** (6.20-9.70)	**11.3** (9.60-14.9)	665
Non-Hispanic whites	11-12	**1.21** (1.07-1.37)	**1.10** (.900-1.50)	**2.70** (2.20-3.10)	**4.90** (4.20-6.10)	**6.70** (6.00-8.30)	813
All Hispanics	11-12	**1.61** (1.40-1.83)	**1.70** (1.30-2.00)	**3.90** (3.10-4.70)	**7.30** (6.30-8.70)	**11.6** (9.20-12.9)	571
Asians	11-12	**1.69** (1.44-1.98)	**1.70** (1.30-1.90)	**3.60** (2.80-4.40)	**7.80** (6.60-11.4)	**13.8** (10.0-17.8)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP) (creatinine corrected) (1999 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**3.12** (2.95-3.31)	**3.08** (2.82-3.27)	**5.88** (5.38-6.25)	**10.8** (9.62-12.5)	**18.9** (15.0-21.8)	2541
	01-02	**4.00** (3.58-4.48)	**3.90** (3.44-4.47)	**7.94** (7.22-9.02)	**18.0** (15.3-21.5)	**32.8** (25.2-42.9)	2782
	03-04	**2.20** (2.01-2.41)	**1.89** (1.68-2.19)	**4.31** (3.84-4.74)	**10.8** (8.72-13.8)	**25.4** (16.7-34.7)	2605
	05-06	**2.96** (2.72-3.23)	**2.61** (2.37-2.86)	**5.69** (5.00-6.47)	**13.7** (11.4-17.8)	**30.1** (21.2-35.2)	2548
	07-08	**2.66** (2.37-2.99)	**2.36** (2.11-2.67)	**5.15** (4.35-6.00)	**11.8** (8.89-15.6)	**21.9** (14.6-33.4)	2604
	09-10	**1.66** (1.45-1.90)	**1.52** (1.36-1.77)	**3.09** (2.69-3.60)	**6.28** (4.98-8.48)	**11.2** (8.33-19.1)	2749
Age group							
6-11 years	99-00	**5.19** (4.55-5.93)	**5.37** (4.52-5.95)	**9.11** (8.06-11.4)	**21.6** (11.5-41.9)	**41.9** (13.5-86.2)	328
	01-02	**5.03** (4.47-5.65)	**5.38** (4.51-6.21)	**9.90** (7.87-11.5)	**21.1** (13.8-28.8)	**31.4** (24.3-40.7)	393
	03-04	**3.00** (2.30-3.93)	**2.80** (1.93-4.09)	**5.86** (4.69-7.70)	**14.3** (8.54-24.4)	**28.7** (14.1-45.3)	342
	05-06	**3.42** (3.08-3.79)	**3.26** (2.63-3.92)	**6.18** (5.40-6.85)	**11.3** (8.96-17.4)	**20.7** (11.3-31.8)	356
	07-08	**2.95** (2.49-3.49)	**2.80** (2.17-3.33)	**5.42** (3.95-6.51)	**10.6** (7.47-14.0)	**15.6** (10.6-23.7)	389
	09-10	**2.13** (1.90-2.40)	**2.08** (1.88-2.33)	**3.69** (3.13-4.20)	**5.83** (4.80-7.95)	**8.89** (5.88-20.1)	415
12-19 years	99-00	**2.53** (2.14-2.99)	**2.35** (2.05-2.76)	**5.83** (4.38-6.29)	**9.66** (7.41-11.5)	**12.1** (10.5-17.3)	752
	01-02	**3.53** (3.09-4.03)	**3.67** (2.89-4.48)	**7.47** (6.51-8.67)	**15.2** (11.7-21.9)	**25.2** (17.7-32.8)	742
	03-04	**2.07** (1.74-2.48)	**1.88** (1.60-2.23)	**4.25** (3.19-5.62)	**11.6** (6.83-23.2)	**24.8** (11.6-37.9)	729
	05-06	**2.77** (2.27-3.38)	**2.43** (2.03-2.87)	**5.24** (4.06-7.75)	**15.2** (9.86-23.2)	**27.1** (16.0-43.7)	702
	07-08	**2.33** (1.90-2.86)	**2.00** (1.67-2.57)	**4.33** (3.55-6.23)	**12.6** (8.31-16.3)	**21.9** (12.0-45.7)	401
	09-10	**1.46** (1.20-1.77)	**1.33** (1.09-1.61)	**2.85** (2.24-3.63)	**7.47** (4.31-11.6)	**13.2** (8.11-20.9)	420
20 years and older	99-00	**3.03** (2.83-3.25)	**2.98** (2.73-3.23)	**5.55** (4.90-6.06)	**10.0** (8.60-12.9)	**17.5** (13.8-22.1)	1461
	01-02	**3.97** (3.49-4.52)	**3.82** (3.26-4.38)	**7.79** (7.00-9.00)	**18.3** (15.3-21.8)	**34.5** (23.1-47.9)	1647
	03-04	**2.14** (1.98-2.31)	**1.84** (1.63-2.08)	**4.14** (3.78-4.40)	**10.5** (8.38-12.9)	**25.6** (15.9-36.3)	1534
	05-06	**2.94** (2.69-3.23)	**2.60** (2.36-2.83)	**5.67** (4.77-6.52)	**13.8** (11.3-18.1)	**33.1** (21.9-47.4)	1490
	07-08	**2.69** (2.39-3.02)	**2.36** (2.14-2.66)	**5.20** (4.38-6.04)	**11.8** (8.94-16.6)	**22.1** (13.5-37.1)	1814
	09-10	**1.65** (1.43-1.90)	**1.51** (1.34-1.75)	**3.04** (2.63-3.60)	**6.24** (4.98-8.61)	**11.1** (8.03-19.4)	1914
Gender							
Males	99-00	**2.89** (2.60-3.22)	**2.76** (2.52-2.96)	**5.58** (4.71-6.08)	**10.3** (9.35-12.4)	**21.6** (14.1-27.7)	1215
	01-02	**3.50** (3.08-3.99)	**3.33** (2.83-3.90)	**7.00** (6.49-7.77)	**16.2** (12.8-20.9)	**31.6** (20.5-49.4)	1371
	03-04	**2.01** (1.82-2.21)	**1.71** (1.46-1.89)	**4.14** (3.49-4.81)	**10.4** (7.68-16.2)	**23.3** (15.1-41.1)	1250
	05-06	**2.73** (2.43-3.07)	**2.30** (2.12-2.61)	**5.08** (4.29-6.14)	**14.3** (11.2-20.5)	**31.0** (21.5-50.9)	1270
	07-08	**2.33** (2.03-2.68)	**2.00** (1.71-2.34)	**4.36** (3.71-5.41)	**11.6** (8.33-14.2)	**20.2** (14.6-26.3)	1294
	09-10	**1.64** (1.45-1.85)	**1.52** (1.39-1.74)	**3.06** (2.70-3.60)	**6.53** (5.18-9.49)	**13.0** (8.65-22.2)	1399
Females	99-00	**3.36** (3.11-3.63)	**3.33** (2.91-3.80)	**6.15** (5.55-6.77)	**11.1** (9.11-14.0)	**17.3** (12.4-24.6)	1326
	01-02	**4.54** (4.02-5.13)	**4.47** (3.85-5.14)	**9.28** (7.94-10.3)	**20.3** (16.6-24.4)	**34.7** (27.1-42.0)	1411
	03-04	**2.40** (2.15-2.69)	**2.16** (1.84-2.40)	**4.40** (3.97-4.89)	**10.9** (8.27-16.0)	**27.0** (17.5-34.6)	1355
	05-06	**3.20** (2.89-3.55)	**2.89** (2.58-3.17)	**6.07** (5.00-7.00)	**13.3** (10.4-16.3)	**28.2** (18.2-37.4)	1278
	07-08	**3.02** (2.70-3.38)	**2.76** (2.36-3.02)	**5.57** (4.90-6.50)	**12.1** (8.64-18.2)	**24.7** (14.8-44.4)	1310
	09-10	**1.68** (1.44-1.96)	**1.53** (1.35-1.89)	**3.10** (2.68-3.69)	**5.75** (4.58-8.03)	**10.5** (7.36-17.5)	1350

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP) (creatinine corrected) (1999 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**3.16** (2.72-3.68)	**3.15** (2.52-3.81)	**5.88** (4.86-7.24)	**11.6** (9.63-13.1)	**15.7** (12.6-23.1)	814
	01-02	**4.07** (3.60-4.61)	**4.18** (3.82-4.90)	**7.80** (6.64-9.49)	**16.4** (13.6-18.9)	**24.9** (19.8-28.7)	677
	03-04	**2.12** (1.74-2.59)	**1.94** (1.50-2.42)	**4.06** (3.29-4.93)	**9.38** (5.72-15.4)	**16.8** (9.86-38.6)	652
	05-06	**2.69** (2.36-3.07)	**2.41** (2.04-2.73)	**4.82** (4.09-6.05)	**14.3** (10.0-16.9)	**27.2** (16.3-40.1)	637
	07-08	**2.82** (2.38-3.34)	**2.45** (2.08-2.89)	**5.00** (4.14-6.86)	**12.3** (9.58-20.7)	**29.0** (17.0-50.3)	531
	09-10	**2.07** (1.83-2.34)	**1.89** (1.69-2.31)	**4.06** (3.50-4.98)	**8.38** (6.08-11.3)	**13.9** (9.70-20.0)	566
Non-Hispanic blacks	99-00	**3.11** (2.59-3.73)	**3.13** (2.50-3.61)	**5.84** (4.43-7.32)	**10.2** (8.05-15.6)	**18.4** (11.6-35.2)	603
	01-02	**4.63** (3.96-5.42)	**4.59** (3.97-5.02)	**9.93** (7.95-12.4)	**21.2** (16.0-33.2)	**39.9** (27.7-48.1)	703
	03-04	**2.56** (2.24-2.92)	**2.28** (2.02-2.78)	**5.17** (4.48-6.83)	**13.2** (10.5-16.2)	**27.5** (18.4-36.0)	699
	05-06	**2.87** (2.45-3.38)	**2.41** (2.09-2.78)	**5.72** (4.40-7.29)	**15.0** (12.0-20.6)	**54.4** (18.4-84.0)	678
	07-08	**2.56** (2.26-2.90)	**2.40** (2.17-2.73)	**4.77** (4.07-5.76)	**11.4** (8.75-15.4)	**18.0** (16.1-26.3)	597
	09-10	**1.51** (1.22-1.86)	**1.48** (1.14-1.93)	**2.87** (2.26-3.69)	**5.73** (3.69-10.7)	**10.7** (5.61-19.1)	516
Non-Hispanic whites	99-00	**3.09** (2.84-3.36)	**3.08** (2.73-3.47)	**5.87** (5.11-6.67)	**10.6** (8.95-13.5)	**20.0** (14.0-24.6)	912
	01-02	**3.81** (3.34-4.35)	**3.67** (3.11-4.33)	**7.78** (6.74-9.35)	**17.0** (14.1-21.8)	**32.8** (21.5-46.9)	1216
	03-04	**2.12** (1.91-2.35)	**1.82** (1.60-2.13)	**4.11** (3.49-4.42)	**10.7** (7.42-15.1)	**27.0** (15.1-37.4)	1088
	05-06	**2.98** (2.77-3.21)	**2.66** (2.43-2.93)	**5.73** (5.00-6.47)	**13.4** (11.3-17.8)	**27.7** (19.5-37.4)	1038
	07-08	**2.55** (2.20-2.94)	**2.26** (1.97-2.67)	**4.90** (3.99-5.92)	**11.0** (7.80-14.8)	**20.5** (11.9-30.2)	1077
	09-10	**1.58** (1.36-1.84)	**1.49** (1.27-1.76)	**2.94** (2.50-3.49)	**5.64** (4.53-7.96)	**10.3** (6.85-18.3)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP) (creatinine corrected) (2011 - 2012)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.55** (1.43-1.68)	**1.46** (1.33-1.67)	**2.73** (2.50-2.92)	**4.91** (4.55-5.52)	**8.47** (6.72-9.86)	2487
Age group							
6-11 years	11-12	**2.02** (1.81-2.25)	**2.07** (1.75-2.44)	**3.45** (2.82-4.06)	**5.26** (4.60-5.89)	**7.15** (5.89-8.17)	395
12-19 years	11-12	**1.53** (1.33-1.78)	**1.40** (1.12-1.88)	**2.79** (2.20-3.88)	**5.00** (4.11-6.94)	**9.86** (5.00-11.1)	388
20 years and older	11-12	**1.51** (1.39-1.64)	**1.46** (1.28-1.58)	**2.59** (2.38-2.84)	**4.81** (4.35-5.51)	**8.49** (6.18-11.2)	1704
Gender							
Males	11-12	**1.41** (1.28-1.56)	**1.36** (1.19-1.58)	**2.52** (2.21-2.83)	**4.58** (3.77-5.46)	**7.19** (6.16-8.79)	1258
Females	11-12	**1.70** (1.56-1.85)	**1.58** (1.43-1.75)	**2.86** (2.63-3.18)	**5.36** (4.64-5.89)	**8.89** (6.67-13.2)	1229
Race/ethnicity							
Mexican Americans	11-12	**1.68** (1.36-2.06)	**1.67** (1.21-2.06)	**2.91** (2.46-3.50)	**6.23** (4.32-9.05)	**11.3** (5.67-18.3)	316
Non-Hispanic blacks	11-12	**1.47** (1.29-1.67)	**1.44** (1.26-1.75)	**2.75** (2.37-3.14)	**5.16** (4.17-7.05)	**8.69** (6.07-12.1)	665
Non-Hispanic whites	11-12	**1.47** (1.29-1.68)	**1.45** (1.25-1.65)	**2.51** (2.17-2.84)	**4.43** (3.77-5.00)	**6.77** (5.00-9.54)	811
All Hispanics	11-12	**1.80** (1.63-1.98)	**1.79** (1.59-2.00)	**3.32** (2.86-3.76)	**6.37** (5.67-8.07)	**11.3** (7.79-14.4)	571
Asians	11-12	**2.26** (1.98-2.58)	**1.98** (1.71-2.33)	**4.18** (3.26-5.00)	**8.89** (6.40-12.6)	**14.0** (10.0-20.1)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (2001 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**20.0** (17.8-22.5)	**20.1** (17.8-22.4)	**43.6** (38.0-49.7)	**92.3** (77.0-108)	**192** (131-256)	2782
	03-04	**21.7** (19.3-24.4)	**21.2** (18.7-24.1)	**49.1** (40.5-56.9)	**121** (91.3-164)	**266** (165-383)	2605
	05-06	**25.5** (23.0-28.2)	**23.8** (21.5-26.8)	**55.1** (50.2-61.0)	**153** (132-180)	**306** (240-421)	2548
	07-08	**22.1** (18.7-26.0)	**20.7** (17.6-23.7)	**48.2** (39.8-61.8)	**123** (83.7-181)	**238** (171-336)	2604
	09-10	**12.9** (11.3-14.7)	**12.9** (11.4-14.8)	**25.8** (22.1-30.3)	**53.2** (41.7-75.2)	**103** (74.2-149)	2749
Age group							
6-11 years	01-02	**33.6** (29.7-37.9)	**32.9** (26.9-39.1)	**66.9** (49.7-74.0)	**127** (103-148)	**216** (137-280)	393
	03-04	**36.9** (28.4-47.9)	**36.5** (26.5-47.0)	**77.4** (49.1-103)	**164** (79.9-350)	**318** (164-400)	342
	05-06	**34.9** (30.8-39.6)	**35.7** (31.3-40.7)	**68.9** (56.5-76.0)	**140** (101-169)	**206** (133-401)	356
	07-08	**28.6** (23.4-34.8)	**27.0** (20.1-36.4)	**56.1** (45.4-67.8)	**113** (76.5-218)	**242** (109-351)	389
	09-10	**15.0** (13.2-17.1)	**17.0** (14.1-19.8)	**28.9** (24.4-37.4)	**49.3** (41.2-70.2)	**75.1** (55.2-117)	415
12-19 years	01-02	**24.9** (21.3-29.1)	**25.3** (22.9-31.3)	**50.6** (40.7-64.5)	**107** (78.5-148)	**216** (117-330)	742
	03-04	**28.3** (23.0-34.8)	**29.8** (25.9-33.9)	**56.9** (45.4-73.7)	**157** (84.1-299)	**317** (176-553)	729
	05-06	**34.8** (28.0-43.3)	**32.5** (27.1-42.2)	**79.5** (66.9-103)	**213** (131-384)	**424** (232-836)	702
	07-08	**29.8** (22.5-39.3)	**26.6** (20.0-35.4)	**66.7** (43.7-96.6)	**224** (101-417)	**417** (209-615)	401
	09-10	**15.3** (12.4-18.8)	**14.9** (12.0-18.0)	**28.8** (22.7-41.0)	**70.2** (41.0-110)	**117** (61.0-215)	420
20 years and older	01-02	**18.1** (15.7-20.9)	**17.8** (14.7-20.7)	**39.8** (32.7-48.0)	**86.2** (65.7-107)	**175** (110-279)	1647
	03-04	**19.5** (17.7-21.5)	**18.4** (16.6-21.0)	**41.9** (36.9-51.2)	**107** (88.2-136)	**225** (148-384)	1534
	05-06	**23.4** (21.1-25.9)	**21.4** (19.5-23.7)	**48.6** (43.7-55.1)	**148** (121-172)	**306** (238-421)	1490
	07-08	**20.5** (17.4-24.1)	**19.6** (17.1-22.2)	**46.3** (37.2-59.9)	**110** (75.0-169)	**214** (157-303)	1814
	09-10	**12.4** (10.7-14.3)	**12.5** (10.8-14.3)	**24.5** (21.1-29.3)	**52.5** (40.1-72.6)	**104** (72.6-151)	1914
Gender							
Males	01-02	**22.0** (19.5-24.7)	**21.2** (19.4-24.2)	**48.0** (41.4-54.4)	**94.2** (80.8-110)	**212** (130-256)	1371
	03-04	**24.1** (20.9-27.9)	**22.9** (19.2-27.9)	**51.0** (40.5-59.8)	**133** (94.8-220)	**317** (162-470)	1250
	05-06	**29.6** (26.0-33.8)	**27.2** (22.9-31.0)	**63.1** (54.3-71.9)	**180** (143-263)	**494** (285-626)	1270
	07-08	**23.2** (19.4-27.8)	**20.8** (18.1-24.5)	**46.0** (39.2-57.3)	**132** (85.4-190)	**277** (162-349)	1294
	09-10	**15.2** (13.1-17.6)	**14.6** (12.9-16.4)	**29.5** (24.6-36.2)	**71.0** (50.3-93.5)	**128** (90.6-181)	1399
Females	01-02	**18.3** (15.7-21.4)	**18.2** (14.9-22.1)	**39.8** (34.3-46.0)	**86.0** (69.4-115)	**170** (119-273)	1411
	03-04	**19.7** (17.4-22.2)	**19.4** (16.7-22.8)	**46.4** (37.5-54.4)	**103** (84.1-148)	**214** (140-318)	1355
	05-06	**22.0** (19.2-25.2)	**21.4** (19.5-23.4)	**47.1** (42.6-54.3)	**135** (113-156)	**232** (186-300)	1278
	07-08	**21.0** (17.8-24.8)	**19.9** (16.8-23.3)	**51.0** (39.9-64.6)	**121** (76.9-183)	**223** (171-336)	1310
	09-10	**11.0** (9.58-12.8)	**11.6** (9.73-13.5)	**22.5** (19.2-27.2)	**42.8** (33.2-59.1)	**82.2** (53.1-116)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.0, 0.3, 0.7,0.7, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (2001 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**18.5** (16.2-21.1)	**19.1** (16.3-21.6)	**36.3** (31.6-44.0)	**79.9** (66.4-93.9)	**123** (100-161)	677
	03-04	**18.9** (15.4-23.4)	**19.8** (17.6-22.3)	**37.5** (30.0-45.6)	**72.2** (52.4-115)	**116** (71.6-327)	652
	05-06	**23.0** (18.0-29.3)	**19.9** (15.7-23.9)	**47.8** (34.8-65.3)	**136** (84.6-223)	**244** (157-520)	637
	07-08	**22.7** (18.5-27.7)	**19.8** (17.5-23.8)	**43.6** (33.5-66.6)	**104** (82.8-157)	**238** (158-282)	531
	09-10	**15.3** (12.9-18.2)	**15.8** (13.3-18.3)	**31.5** (26.6-39.2)	**64.5** (46.4-94.9)	**108** (70.7-153)	566
Non-Hispanic blacks	01-02	**29.8** (26.1-34.1)	**30.9** (27.2-34.3)	**61.9** (52.6-69.4)	**126** (108-157)	**276** (157-339)	703
	03-04	**30.8** (26.8-35.5)	**29.1** (25.3-32.3)	**65.6** (53.7-76.3)	**154** (113-178)	**275** (174-401)	699
	05-06	**34.8** (30.3-39.9)	**30.2** (27.6-33.2)	**73.8** (61.0-96.7)	**206** (156-275)	**395** (274-547)	678
	07-08	**25.7** (23.1-28.6)	**25.8** (22.4-28.9)	**55.9** (47.1-64.7)	**121** (99.1-150)	**184** (137-255)	597
	09-10	**15.5** (12.8-18.8)	**15.7** (13.4-17.7)	**30.4** (24.4-35.7)	**54.5** (37.7-84.1)	**94.6** (51.5-229)	516
Non-Hispanic whites	01-02	**19.1** (16.7-21.9)	**19.2** (16.9-21.4)	**41.7** (35.3-50.7)	**91.1** (75.6-110)	**212** (130-275)	1216
	03-04	**20.8** (18.6-23.3)	**19.7** (17.2-22.5)	**47.5** (39.4-56.1)	**120** (91.3-165)	**270** (155-403)	1088
	05-06	**24.3** (21.9-26.9)	**23.0** (21.1-26.0)	**54.6** (48.4-61.0)	**148** (121-172)	**302** (221-421)	1038
	07-08	**21.3** (17.6-25.8)	**20.2** (16.5-24.1)	**46.7** (36.1-65.2)	**123** (75.1-203)	**277** (161-373)	1077
	09-10	**12.2** (10.5-14.1)	**12.3** (10.5-14.2)	**24.4** (20.7-29.1)	**51.7** (37.7-77.1)	**104** (72.6-151)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.0, 0.3, 0.7,0.7, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (2011 - 2012)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**7.91** (7.47-8.36)	**8.30** (7.50-9.00)	**16.0** (14.4-17.4)	**29.0** (25.8-32.5)	**43.1** (40.6-47.2)	2489
Age group							
6-11 years	11-12	**10.5** (8.82-12.4)	**11.8** (10.4-14.2)	**23.3** (19.9-26.1)	**39.5** (30.6-50.3)	**55.4** (41.8-68.5)	396
12-19 years	11-12	**8.55** (6.93-10.6)	**8.80** (6.80-10.6)	**18.3** (14.3-23.2)	**36.0** (27.4-46.6)	**56.7** (38.1-99.8)	388
20 years and older	11-12	**7.58** (7.03-8.16)	**8.00** (7.20-8.90)	**15.0** (13.5-16.9)	**26.7** (23.8-30.6)	**41.5** (34.7-46.2)	1705
Gender							
Males	11-12	**8.71** (7.98-9.51)	**9.40** (7.80-10.6)	**16.4** (14.2-19.5)	**31.1** (26.7-35.8)	**46.2** (41.5-55.4)	1259
Females	11-12	**7.20** (6.77-7.66)	**7.60** (6.90-8.20)	**15.5** (14.4-17.1)	**27.6** (25.0-30.5)	**40.7** (35.1-46.4)	1230
Race/ethnicity							
Mexican Americans	11-12	**9.13** (7.22-11.5)	**9.60** (7.30-11.7)	**17.7** (12.7-24.7)	**32.1** (24.8-37.7)	**50.2** (36.4-56.3)	316
Non-Hispanic blacks	11-12	**11.3** (10.1-12.7)	**11.2** (10.2-12.7)	**22.1** (17.4-26.8)	**38.8** (34.9-47.9)	**56.2** (46.8-65.1)	665
Non-Hispanic whites	11-12	**7.20** (6.73-7.70)	**7.40** (6.80-8.30)	**14.6** (12.9-17.2)	**25.0** (23.4-27.9)	**36.6** (30.6-42.9)	813
All Hispanics	11-12	**9.28** (8.07-10.7)	**9.40** (7.70-10.8)	**18.8** (15.3-22.9)	**37.5** (32.1-43.9)	**53.8** (46.3-70.6)	571
Asians	11-12	**6.85** (5.53-8.48)	**6.70** (5.40-7.90)	**15.1** (11.5-18.6)	**31.8** (22.5-41.9)	**64.2** (35.7-82.8)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (creatinine corrected) (2001 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**18.8** (17.0-20.7)	**16.6** (14.9-18.5)	**32.2** (27.8-37.1)	**71.1** (58.7-88.3)	**143** (101-200)	2782
	03-04	**20.4** (18.7-22.3)	**17.7** (16.3-19.6)	**35.8** (30.5-43.3)	**93.5** (74.0-128)	**182** (134-262)	2605
	05-06	**24.8** (22.4-27.5)	**21.4** (19.1-23.4)	**46.1** (40.0-52.1)	**117** (97.8-148)	**235** (197-272)	2548
	07-08	**22.2** (19.4-25.5)	**19.3** (17.4-22.1)	**40.5** (34.1-50.3)	**99.3** (69.7-134)	**179** (135-252)	2604
	09-10	**13.5** (11.6-15.6)	**11.9** (10.5-13.9)	**22.3** (18.6-26.4)	**44.0** (35.3-61.0)	**86.3** (59.2-131)	2749
Age group							
6-11 years	01-02	**38.2** (34.3-42.6)	**34.3** (29.9-38.9)	**60.6** (51.9-76.4)	**107** (96.3-147)	**211** (122-313)	393
	03-04	**39.0** (31.1-48.9)	**36.6** (25.3-49.3)	**65.6** (49.8-91.3)	**129** (77.1-253)	**211** (123-708)	342
	05-06	**38.5** (34.2-43.3)	**37.0** (32.9-40.3)	**65.5** (55.4-71.9)	**115** (85.1-165)	**213** (119-333)	356
	07-08	**35.2** (29.1-42.5)	**31.4** (25.6-37.8)	**53.5** (44.8-72.3)	**139** (79.9-230)	**258** (141-303)	389
	09-10	**19.6** (17.3-22.2)	**18.6** (16.5-21.5)	**34.2** (27.3-40.4)	**55.4** (44.0-64.8)	**72.1** (56.3-140)	415
12-19 years	01-02	**19.2** (17.0-21.8)	**17.8** (15.6-20.0)	**34.9** (29.2-42.7)	**73.4** (58.4-80.7)	**102** (86.6-160)	742
	03-04	**21.2** (18.1-24.7)	**18.6** (16.9-21.7)	**38.7** (29.7-53.4)	**103** (62.7-209)	**212** (100-358)	729
	05-06	**26.0** (21.2-31.7)	**23.7** (18.8-28.4)	**49.4** (37.4-74.0)	**131** (79.0-228)	**278** (132-375)	702
	07-08	**23.2** (18.1-29.6)	**20.0** (14.6-23.9)	**46.1** (31.5-66.3)	**148** (66.6-234)	**234** (146-373)	401
	09-10	**12.3** (9.73-15.5)	**10.5** (8.95-13.3)	**20.9** (14.2-31.0)	**45.3** (28.9-91.9)	**110** (44.6-200)	420
20 years and older	01-02	**17.1** (15.2-19.3)	**15.0** (13.3-16.7)	**27.7** (23.2-34.0)	**63.7** (48.3-86.9)	**137** (84.4-203)	1647
	03-04	**18.8** (17.5-20.2)	**16.3** (15.4-17.5)	**31.6** (28.1-35.3)	**83.8** (67.2-106)	**171** (129-246)	1534
	05-06	**23.4** (21.1-26.0)	**19.4** (17.6-21.8)	**42.5** (37.6-49.2)	**115** (93.1-153)	**235** (184-298)	1490
	07-08	**21.0** (18.5-24.0)	**18.5** (16.3-20.2)	**38.1** (30.9-49.2)	**94.3** (62.6-126)	**164** (120-235)	1814
	09-10	**13.1** (11.3-15.2)	**11.5** (10.1-13.4)	**20.9** (17.7-25.1)	**40.6** (32.4-64.9)	**86.3** (59.2-131)	1914
Gender							
Males	01-02	**17.9** (16.2-19.7)	**15.4** (13.8-17.9)	**32.2** (27.8-36.8)	**73.4** (55.3-91.8)	**137** (97.7-224)	1371
	03-04	**18.9** (17.1-20.9)	**17.1** (15.2-18.6)	**32.7** (26.6-41.6)	**93.4** (68.8-123)	**193** (108-291)	1250
	05-06	**23.8** (21.0-26.9)	**20.2** (17.5-23.3)	**44.8** (38.5-54.1)	**129** (92.5-166)	**251** (202-352)	1270
	07-08	**19.6** (16.8-22.7)	**16.8** (14.6-20.0)	**34.8** (28.7-41.8)	**90.3** (65.2-119)	**164** (111-258)	1294
	09-10	**13.6** (11.7-15.9)	**11.6** (10.5-13.1)	**22.9** (17.8-27.4)	**52.8** (39.1-74.3)	**103** (73.3-173)	1399
Females	01-02	**19.7** (17.3-22.4)	**17.6** (15.4-19.5)	**32.1** (26.8-38.6)	**70.5** (57.8-93.7)	**156** (93.7-201)	1411
	03-04	**21.9** (19.7-24.5)	**18.7** (16.8-20.9)	**39.3** (33.8-46.9)	**94.3** (72.8-136)	**171** (146-261)	1355
	05-06	**25.9** (23.2-28.8)	**22.5** (19.6-25.5)	**47.3** (40.5-52.3)	**108** (88.8-131)	**202** (157-278)	1278
	07-08	**25.2** (22.1-28.6)	**22.1** (19.6-24.4)	**47.4** (38.5-56.1)	**112** (84.6-150)	**190** (162-268)	1310
	09-10	**13.3** (11.4-15.6)	**12.4** (10.4-14.6)	**21.9** (18.3-26.7)	**38.8** (30.9-52.2)	**74.0** (46.9-115)	1350

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (creatinine corrected) (2001 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**17.4** (15.9-19.1)	**15.7** (14.4-17.5)	**30.6** (26.0-34.7)	**65.9** (50.6-83.9)	**103** (75.5-128)	677
	03-04	**17.1** (14.3-20.4)	**15.4** (13.2-17.7)	**29.3** (23.8-36.8)	**57.3** (45.7-97.6)	**105** (70.1-195)	652
	05-06	**20.7** (17.2-25.0)	**17.5** (15.3-21.3)	**37.3** (30.9-45.7)	**99.9** (67.6-159)	**181** (110-357)	637
	07-08	**22.1** (17.7-27.7)	**18.8** (15.2-23.4)	**38.6** (28.3-54.9)	**91.4** (61.0-170)	**197** (141-282)	531
	09-10	**15.2** (12.9-17.8)	**14.6** (12.8-16.2)	**27.0** (21.3-33.3)	**60.0** (42.3-77.7)	**94.8** (66.4-142)	566
Non-Hispanic blacks	01-02	**20.9** (18.8-23.3)	**19.7** (17.5-21.8)	**38.3** (32.1-46.0)	**93.5** (69.2-123)	**164** (130-183)	703
	03-04	**21.9** (20.1-23.8)	**19.5** (17.3-22.6)	**40.1** (35.8-45.3)	**102** (75.5-122)	**164** (133-269)	699
	05-06	**24.5** (21.2-28.2)	**18.9** (17.1-22.8)	**46.1** (37.9-59.7)	**128** (100-158)	**308** (158-399)	678
	07-08	**20.0** (18.1-22.0)	**18.3** (16.5-19.2)	**36.9** (27.9-46.7)	**85.5** (65.8-103)	**136** (107-227)	597
	09-10	**11.2** (8.71-14.5)	**10.5** (8.26-13.5)	**18.9** (13.6-25.3)	**32.9** (22.3-58.4)	**47.2** (33.6-153)	516
Non-Hispanic whites	01-02	**18.9** (17.0-21.0)	**16.3** (14.8-18.4)	**32.1** (27.3-37.3)	**70.8** (56.9-93.7)	**177** (98.0-242)	1216
	03-04	**20.5** (18.5-22.8)	**17.8** (16.2-19.7)	**35.3** (29.7-44.9)	**96.2** (75.8-136)	**211** (136-283)	1088
	05-06	**25.6** (23.1-28.2)	**22.4** (19.6-24.5)	**47.6** (40.7-54.1)	**119** (98.2-148)	**231** (181-297)	1038
	07-08	**22.2** (18.7-26.3)	**19.5** (16.7-23.0)	**40.4** (32.1-54.8)	**99.1** (68.1-145)	**179** (129-258)	1077
	09-10	**13.7** (11.7-16.1)	**11.9** (10.4-13.9)	**22.4** (18.0-27.6)	**43.0** (34.2-61.0)	**84.1** (54.7-142)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (creatinine corrected) (2011 - 2012)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**8.99** (8.55-9.46)	**8.46** (7.90-9.27)	**14.1** (13.5-14.9)	**25.3** (23.1-27.8)	**37.7** (32.9-45.3)	2487
Age group							
6-11 years	11-12	**14.9** (12.9-17.2)	**14.8** (13.0-18.2)	**26.5** (22.9-28.2)	**42.6** (30.9-46.5)	**58.1** (43.2-75.1)	395
12-19 years	11-12	**8.33** (7.38-9.41)	**7.60** (6.41-8.29)	**12.6** (10.4-15.5)	**28.7** (20.1-37.2)	**53.9** (31.7-68.8)	388
20 years and older	11-12	**8.61** (8.17-9.07)	**8.20** (7.63-8.94)	**13.5** (12.6-14.1)	**22.5** (20.1-25.3)	**32.0** (28.1-39.3)	1704
Gender							
Males	11-12	**8.15** (7.67-8.66)	**7.80** (7.18-8.21)	**12.2** (11.5-13.2)	**24.2** (20.9-25.9)	**37.2** (29.5-50.2)	1258
Females	11-12	**9.89** (9.16-10.7)	**9.64** (8.33-11.1)	**15.6** (14.7-17.3)	**27.0** (23.9-28.8)	**37.7** (33.2-44.4)	1229
Race/ethnicity							
Mexican Americans	11-12	**10.3** (8.35-12.7)	**9.10** (7.02-12.5)	**18.6** (14.4-21.1)	**30.4** (25.1-36.0)	**49.6** (30.4-114)	316
Non-Hispanic blacks	11-12	**8.80** (7.84-9.87)	**8.12** (7.37-8.96)	**14.7** (12.4-17.8)	**28.2** (20.7-37.4)	**46.2** (29.7-57.5)	665
Non-Hispanic whites	11-12	**8.74** (8.02-9.53)	**8.36** (7.62-9.58)	**13.5** (12.5-14.5)	**23.1** (19.7-25.9)	**32.7** (27.8-42.9)	811
All Hispanics	11-12	**10.4** (9.42-11.5)	**9.29** (8.14-10.5)	**18.7** (16.7-21.1)	**30.5** (27.1-35.6)	**49.6** (33.4-67.9)	571
Asians	11-12	**9.18** (7.54-11.2)	**8.45** (7.34-10.0)	**16.2** (12.7-21.0)	**33.0** (23.6-42.6)	**57.4** (35.8-85.4)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP) (2001 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**13.5** (12.0-15.0)	**14.0** (12.5-15.1)	**29.6** (25.2-34.0)	**59.9** (50.4-70.9)	**120** (87.2-156)	2782
	03-04	**14.5** (13.0-16.1)	**14.4** (12.4-16.7)	**31.4** (27.4-36.6)	**76.7** (59.4-102)	**157** (106-232)	2605
	05-06	**16.2** (14.6-18.0)	**15.1** (13.5-17.1)	**35.5** (32.1-40.3)	**94.8** (78.5-112)	**183** (147-250)	2548
	07-08	**12.2** (10.3-14.3)	**11.3** (10.0-13.3)	**27.1** (21.8-33.8)	**64.2** (47.3-93.6)	**130** (93.6-177)	2604
	09-10	**8.02** (7.11-9.06)	**8.02** (7.27-9.04)	**16.1** (13.8-19.0)	**32.5** (25.2-41.8)	**55.7** (41.8-80.9)	2749
Age group							
6-11 years	01-02	**23.3** (20.9-26.1)	**22.9** (18.5-28.1)	**46.5** (38.1-52.0)	**81.6** (64.7-109)	**142** (93.9-178)	393
	03-04	**25.1** (19.6-32.3)	**25.8** (19.3-31.4)	**51.1** (32.1-76.5)	**97.9** (58.8-197)	**197** (97.6-261)	342
	05-06	**23.0** (20.3-26.1)	**24.5** (19.9-27.6)	**44.3** (38.1-52.3)	**83.8** (63.6-115)	**126** (77.3-253)	356
	07-08	**16.9** (13.9-20.6)	**16.6** (12.4-22.6)	**34.5** (26.2-40.9)	**64.4** (46.9-129)	**137** (63.8-179)	389
	09-10	**9.78** (8.72-11.0)	**11.1** (8.87-12.7)	**20.0** (17.1-21.6)	**35.4** (24.8-41.4)	**48.4** (36.0-74.0)	415
12-19 years	01-02	**17.5** (15.1-20.3)	**18.6** (16.2-20.7)	**35.0** (27.7-42.1)	**70.7** (52.2-104)	**118** (74.0-174)	742
	03-04	**19.5** (16.0-23.7)	**20.3** (18.4-23.5)	**37.8** (32.6-44.6)	**110** (54.6-168)	**212** (103-326)	729
	05-06	**23.0** (18.7-28.4)	**22.1** (18.0-26.2)	**50.7** (42.7-62.2)	**134** (82.3-240)	**263** (134-511)	702
	07-08	**16.9** (12.8-22.3)	**15.9** (11.9-19.3)	**38.2** (24.0-55.5)	**121** (58.1-258)	**258** (120-354)	401
	09-10	**10.0** (8.32-12.1)	**9.82** (7.96-12.3)	**19.0** (15.9-23.5)	**40.0** (26.7-61.5)	**68.4** (32.6-154)	420
20 years and older	01-02	**12.0** (10.5-13.9)	**12.3** (10.4-14.1)	**26.0** (21.6-32.1)	**52.3** (41.8-68.3)	**116** (74.9-160)	1647
	03-04	**12.9** (11.8-14.1)	**12.4** (10.9-14.5)	**27.0** (25.0-30.9)	**68.9** (55.0-86.5)	**139** (92.7-216)	1534
	05-06	**14.7** (13.2-16.4)	**13.4** (12.2-15.1)	**31.9** (28.2-36.2)	**91.6** (74.6-104)	**182** (138-247)	1490
	07-08	**11.1** (9.48-13.1)	**10.7** (9.30-12.3)	**25.5** (20.2-31.4)	**59.8** (42.3-88.9)	**108** (80.0-155)	1814
	09-10	**7.59** (6.64-8.68)	**7.55** (6.69-8.58)	**15.3** (12.6-18.6)	**30.6** (24.1-41.5)	**54.9** (41.8-81.0)	1914
Gender							
Males	01-02	**14.5** (13.0-16.2)	**14.6** (13.1-16.2)	**31.6** (25.6-34.7)	**60.4** (52.3-71.4)	**129** (84.4-167)	1371
	03-04	**15.6** (13.6-17.9)	**14.7** (12.7-18.1)	**31.8** (27.2-39.5)	**83.8** (59.4-134)	**185** (96.2-277)	1250
	05-06	**18.3** (16.0-20.9)	**16.3** (14.7-19.7)	**39.3** (33.4-48.1)	**104** (80.7-140)	**258** (180-337)	1270
	07-08	**12.5** (10.5-15.0)	**11.3** (9.80-13.4)	**26.1** (21.8-32.2)	**61.8** (46.8-98.1)	**139** (83.7-189)	1294
	09-10	**9.14** (8.01-10.4)	**8.76** (7.87-9.88)	**18.2** (14.8-21.0)	**39.3** (27.5-50.9)	**69.6** (50.0-109)	1399
Females	01-02	**12.5** (10.8-14.6)	**13.1** (11.2-15.0)	**28.1** (23.7-33.5)	**57.5** (45.8-72.7)	**115** (81.8-147)	1411
	03-04	**13.4** (11.9-15.1)	**13.7** (11.4-16.4)	**29.5** (26.1-36.6)	**68.6** (53.7-88.1)	**143** (88.2-210)	1355
	05-06	**14.4** (12.6-16.5)	**13.8** (12.5-15.7)	**32.5** (29.3-36.4)	**81.7** (68.6-104)	**159** (114-182)	1278
	07-08	**11.8** (10.0-14.0)	**11.7** (9.80-13.5)	**27.9** (21.3-37.5)	**64.2** (43.9-93.6)	**122** (92.0-191)	1310
	09-10	**7.09** (6.17-8.14)	**7.35** (6.13-8.67)	**15.2** (12.1-17.5)	**27.1** (21.6-36.9)	**48.2** (31.3-67.1)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.1, 0.5, 0.7,0.6, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP) (2001 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**13.1** (11.6-14.9)	**13.4** (11.6-15.0)	**25.5** (21.6-30.8)	**56.6** (40.6-70.3)	**77.3** (70.5-101)	677
	03-04	**12.8** (10.5-15.5)	**13.6** (11.4-15.6)	**25.3** (20.4-29.9)	**46.6** (32.3-70.8)	**76.0** (51.6-153)	652
	05-06	**14.8** (11.7-18.8)	**12.8** (10.5-16.1)	**30.9** (22.6-42.9)	**79.1** (51.7-131)	**152** (92.9-276)	637
	07-08	**12.6** (10.5-15.1)	**11.4** (10.4-12.9)	**25.1** (18.7-37.2)	**53.4** (43.2-91.7)	**118** (88.4-147)	531
	09-10	**9.57** (8.10-11.3)	**9.65** (8.17-11.3)	**19.2** (16.3-23.3)	**39.0** (30.9-54.7)	**64.6** (43.0-95.3)	566
Non-Hispanic blacks	01-02	**19.6** (17.1-22.5)	**20.1** (17.9-22.4)	**39.0** (34.8-44.2)	**80.5** (71.4-97.4)	**153** (102-228)	703
	03-04	**20.2** (17.7-23.0)	**20.1** (17.0-22.5)	**40.0** (33.9-46.9)	**92.6** (68.8-130)	**173** (104-247)	699
	05-06	**21.8** (18.9-25.2)	**18.8** (16.8-21.0)	**46.0** (38.0-59.1)	**130** (104-168)	**243** (159-304)	678
	07-08	**14.2** (12.7-15.9)	**14.0** (12.7-16.3)	**30.5** (25.8-35.9)	**64.2** (52.1-76.1)	**110** (71.9-136)	597
	09-10	**9.57** (8.17-11.2)	**9.64** (8.15-11.1)	**19.8** (16.5-22.1)	**31.4** (25.5-44.0)	**50.9** (31.4-129)	516
Non-Hispanic whites	01-02	**12.8** (11.2-14.6)	**13.2** (11.6-14.6)	**28.5** (23.6-34.0)	**58.6** (48.8-70.9)	**126** (83.7-172)	1216
	03-04	**13.8** (12.4-15.4)	**13.4** (11.3-16.3)	**31.0** (27.0-36.3)	**77.6** (59.4-102)	**161** (98.7-241)	1088
	05-06	**15.5** (13.9-17.3)	**15.0** (13.3-16.5)	**35.3** (30.1-40.8)	**92.6** (74.6-111)	**182** (134-247)	1038
	07-08	**11.7** (9.66-14.2)	**11.0** (9.20-13.6)	**26.9** (20.2-35.1)	**64.2** (43.4-108)	**137** (90.0-197)	1077
	09-10	**7.59** (6.60-8.73)	**7.55** (6.81-8.63)	**15.7** (12.9-18.6)	**29.1** (22.9-46.5)	**55.7** (41.5-83.5)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.1, 0.5, 0.7,0.6, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP) (2011 - 2012)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**5.08** (4.78-5.41)	**5.30** (4.90-5.80)	**10.3** (9.40-11.5)	**18.4** (17.0-19.5)	**26.5** (23.7-30.2)	2489
Age group							
6-11 years	11-12	**6.96** (5.86-8.28)	**8.10** (6.90-9.70)	**14.6** (12.8-17.1)	**26.1** (22.6-28.4)	**34.7** (27.9-42.5)	396
12-19 years	11-12	**5.70** (4.64-7.01)	**5.70** (4.60-7.30)	**12.2** (10.5-13.7)	**22.2** (19.1-29.5)	**35.1** (23.0-46.8)	388
20 years and older	11-12	**4.83** (4.45-5.23)	**5.10** (4.70-5.60)	**9.60** (8.50-10.8)	**16.7** (14.5-18.6)	**23.0** (20.8-26.5)	1705
Gender							
Males	11-12	**5.50** (5.07-5.95)	**5.70** (5.10-6.30)	**10.5** (8.90-12.2)	**18.7** (16.9-21.2)	**28.1** (23.4-34.3)	1259
Females	11-12	**4.71** (4.39-5.07)	**5.00** (4.70-5.60)	**10.2** (9.20-11.1)	**18.1** (15.8-19.3)	**25.4** (21.9-29.6)	1230
Race/ethnicity							
Mexican Americans	11-12	**5.86** (4.69-7.33)	**5.90** (4.40-7.50)	**11.6** (8.40-14.4)	**20.5** (15.4-25.4)	**31.5** (22.5-35.1)	316
Non-Hispanic blacks	11-12	**7.30** (6.48-8.22)	**7.40** (6.70-8.00)	**14.0** (11.5-16.0)	**26.0** (21.1-32.1)	**36.9** (30.8-48.2)	665
Non-Hispanic whites	11-12	**4.62** (4.31-4.96)	**4.90** (4.50-5.50)	**9.50** (8.40-10.8)	**16.1** (13.8-18.6)	**21.2** (19.0-25.9)	813
All Hispanics	11-12	**5.94** (5.17-6.83)	**6.00** (4.80-7.30)	**11.8** (9.70-14.0)	**22.5** (19.8-25.8)	**34.3** (26.2-39.8)	571
Asians	11-12	**4.39** (3.63-5.31)	**4.20** (3.30-5.20)	**9.40** (7.20-11.3)	**19.0** (15.0-27.8)	**36.8** (25.4-52.4)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP) (creatinine corrected) (2001 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**12.6** (11.5-13.9)	**11.2** (10.2-12.3)	**21.3** (18.3-23.8)	**45.2** (37.1-58.1)	**87.0** (68.0-124)	2782
	03-04	**13.6** (12.4-14.8)	**12.1** (11.0-12.9)	**24.3** (20.9-27.8)	**63.0** (47.8-75.8)	**118** (94.1-153)	2605
	05-06	**15.8** (14.2-17.5)	**13.5** (12.4-14.7)	**28.9** (26.0-33.8)	**77.7** (62.4-91.1)	**144** (118-172)	2548
	07-08	**12.3** (10.7-14.0)	**11.0** (9.72-12.2)	**22.3** (18.4-27.9)	**52.9** (37.9-74.6)	**107** (74.8-136)	2604
	09-10	**8.37** (7.31-9.59)	**7.44** (6.71-8.42)	**13.5** (11.5-15.7)	**25.9** (21.4-34.6)	**47.7** (34.6-67.8)	2749
Age group							
6-11 years	01-02	**26.6** (24.0-29.4)	**22.8** (20.3-25.0)	**43.3** (33.6-47.1)	**74.7** (69.0-91.9)	**131** (83.0-183)	393
	03-04	**26.6** (21.4-33.0)	**25.3** (17.8-32.4)	**43.6** (34.2-63.2)	**77.1** (63.0-118)	**121** (76.3-435)	342
	05-06	**25.4** (22.5-28.6)	**24.4** (21.4-26.4)	**42.7** (36.0-46.9)	**70.4** (52.8-117)	**136** (77.2-195)	356
	07-08	**20.8** (17.1-25.4)	**18.5** (15.6-21.5)	**35.0** (26.4-46.0)	**84.1** (47.2-137)	**145** (84.8-187)	389
	09-10	**12.7** (11.4-14.2)	**12.6** (11.5-14.1)	**20.8** (16.5-25.1)	**33.3** (29.5-44.1)	**45.5** (33.7-74.5)	415
12-19 years	01-02	**13.5** (12.0-15.2)	**12.0** (10.8-14.3)	**23.4** (20.0-28.5)	**48.4** (39.2-54.9)	**70.5** (55.0-97.2)	742
	03-04	**14.6** (12.6-16.9)	**12.7** (11.6-14.4)	**25.5** (20.7-33.8)	**67.9** (42.3-143)	**153** (61.8-209)	729
	05-06	**17.2** (14.1-20.9)	**15.3** (12.5-18.6)	**32.5** (25.7-41.3)	**84.2** (49.1-147)	**163** (93.1-250)	702
	07-08	**13.2** (10.3-16.7)	**11.1** (9.08-13.5)	**25.9** (18.9-35.6)	**86.3** (39.4-128)	**132** (84.3-203)	401
	09-10	**8.06** (6.57-9.88)	**7.05** (6.16-8.25)	**13.3** (9.53-18.3)	**24.8** (17.8-47.9)	**55.2** (23.6-110)	420
20 years and older	01-02	**11.4** (10.2-12.8)	**10.1** (8.89-11.4)	**17.5** (15.2-21.8)	**38.4** (30.5-52.5)	**84.3** (53.3-128)	1647
	03-04	**12.4** (11.5-13.3)	**11.0** (10.0-12.0)	**20.9** (18.6-22.8)	**53.9** (40.7-70.2)	**109** (88.6-130)	1534
	05-06	**14.8** (13.3-16.4)	**12.4** (11.2-13.5)	**26.7** (23.8-31.3)	**76.3** (61.0-89.9)	**144** (106-170)	1490
	07-08	**11.4** (10.0-13.0)	**10.0** (9.15-11.2)	**20.8** (16.7-25.6)	**47.3** (33.2-65.3)	**87.4** (62.7-136)	1814
	09-10	**8.04** (6.99-9.24)	**7.19** (6.36-8.00)	**12.7** (10.7-14.7)	**24.3** (19.7-34.6)	**47.4** (33.7-67.3)	1914
Gender							
Males	01-02	**11.8** (10.7-13.0)	**10.2** (8.93-11.7)	**21.2** (18.5-23.3)	**46.1** (35.3-58.7)	**84.2** (69.6-104)	1371
	03-04	**12.3** (11.1-13.5)	**11.1** (10.0-12.0)	**21.6** (17.6-26.9)	**59.1** (45.4-72.0)	**120** (72.0-162)	1250
	05-06	**14.7** (12.9-16.7)	**12.6** (10.9-14.3)	**27.1** (23.3-35.6)	**79.5** (59.6-96.9)	**147** (120-190)	1270
	07-08	**10.5** (9.08-12.2)	**9.25** (8.08-10.6)	**18.9** (15.9-23.1)	**46.7** (32.6-62.4)	**86.4** (56.5-144)	1294
	09-10	**8.19** (7.15-9.38)	**7.07** (6.59-7.55)	**13.4** (10.8-15.8)	**30.2** (21.7-41.2)	**52.1** (41.2-82.3)	1399
Females	01-02	**13.5** (11.9-15.2)	**12.0** (10.8-13.7)	**21.5** (18.0-25.6)	**44.8** (36.8-61.6)	**92.3** (61.0-139)	1411
	03-04	**14.9** (13.4-16.7)	**12.7** (11.4-14.2)	**26.6** (21.8-30.6)	**65.6** (48.0-90.1)	**118** (97.0-157)	1355
	05-06	**16.9** (15.1-19.0)	**14.7** (13.2-16.5)	**30.3** (26.6-34.7)	**76.4** (57.6-97.2)	**137** (106-170)	1278
	07-08	**14.2** (12.5-16.0)	**12.5** (11.5-13.8)	**25.9** (21.2-31.0)	**61.1** (40.9-84.1)	**114** (84.3-142)	1310
	09-10	**8.55** (7.37-9.93)	**8.06** (6.76-9.33)	**13.6** (11.6-16.2)	**24.1** (20.0-32.7)	**43.2** (27.7-64.5)	1350

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP) (creatinine corrected) (2001 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**12.4** (11.4-13.5)	**11.0** (10.5-12.3)	**20.9** (18.5-24.4)	**44.6** (33.4-56.2)	**65.9** (53.1-83.1)	677
	03-04	**11.5** (9.81-13.6)	**10.7** (9.04-12.3)	**18.8** (15.6-24.6)	**39.1** (31.8-53.9)	**63.0** (47.2-121)	652
	05-06	**13.3** (11.1-16.1)	**11.4** (9.58-13.6)	**24.0** (19.4-30.4)	**61.2** (45.6-85.9)	**102** (69.9-200)	637
	07-08	**12.3** (10.0-15.0)	**10.6** (8.57-14.1)	**21.7** (16.1-28.7)	**53.1** (32.7-85.2)	**113** (79.7-149)	531
	09-10	**9.50** (8.16-11.1)	**8.72** (8.13-9.61)	**16.6** (12.9-20.5)	**35.4** (24.4-46.6)	**56.7** (40.9-82.3)	566
Non-Hispanic blacks	01-02	**13.8** (12.3-15.4)	**13.1** (12.0-14.2)	**23.9** (20.0-29.3)	**58.3** (45.3-79.7)	**101** (81.3-124)	703
	03-04	**14.3** (13.1-15.6)	**13.3** (11.3-15.5)	**24.8** (21.7-27.7)	**61.2** (46.8-76.6)	**105** (79.7-152)	699
	05-06	**15.3** (13.2-17.8)	**11.6** (9.87-14.6)	**29.1** (24.7-38.5)	**77.1** (61.9-113)	**172** (99.8-251)	678
	07-08	**11.0** (9.94-12.2)	**9.90** (9.16-11.1)	**20.6** (16.6-23.5)	**42.2** (33.8-58.6)	**75.8** (57.2-124)	597
	09-10	**6.92** (5.60-8.57)	**6.49** (5.12-8.24)	**11.4** (9.09-14.1)	**19.2** (14.9-27.3)	**28.1** (19.8-61.1)	516
Non-Hispanic whites	01-02	**12.7** (11.4-14.0)	**11.1** (9.90-12.3)	**20.8** (18.0-23.9)	**45.7** (35.9-64.9)	**96.0** (68.5-161)	1216
	03-04	**13.7** (12.2-15.3)	**12.0** (10.5-12.9)	**24.9** (20.7-28.6)	**69.5** (51.4-95.3)	**124** (90.3-182)	1088
	05-06	**16.3** (14.8-18.0)	**14.0** (12.9-15.7)	**30.8** (27.3-34.8)	**79.3** (66.0-93.8)	**139** (117-163)	1038
	07-08	**12.2** (10.3-14.5)	**11.0** (9.38-13.1)	**22.3** (17.4-30.4)	**51.4** (35.7-77.7)	**107** (74.6-139)	1077
	09-10	**8.53** (7.35-9.90)	**7.62** (6.76-8.54)	**13.7** (11.2-16.2)	**24.9** (20.3-35.7)	**47.8** (32.8-76.4)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP) (creatinine corrected) (2011 - 2012)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**5.78** (5.51-6.06)	**5.51** (5.12-5.83)	**8.99** (8.41-9.83)	**15.6** (14.3-16.8)	**23.4** (19.6-28.0)	2487
Age group							
6-11 years	11-12	**9.93** (8.63-11.4)	**9.89** (8.25-11.4)	**16.5** (14.3-18.9)	**25.6** (22.9-30.2)	**34.5** (27.9-41.9)	395
12-19 years	11-12	**5.55** (4.95-6.23)	**5.21** (4.81-5.61)	**8.54** (7.09-11.1)	**16.3** (12.9-21.3)	**31.6** (16.8-35.3)	388
20 years and older	11-12	**5.48** (5.23-5.74)	**5.19** (4.89-5.56)	**8.39** (7.95-8.98)	**13.9** (12.8-15.3)	**19.3** (16.6-25.4)	1704
Gender							
Males	11-12	**5.14** (4.86-5.43)	**4.86** (4.55-5.12)	**7.83** (7.29-8.24)	**14.7** (12.7-16.1)	**22.6** (18.1-29.7)	1258
Females	11-12	**6.48** (6.07-6.91)	**6.34** (5.71-6.91)	**10.0** (9.34-11.0)	**16.5** (14.7-18.6)	**23.5** (19.5-27.9)	1229
Race/ethnicity							
Mexican Americans	11-12	**6.61** (5.43-8.05)	**6.00** (4.83-7.45)	**11.3** (8.87-13.9)	**18.9** (15.8-22.8)	**28.1** (18.2-60.8)	316
Non-Hispanic blacks	11-12	**5.68** (5.11-6.32)	**5.31** (4.71-5.70)	**9.33** (7.79-10.8)	**16.9** (13.6-23.4)	**29.4** (18.8-39.2)	665
Non-Hispanic whites	11-12	**5.61** (5.17-6.08)	**5.41** (4.90-5.99)	**8.42** (7.84-9.61)	**14.3** (12.5-15.8)	**20.5** (16.6-25.4)	811
All Hispanics	11-12	**6.66** (6.05-7.33)	**6.04** (5.49-6.74)	**11.3** (10.0-13.5)	**18.9** (16.9-21.0)	**30.2** (20.8-41.9)	571
Asians	11-12	**5.88** (4.96-6.97)	**5.30** (4.59-6.36)	**10.0** (8.11-12.2)	**20.2** (14.7-26.3)	**39.3** (23.5-50.1)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP) (2003 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**34.7** (31.0-38.9)	**33.0** (29.1-37.4)	**71.8** (61.7-84.8)	**168** (133-240)	**339** (235-506)	2605
	05-06	**38.6** (34.7-42.9)	**35.6** (31.1-40.3)	**79.7** (70.9-92.9)	**211** (180-246)	**386** (311-484)	2548
	07-08	**33.3** (28.7-38.6)	**31.2** (27.1-36.0)	**69.5** (55.8-86.3)	**153** (120-216)	**308** (220-397)	2604
	09-10	**20.7** (18.5-23.3)	**20.4** (18.1-23.5)	**39.9** (34.9-45.5)	**78.4** (67.2-95.5)	**127** (99.5-199)	2749
Age group							
6-11 years	03-04	**58.2** (44.7-75.6)	**51.6** (39.2-67.6)	**112** (71.4-182)	**314** (124-524)	**391** (238-781)	342
	05-06	**57.4** (50.2-65.7)	**53.5** (42.7-67.2)	**94.7** (83.2-108)	**200** (154-247)	**297** (196-548)	356
	07-08	**46.6** (39.2-55.3)	**44.1** (34.9-54.7)	**92.7** (64.7-112)	**156** (117-278)	**357** (176-441)	389
	09-10	**27.7** (24.7-31.2)	**29.4** (25.4-33.2)	**48.5** (39.0-60.2)	**87.1** (64.4-102)	**118** (87.1-202)	415
12-19 years	03-04	**44.6** (36.8-54.0)	**42.7** (38.4-47.6)	**86.5** (67.3-108)	**220** (120-397)	**448** (235-808)	729
	05-06	**52.9** (43.0-65.2)	**46.7** (39.4-61.6)	**114** (85.6-173)	**314** (195-515)	**560** (324-1180)	702
	07-08	**44.3** (35.2-55.9)	**38.9** (28.9-49.3)	**97.3** (64.3-127)	**247** (140-456)	**476** (231-977)	401
	09-10	**26.2** (22.4-30.6)	**25.7** (21.2-30.0)	**50.1** (38.3-57.7)	**90.3** (58.2-162)	**147** (83.9-349)	420
20 years and older	03-04	**31.3** (28.6-34.4)	**29.2** (26.2-33.0)	**63.5** (56.5-73.9)	**157** (130-187)	**312** (199-457)	1534
	05-06	**35.1** (31.5-39.0)	**31.3** (28.1-35.7)	**72.7** (65.4-82.4)	**193** (163-237)	**377** (285-460)	1490
	07-08	**30.7** (26.4-35.8)	**29.2** (24.3-34.4)	**63.2** (51.6-80.0)	**145** (109-206)	**286** (182-378)	1814
	09-10	**19.4** (17.0-22.0)	**18.8** (15.7-22.3)	**37.7** (32.8-44.0)	**76.9** (63.1-92.8)	**126** (96.1-197)	1914
Gender							
Males	03-04	**37.9** (33.1-43.5)	**34.7** (30.0-39.5)	**73.7** (60.8-91.9)	**187** (133-300)	**388** (222-660)	1250
	05-06	**43.6** (38.1-49.8)	**39.7** (31.9-46.2)	**87.0** (76.8-103)	**260** (188-308)	**460** (347-670)	1270
	07-08	**34.4** (29.3-40.5)	**31.5** (27.3-35.7)	**65.1** (52.1-87.4)	**161** (120-217)	**321** (213-422)	1294
	09-10	**23.4** (20.7-26.4)	**23.0** (20.2-25.6)	**44.9** (40.1-51.0)	**87.1** (70.3-110)	**162** (107-288)	1399
Females	03-04	**31.9** (28.1-36.2)	**31.3** (27.5-35.8)	**69.3** (58.9-81.9)	**154** (128-199)	**312** (182-441)	1355
	05-06	**34.3** (30.4-38.6)	**31.7** (28.0-36.6)	**71.0** (63.0-85.3)	**192** (156-217)	**309** (251-386)	1278
	07-08	**32.3** (27.8-37.5)	**31.0** (26.4-38.3)	**73.0** (56.9-90.2)	**147** (112-220)	**297** (185-420)	1310
	09-10	**18.5** (16.2-21.0)	**18.8** (15.8-22.4)	**34.7** (29.3-41.5)	**72.9** (56.3-93.2)	**111** (90.3-146)	1350
Race/ethnicity							
Mexican Americans	03-04	**31.9** (27.1-37.6)	**31.5** (26.8-37.4)	**57.4** (45.9-71.8)	**116** (86.0-162)	**175** (133-355)	652
	05-06	**39.4** (30.3-51.2)	**34.2** (24.1-47.1)	**74.6** (54.0-111)	**220** (124-338)	**394** (222-673)	637
	07-08	**36.7** (30.6-44.0)	**31.3** (27.0-35.7)	**71.9** (54.9-91.7)	**162** (123-241)	**321** (209-477)	531
	09-10	**26.2** (22.5-30.4)	**25.8** (22.3-29.8)	**51.0** (41.3-57.4)	**92.6** (74.5-122)	**160** (113-245)	566
Non-Hispanic blacks	03-04	**42.6** (37.0-49.2)	**38.3** (33.8-46.9)	**82.5** (68.7-103)	**191** (146-246)	**339** (244-468)	699
	05-06	**46.6** (41.3-52.5)	**40.3** (35.6-46.1)	**96.3** (76.6-132)	**256** (208-347)	**455** (328-528)	678
	07-08	**35.0** (31.1-39.4)	**35.6** (30.7-38.8)	**71.6** (59.1-84.5)	**151** (113-192)	**235** (184-338)	597
	09-10	**21.9** (18.6-25.7)	**22.3** (18.2-25.6)	**40.5** (35.7-47.1)	**77.0** (61.1-97.1)	**127** (76.0-268)	516
Non-Hispanic whites	03-04	**33.8** (30.1-37.9)	**32.1** (27.6-37.5)	**72.4** (62.0-87.7)	**167** (133-240)	**354** (220-560)	1088
	05-06	**37.0** (33.4-41.0)	**35.4** (30.4-40.9)	**79.7** (70.0-93.3)	**203** (174-237)	**380** (284-484)	1038
	07-08	**32.0** (26.7-38.3)	**30.4** (24.5-38.0)	**67.6** (52.5-90.9)	**145** (105-244)	**316** (197-476)	1077
	09-10	**19.6** (17.2-22.2)	**19.3** (16.4-23.1)	**39.3** (33.0-45.3)	**75.0** (61.9-95.7)	**120** (95.5-197)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.3, 0.6, 0.5, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP) (2011 - 2012)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**12.9** (12.0-13.9)	**13.5** (12.4-14.8)	**25.3** (23.6-26.7)	**43.9** (40.0-51.1)	**68.9** (60.4-75.2)	2489
Age group							
6-11 years	11-12	**18.8** (16.1-21.9)	**21.6** (17.3-24.1)	**36.8** (31.5-41.4)	**63.5** (51.5-71.5)	**81.5** (68.1-95.1)	396
12-19 years	11-12	**14.3** (11.3-18.0)	**14.0** (11.6-17.5)	**28.4** (23.5-36.8)	**59.3** (47.1-70.2)	**74.6** (59.3-135)	388
20 years and older	11-12	**12.2** (11.3-13.3)	**13.0** (11.4-14.4)	**23.8** (21.8-25.8)	**40.2** (36.9-43.9)	**61.8** (52.1-73.6)	1705
Gender							
Males	11-12	**14.3** (13.0-15.6)	**14.6** (12.7-16.4)	**24.7** (23.1-27.6)	**45.7** (40.2-54.9)	**71.5** (59.8-88.4)	1259
Females	11-12	**11.8** (10.8-12.9)	**12.4** (11.2-13.7)	**25.6** (23.4-26.6)	**42.3** (37.4-49.5)	**64.9** (54.4-76.8)	1230
Race/ethnicity							
Mexican Americans	11-12	**15.8** (12.7-19.6)	**14.9** (12.7-18.3)	**28.1** (22.6-34.3)	**51.3** (42.5-71.3)	**72.6** (56.6-109)	316
Non-Hispanic blacks	11-12	**16.4** (14.5-18.5)	**16.2** (14.4-18.8)	**30.7** (26.0-36.6)	**60.9** (47.5-69.9)	**78.1** (68.2-96.7)	665
Non-Hispanic whites	11-12	**11.8** (10.9-12.9)	**12.5** (11.0-14.6)	**23.8** (21.8-25.7)	**39.9** (34.8-44.2)	**55.8** (47.1-76.8)	813
All Hispanics	11-12	**16.0** (14.0-18.2)	**15.2** (12.9-18.2)	**30.1** (24.5-37.8)	**59.8** (50.0-68.9)	**76.0** (70.2-104)	571
Asians	11-12	**12.0** (10.2-14.2)	**11.7** (10.2-13.7)	**23.6** (19.5-27.7)	**51.1** (36.5-70.0)	**80.5** (58.7-138)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP) (creatinine corrected) (2003 – 2010)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**32.6** (29.6-36.0)	**27.0** (24.3-30.6)	**54.6** (48.0-63.5)	**139** (109-186)	**251** (192-356)	2605
	05-06	**37.6** (33.7-42.0)	**32.2** (29.5-37.0)	**67.5** (58.2-80.8)	**168** (139-209)	**290** (261-328)	2548
	07-08	**33.6** (29.7-38.0)	**29.1** (25.8-32.2)	**58.7** (49.6-68.8)	**138** (109-164)	**233** (178-319)	2604
	09-10	**21.6** (19.0-24.7)	**19.2** (16.8-22.1)	**33.7** (30.0-40.0)	**69.4** (54.0-84.3)	**121** (85.1-184)	2749
Age group							
6-11 years	03-04	**61.5** (49.0-77.2)	**52.2** (41.6-73.8)	**104** (74.2-140)	**210** (111-500)	**372** (192-988)	342
	05-06	**63.2** (55.6-71.9)	**54.2** (48.1-63.6)	**92.8** (82.6-111)	**160** (124-247)	**312** (172-480)	356
	07-08	**57.4** (49.2-66.9)	**49.6** (42.7-61.5)	**94.2** (79.5-122)	**185** (138-294)	**376** (188-404)	389
	09-10	**36.1** (32.4-40.3)	**33.6** (32.3-36.8)	**55.4** (43.9-66.9)	**88.7** (69.2-113)	**121** (90.6-224)	415
12-19 years	03-04	**33.4** (28.7-38.7)	**27.1** (23.9-32.0)	**55.0** (43.8-83.8)	**168** (92.5-289)	**294** (159-387)	729
	05-06	**39.5** (32.5-47.8)	**33.9** (27.9-41.0)	**72.7** (56.9-96.7)	**197** (106-327)	**385** (216-531)	702
	07-08	**34.5** (28.1-42.3)	**28.0** (23.2-35.0)	**65.9** (47.5-85.9)	**159** (90.1-233)	**246** (159-489)	401
	09-10	**21.1** (17.4-25.5)	**18.2** (15.6-20.7)	**33.2** (25.5-43.3)	**64.9** (42.7-158)	**158** (58.4-246)	420
20 years and older	03-04	**30.1** (27.7-32.7)	**25.1** (22.9-27.6)	**49.1** (44.1-55.2)	**126** (101-154)	**237** (191-315)	1534
	05-06	**35.2** (31.2-39.6)	**29.8** (26.1-33.3)	**60.8** (54.2-74.0)	**167** (131-206)	**279** (247-322)	1490
	07-08	**31.5** (27.8-35.8)	**27.8** (24.1-30.8)	**53.1** (45.0-65.4)	**128** (101-155)	**214** (162-319)	1814
	09-10	**20.5** (17.9-23.5)	**18.2** (15.9-20.5)	**31.7** (27.4-36.8)	**65.0** (52.1-80.6)	**118** (81.3-173)	1914
Gender							
Males	03-04	**29.8** (26.8-33.1)	**23.5** (21.4-27.1)	**50.7** (42.2-61.7)	**132** (98.0-191)	**248** (159-422)	1250
	05-06	**35.0** (30.7-39.9)	**29.0** (25.7-32.1)	**69.3** (54.2-82.9)	**172** (141-210)	**301** (249-376)	1270
	07-08	**29.0** (25.3-33.2)	**25.1** (21.7-28.8)	**47.6** (40.8-57.4)	**120** (91.7-157)	**210** (157-331)	1294
	09-10	**21.0** (18.4-23.9)	**18.4** (16.1-20.4)	**33.1** (29.2-38.5)	**70.2** (53.4-94.6)	**125** (92.8-210)	1399
Females	03-04	**35.5** (31.6-40.0)	**30.6** (26.4-35.5)	**58.3** (48.8-71.8)	**144** (108-192)	**251** (192-349)	1355
	05-06	**40.3** (36.2-44.9)	**36.7** (31.6-40.0)	**66.1** (58.2-83.7)	**168** (127-206)	**279** (240-341)	1278
	07-08	**38.7** (34.5-43.3)	**32.8** (30.0-36.4)	**67.8** (58.5-80.0)	**147** (117-176)	**266** (176-379)	1310
	09-10	**22.3** (19.3-25.7)	**20.5** (17.2-23.9)	**34.9** (30.0-41.7)	**67.0** (53.5-80.8)	**104** (80.8-170)	1350
Race/ethnicity							
Mexican Americans	03-04	**28.8** (25.4-32.6)	**24.7** (22.4-26.3)	**46.7** (39.0-56.3)	**94.7** (73.2-137)	**152** (118-238)	652
	05-06	**35.5** (28.7-43.7)	**29.8** (25.5-34.9)	**61.5** (48.4-86.2)	**165** (105-201)	**278** (181-501)	637
	07-08	**35.8** (29.1-44.0)	**30.6** (23.2-38.6)	**64.1** (47.2-84.8)	**151** (92.3-240)	**286** (198-402)	531
	09-10	**26.0** (22.5-30.0)	**23.8** (21.3-27.0)	**40.1** (35.0-52.3)	**88.8** (69.5-104)	**148** (100-203)	566
Non-Hispanic blacks	03-04	**30.3** (27.7-33.2)	**27.0** (23.2-30.7)	**51.1** (41.6-64.0)	**135** (100-161)	**212** (173-252)	699
	05-06	**32.7** (28.9-37.1)	**27.1** (22.4-31.5)	**62.4** (53.1-76.0)	**166** (119-260)	**370** (231-429)	678
	07-08	**27.2** (24.3-30.5)	**23.5** (21.9-26.1)	**49.1** (37.7-58.6)	**103** (85.9-132)	**178** (140-259)	597
	09-10	**15.9** (12.6-19.9)	**14.5** (11.5-18.8)	**26.3** (19.5-32.9)	**48.0** (32.6-66.4)	**70.7** (46.1-209)	516
Non-Hispanic whites	03-04	**33.4** (29.5-37.7)	**27.0** (23.5-31.6)	**56.8** (48.6-69.4)	**145** (109-198)	**294** (193-385)	1088
	05-06	**39.0** (34.9-43.4)	**34.3** (30.3-39.1)	**69.5** (59.5-83.7)	**182** (143-214)	**284** (237-324)	1038
	07-08	**33.4** (28.4-39.3)	**29.2** (25.1-34.6)	**57.7** (46.6-72.4)	**138** (101-166)	**233** (164-338)	1077
	09-10	**22.0** (19.1-25.3)	**19.4** (16.8-22.9)	**34.0** (29.3-42.5)	**67.6** (52.5-84.3)	**113** (81.3-188)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP) (creatinine corrected) (2011 - 2012)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**14.7** (13.8-15.7)	**14.1** (12.9-15.1)	**22.7** (21.1-25.3)	**38.9** (34.5-44.3)	**59.8** (54.5-63.5)	2487
Age group							
6-11 years	11-12	**26.8** (23.6-30.3)	**26.2** (22.6-29.4)	**41.5** (36.5-47.2)	**63.5** (57.5-70.7)	**84.4** (71.3-107)	395
12-19 years	11-12	**13.9** (11.7-16.5)	**12.5** (10.7-15.5)	**22.2** (16.5-29.2)	**41.4** (30.3-60.8)	**70.9** (46.9-92.9)	388
20 years and older	11-12	**13.9** (13.0-14.8)	**13.3** (12.4-14.4)	**21.3** (19.5-22.8)	**33.9** (30.6-39.0)	**53.7** (42.9-63.2)	1704
Gender							
Males	11-12	**13.3** (12.6-14.1)	**12.5** (11.6-13.3)	**20.1** (17.8-21.6)	**35.0** (31.0-38.8)	**56.4** (46.4-62.4)	1258
Females	11-12	**16.2** (14.6-18.0)	**15.8** (14.1-17.7)	**25.8** (22.2-29.4)	**44.1** (37.6-50.8)	**63.2** (54.3-72.4)	1229
Race/ethnicity							
Mexican Americans	11-12	**17.8** (14.6-21.6)	**15.3** (12.7-19.8)	**28.4** (21.9-39.0)	**53.4** (44.7-62.9)	**80.0** (52.4-115)	316
Non-Hispanic blacks	11-12	**12.8** (11.3-14.4)	**11.8** (10.6-13.0)	**20.8** (18.0-25.0)	**40.4** (29.6-50.3)	**59.4** (46.2-75.6)	665
Non-Hispanic whites	11-12	**14.3** (13.1-15.7)	**13.9** (12.6-15.2)	**21.8** (19.7-24.6)	**34.3** (30.1-42.2)	**54.9** (42.9-60.9)	811
All Hispanics	11-12	**17.9** (16.2-19.7)	**15.7** (14.1-18.1)	**30.0** (25.8-33.4)	**53.4** (44.8-64.0)	**80.0** (59.0-107)	571
Asians	11-12	**16.1** (13.7-18.9)	**14.7** (12.3-17.2)	**26.4** (21.7-33.0)	**51.2** (41.5-76.9)	**90.0** (51.0-142)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxynonyl) phthalate (MCNP) (2005 – 2010)

Metabolite of Di-isodecyl phthalate (DiDP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**2.73** (2.50-2.98)	**2.70** (2.40-3.00)	**5.30** (4.80-5.90)	**10.2** (8.80-11.9)	**17.5** (14.0-21.4)	2548
	07-08	**2.42** (2.17-2.71)	**2.40** (2.20-2.70)	**4.70** (4.20-5.30)	**9.20** (8.00-10.6)	**16.1** (12.3-21.0)	2604
	09-10	**2.88** (2.58-3.22)	**2.91** (2.51-3.26)	**5.52** (4.83-6.30)	**10.6** (9.14-12.6)	**16.8** (13.9-22.1)	2749
Age group							
6-11 years	05-06	**4.54** (3.94-5.24)	**4.70** (4.00-5.60)	**8.10** (6.80-9.60)	**14.6** (10.8-19.1)	**22.8** (16.7-35.3)	356
	07-08	**3.15** (2.65-3.74)	**3.40** (2.90-3.80)	**5.40** (4.60-6.80)	**9.10** (7.40-12.3)	**14.9** (9.10-24.8)	389
	09-10	**3.45** (2.95-4.03)	**3.59** (3.04-4.34)	**6.39** (5.39-7.41)	**9.65** (8.75-11.2)	**14.5** (10.4-23.2)	415
12-19 years	05-06	**3.18** (2.74-3.68)	**3.30** (2.90-3.80)	**6.00** (4.70-7.20)	**10.3** (7.60-13.7)	**16.5** (11.5-21.5)	702
	07-08	**2.86** (2.59-3.16)	**2.70** (2.40-2.90)	**5.10** (4.30-5.70)	**10.3** (8.90-13.0)	**16.8** (10.7-32.4)	401
	09-10	**3.02** (2.61-3.51)	**3.05** (2.41-3.65)	**5.11** (4.49-6.43)	**11.0** (7.24-14.6)	**16.9** (10.9-32.0)	420
20 years and older	05-06	**2.51** (2.27-2.78)	**2.40** (2.20-2.70)	**4.90** (4.40-5.40)	**9.50** (7.90-11.9)	**17.0** (13.1-21.5)	1490
	07-08	**2.29** (2.04-2.58)	**2.30** (2.00-2.50)	**4.50** (4.00-5.10)	**9.10** (7.60-10.7)	**16.1** (12.2-21.4)	1814
	09-10	**2.81** (2.49-3.16)	**2.80** (2.44-3.09)	**5.52** (4.69-6.45)	**10.7** (8.95-13.5)	**17.3** (13.5-23.7)	1914
Gender							
Males	05-06	**3.16** (2.82-3.54)	**3.00** (2.70-3.50)	**5.90** (5.10-6.90)	**11.0** (8.80-14.0)	**19.5** (14.0-28.0)	1270
	07-08	**2.75** (2.50-3.03)	**2.60** (2.40-2.90)	**5.10** (4.50-5.70)	**9.50** (8.00-12.2)	**19.4** (12.4-29.1)	1294
	09-10	**3.14** (2.80-3.53)	**3.11** (2.72-3.61)	**5.75** (5.13-6.56)	**10.4** (9.14-11.5)	**15.1** (12.5-20.5)	1399
Females	05-06	**2.37** (2.13-2.65)	**2.30** (2.00-2.70)	**4.80** (4.30-5.30)	**9.30** (7.60-11.5)	**14.7** (13.1-18.2)	1278
	07-08	**2.14** (1.84-2.49)	**2.20** (1.80-2.60)	**4.40** (3.80-4.90)	**9.00** (7.30-10.3)	**14.1** (10.8-18.5)	1310
	09-10	**2.66** (2.32-3.04)	**2.60** (2.21-2.98)	**5.21** (4.43-6.17)	**11.6** (8.88-14.8)	**17.5** (14.6-23.4)	1350
Race/ethnicity							
Mexican Americans	05-06	**2.72** (2.40-3.08)	**2.70** (2.40-3.20)	**4.90** (4.30-5.70)	**9.00** (7.00-12.4)	**14.4** (9.00-26.8)	637
	07-08	**2.37** (2.15-2.62)	**2.30** (2.10-2.60)	**4.30** (3.70-5.10)	**8.40** (6.50-10.5)	**12.3** (8.40-16.2)	531
	09-10	**2.35** (2.15-2.57)	**2.51** (2.18-2.69)	**4.35** (3.83-4.83)	**7.72** (6.56-9.53)	**11.0** (8.09-14.1)	566
Non-Hispanic blacks	05-06	**3.18** (2.75-3.67)	**3.20** (2.70-3.80)	**5.90** (4.90-7.30)	**13.0** (9.50-14.6)	**19.2** (14.6-30.5)	678
	07-08	**2.89** (2.64-3.17)	**2.90** (2.50-3.10)	**5.60** (4.80-6.20)	**11.9** (9.10-15.4)	**21.7** (17.9-28.9)	597
	09-10	**3.51** (2.92-4.22)	**3.64** (2.97-4.24)	**6.94** (5.75-8.47)	**13.2** (10.2-17.5)	**20.8** (13.5-41.7)	516
Non-Hispanic whites	05-06	**2.67** (2.39-2.98)	**2.60** (2.30-2.90)	**5.30** (4.70-6.10)	**10.1** (8.20-12.6)	**17.6** (12.6-24.3)	1038
	07-08	**2.42** (2.09-2.81)	**2.40** (2.10-2.70)	**4.70** (4.10-5.60)	**9.10** (7.60-11.6)	**14.9** (10.5-29.1)	1077
	09-10	**2.98** (2.61-3.40)	**2.96** (2.53-3.48)	**5.59** (4.78-6.57)	**10.7** (8.83-14.3)	**16.6** (12.6-23.7)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.6, 0.5, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiDP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxynonyl) phthalate (MCNP) (2011 - 2012)

Metabolite of Di-isodecyl phthalate (DiDP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**2.49** (2.31-2.68)	**2.40** (2.10-2.60)	**4.60** (4.20-5.30)	**8.90** (8.00-10.6)	**15.2** (11.4-20.0)	2489
Age group							
6-11 years	11-12	**2.51** (2.15-2.93)	**2.70** (2.00-3.00)	**4.50** (3.80-5.40)	**7.60** (6.60-8.90)	**12.9** (7.90-15.4)	396
12-19 years	11-12	**2.65** (2.24-3.13)	**2.50** (2.20-3.00)	**5.00** (4.00-6.30)	**9.10** (7.70-10.5)	**12.2** (10.3-18.0)	388
20 years and older	11-12	**2.46** (2.24-2.71)	**2.30** (2.10-2.60)	**4.60** (4.10-5.30)	**9.00** (7.70-11.4)	**16.9** (11.4-22.2)	1705
Gender							
Males	11-12	**2.81** (2.52-3.14)	**2.60** (2.30-3.10)	**5.40** (4.60-6.20)	**9.80** (8.10-14.3)	**18.8** (10.7-22.9)	1259
Females	11-12	**2.21** (2.03-2.40)	**2.20** (1.90-2.40)	**4.10** (3.70-4.60)	**8.50** (7.70-9.90)	**12.0** (10.8-13.7)	1230
Race/ethnicity							
Mexican Americans	11-12	**2.22** (1.87-2.64)	**2.10** (1.70-2.30)	**3.70** (3.10-4.30)	**7.20** (4.80-11.0)	**17.8** (7.90-28.5)	316
Non-Hispanic blacks	11-12	**3.02** (2.82-3.25)	**2.90** (2.70-3.20)	**6.00** (5.00-7.20)	**10.2** (8.90-12.5)	**17.3** (12.5-21.0)	665
Non-Hispanic whites	11-12	**2.55** (2.31-2.82)	**2.50** (2.10-2.80)	**4.80** (4.10-5.60)	**9.00** (7.70-11.4)	**15.2** (10.3-20.8)	813
All Hispanics	11-12	**2.27** (2.04-2.53)	**2.10** (1.80-2.40)	**3.80** (3.40-4.50)	**7.90** (6.30-10.4)	**16.1** (10.8-21.0)	571
Asians	11-12	**1.56** (1.33-1.83)	**1.40** (1.20-1.50)	**2.90** (2.30-4.10)	**7.30** (5.90-8.50)	**11.2** (8.10-20.0)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiDP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxynonyl) phthalate (MCNP) (creatinine corrected) (2005 – 2010)

Metabolite of Di-isodecyl phthalate (DiDP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**2.66** (2.43-2.91)	**2.48** (2.29-2.71)	**4.48** (4.05-4.85)	**8.67** (7.17-9.71)	**13.2** (10.8-17.5)	2548
	07-08	**2.44** (2.25-2.65)	**2.21** (2.00-2.36)	**4.00** (3.68-4.44)	**8.31** (6.96-9.04)	**12.8** (11.2-15.1)	2604
	09-10	**3.01** (2.74-3.31)	**2.79** (2.48-3.10)	**5.04** (4.47-5.66)	**9.76** (8.41-11.2)	**15.5** (12.8-18.9)	2749
Age group							
6-11 years	05-06	**5.00** (4.45-5.63)	**5.06** (4.18-5.76)	**7.48** (6.70-8.84)	**16.1** (12.5-18.9)	**23.5** (16.1-31.7)	356
	07-08	**3.88** (3.34-4.50)	**3.82** (3.17-4.18)	**6.07** (5.14-7.00)	**11.2** (9.01-13.6)	**18.2** (12.6-27.0)	389
	09-10	**4.49** (4.01-5.03)	**4.33** (3.95-4.82)	**7.30** (6.41-8.54)	**11.2** (9.74-13.6)	**14.9** (12.7-23.1)	415
12-19 years	05-06	**2.37** (2.04-2.75)	**2.18** (1.91-2.52)	**3.64** (2.94-4.55)	**6.26** (5.15-8.70)	**10.7** (7.57-14.1)	702
	07-08	**2.23** (2.07-2.40)	**1.96** (1.83-2.08)	**3.68** (3.08-3.83)	**6.39** (4.88-9.01)	**10.0** (7.26-13.5)	401
	09-10	**2.43** (2.10-2.81)	**2.17** (1.79-2.54)	**3.94** (3.23-4.87)	**7.67** (5.32-11.2)	**12.8** (8.43-14.4)	420
20 years and older	05-06	**2.52** (2.29-2.78)	**2.37** (2.14-2.57)	**4.05** (3.77-4.51)	**7.90** (6.46-9.40)	**12.0** (9.71-16.7)	1490
	07-08	**2.36** (2.15-2.58)	**2.14** (1.91-2.32)	**3.88** (3.44-4.29)	**8.21** (6.67-9.00)	**12.3** (11.0-15.3)	1814
	09-10	**2.97** (2.69-3.29)	**2.72** (2.43-3.03)	**4.93** (4.32-5.62)	**9.68** (7.90-11.6)	**15.6** (11.9-22.5)	1914
Gender							
Males	05-06	**2.53** (2.28-2.82)	**2.36** (2.14-2.56)	**4.38** (3.74-5.04)	**7.41** (6.47-8.88)	**13.0** (9.40-19.6)	1270
	07-08	**2.32** (2.11-2.55)	**2.12** (1.90-2.32)	**3.88** (3.50-4.29)	**7.13** (5.78-9.15)	**11.4** (9.68-15.5)	1294
	09-10	**2.82** (2.55-3.12)	**2.56** (2.28-2.96)	**4.73** (4.19-5.49)	**8.68** (7.21-10.2)	**13.4** (11.2-15.4)	1399
Females	05-06	**2.79** (2.47-3.15)	**2.65** (2.34-2.95)	**4.51** (4.03-5.15)	**9.41** (6.82-11.6)	**13.5** (10.7-19.7)	1278
	07-08	**2.57** (2.33-2.83)	**2.27** (2.03-2.57)	**4.13** (3.78-4.82)	**8.71** (7.41-9.50)	**13.5** (12.0-16.0)	1310
	09-10	**3.20** (2.88-3.57)	**2.98** (2.72-3.28)	**5.40** (4.70-6.23)	**10.6** (8.39-13.8)	**16.9** (12.5-27.3)	1350
Race/ethnicity							
Mexican Americans	05-06	**2.45** (2.13-2.81)	**2.32** (2.14-2.60)	**4.04** (3.64-4.58)	**6.96** (5.73-8.14)	**11.0** (7.89-19.1)	637
	07-08	**2.32** (2.10-2.56)	**2.10** (1.90-2.34)	**4.12** (3.54-4.68)	**6.89** (5.73-7.67)	**9.75** (7.69-11.7)	531
	09-10	**2.33** (2.08-2.62)	**2.12** (1.80-2.66)	**3.80** (3.27-4.58)	**7.02** (5.44-9.66)	**11.3** (8.09-13.0)	566
Non-Hispanic blacks	05-06	**2.24** (1.96-2.55)	**1.97** (1.78-2.37)	**3.60** (3.25-4.24)	**7.82** (6.38-10.4)	**12.1** (10.1-17.4)	678
	07-08	**2.25** (2.05-2.47)	**2.00** (1.88-2.17)	**3.88** (3.50-4.27)	**8.18** (6.25-10.4)	**14.9** (9.31-20.4)	597
	09-10	**2.54** (2.24-2.88)	**2.46** (2.02-2.96)	**4.52** (4.20-5.13)	**8.51** (6.35-10.9)	**11.3** (9.81-16.0)	516
Non-Hispanic whites	05-06	**2.81** (2.51-3.14)	**2.57** (2.33-2.85)	**4.62** (4.10-5.19)	**9.26** (7.00-10.8)	**13.5** (10.3-23.5)	1038
	07-08	**2.53** (2.23-2.86)	**2.26** (1.98-2.57)	**4.11** (3.66-4.70)	**8.51** (6.59-10.2)	**13.3** (10.7-17.6)	1077
	09-10	**3.35** (2.98-3.77)	**3.06** (2.76-3.36)	**5.51** (4.74-6.35)	**10.4** (8.43-13.5)	**15.8** (12.3-24.8)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiDP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxynonyl) phthalate (MCNP) (creatinine corrected) (2011 - 2012)

Metabolite of Di-isodecyl phthalate (DiDP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**2.83** (2.57-3.11)	**2.50** (2.28-2.80)	**4.59** (4.13-5.29)	**9.36** (7.85-11.1)	**14.6** (11.9-16.8)	2487
Age group							
6-11 years	11-12	**3.55** (3.13-4.03)	**3.16** (2.73-3.94)	**5.25** (4.55-6.45)	**9.15** (6.64-14.3)	**14.7** (10.0-16.8)	395
12-19 years	11-12	**2.58** (2.16-3.09)	**2.34** (1.96-3.04)	**4.67** (3.38-6.13)	**7.74** (5.97-11.3)	**12.0** (7.74-15.6)	388
20 years and older	11-12	**2.79** (2.51-3.10)	**2.43** (2.21-2.77)	**4.46** (4.02-5.27)	**9.73** (7.85-11.7)	**14.9** (11.8-17.5)	1704
Gender							
Males	11-12	**2.63** (2.42-2.86)	**2.37** (2.17-2.54)	**4.43** (3.83-4.92)	**8.49** (6.61-10.0)	**12.5** (9.58-15.5)	1258
Females	11-12	**3.03** (2.65-3.46)	**2.70** (2.30-3.21)	**4.82** (4.18-5.80)	**10.7** (8.66-12.1)	**15.6** (12.3-17.6)	1229
Race/ethnicity							
Mexican Americans	11-12	**2.50** (2.21-2.83)	**2.18** (2.02-2.42)	**3.73** (3.00-4.38)	**8.00** (5.46-10.7)	**13.2** (8.49-18.8)	316
Non-Hispanic blacks	11-12	**2.35** (2.19-2.53)	**2.20** (2.06-2.39)	**3.99** (3.56-4.38)	**6.95** (6.17-8.18)	**12.1** (9.30-15.7)	665
Non-Hispanic whites	11-12	**3.09** (2.75-3.47)	**2.75** (2.36-3.25)	**5.05** (4.35-5.89)	**10.4** (8.08-12.3)	**15.3** (11.9-17.6)	811
All Hispanics	11-12	**2.54** (2.37-2.73)	**2.25** (2.06-2.42)	**3.92** (3.54-4.41)	**8.20** (6.72-9.71)	**13.9** (10.0-16.8)	571
Asians	11-12	**2.09** (1.76-2.49)	**1.95** (1.70-2.19)	**3.75** (3.04-4.44)	**6.36** (5.53-7.89)	**9.02** (7.50-17.9)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiDP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP) (1999 – 2010)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**5.39** (<LOD-21.3)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	**1.54** (<LOD-2.00)	2605
	05-06	*	< LOD	< LOD	**1.69** (<LOD-2.00)	**3.54** (2.31-6.16)	2548
	07-08	*	< LOD	< LOD	**1.54** (<LOD-1.69)	**3.08** (2.16-4.16)	2604
	09-10	*	< LOD	**1.80** (1.49-2.13)	**5.62** (4.48-7.28)	**14.6** (10.7-18.3)	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	**9.55** (<LOD-34.7)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	**1.54** (<LOD-2.31)	**2.62** (1.85-4.77)	342
	05-06	*	< LOD	< LOD	**1.69** (<LOD-2.00)	**2.16** (2.00-2.62)	356
	07-08	*	< LOD	< LOD	**1.39** (<LOD-2.00)	**2.16** (1.54-3.85)	389
	09-10	*	< LOD	**1.72** (1.09-2.94)	**5.30** (3.08-8.98)	**13.1** (5.33-21.5)	415
12-19 years	99-00	*	< LOD	< LOD	< LOD	**3.54** (<LOD-31.3)	752
	01-02	*	< LOD	< LOD	< LOD	**1.39** (<LOD-1.69)	742
	03-04	*	< LOD	< LOD	< LOD	**2.16** (<LOD-2.77)	729
	05-06	*	< LOD	< LOD	**2.16** (<LOD-4.31)	**5.39** (2.00-12.2)	702
	07-08	*	< LOD	< LOD	**2.46** (1.39-5.39)	**5.54** (2.46-8.01)	401
	09-10	*	< LOD	**2.20** (1.42-3.96)	**10.7** (4.87-17.1)	**20.6** (14.8-36.1)	420
20 years and older	99-00	*	< LOD	< LOD	< LOD	**4.77** (<LOD-20.3)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	**1.54** (<LOD-2.00)	**3.54** (2.16-6.47)	1490
	07-08	*	< LOD	< LOD	**1.39** (<LOD-1.69)	**2.77** (1.85-3.85)	1814
	09-10	*	< LOD	**1.76** (1.43-2.11)	**5.44** (4.31-6.64)	**12.9** (8.32-17.9)	1914
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**7.55** (<LOD-29.1)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	**1.54** (<LOD-2.77)	1250
	05-06	*	< LOD	< LOD	**2.00** (1.39-2.93)	**4.00** (3.23-6.31)	1270
	07-08	*	< LOD	< LOD	**1.54** (<LOD-2.16)	**3.23** (2.31-4.93)	1294
	09-10	*	< LOD	**2.06** (1.74-2.68)	**7.19** (5.62-10.5)	**17.1** (11.7-27.6)	1399
Females	99-00	*	< LOD	< LOD	< LOD	**3.85** (<LOD-10.5)	1326
	01-02	*	< LOD	< LOD	< LOD	**1.39** (<LOD-1.69)	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	**1.39** (<LOD-1.54)	**2.62** (1.85-4.31)	1278
	07-08	*	< LOD	< LOD	**1.39** (<LOD-1.69)	**2.77** (2.00-3.70)	1310
	09-10	*	< LOD	**1.52** (1.12-1.91)	**4.70** (3.80-5.47)	**12.3** (6.61-16.5)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.23, 1.23, 1.54, 1.23, 1.23, and 0.77 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.54 for survey periods 1999-2008 compared with results previously reported.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP) (1999 – 2010)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**2.31** (<LOD-4.31)	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**1.54** (<LOD-2.16)	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	05-06	*	**< LOD**	**< LOD**	**1.54** (<LOD-2.00)	**4.31** (2.00-8.62)	637
	07-08	*	**< LOD**	**< LOD**	**1.39** (<LOD-2.93)	**3.08** (2.00-3.85)	531
	09-10	*	**< LOD**	**1.52** (1.19-1.91)	**5.11** (3.77-7.67)	**12.9** (6.27-22.2)	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**3.54** (<LOD-21.3)	**10.5** (<LOD-46.5)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**1.54** (<LOD-2.62)	703
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**2.00** (1.54-3.08)	699
	05-06	*	**< LOD**	**< LOD**	**2.00** (1.54-2.77)	**5.70** (3.54-8.62)	678
	07-08	*	**< LOD**	**< LOD**	**1.69** (<LOD-2.31)	**3.70** (2.16-5.70)	597
	09-10	*	**< LOD**	**2.14** (1.79-2.56)	**6.05** (4.48-10.5)	**17.1** (8.32-21.9)	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**5.39** (<LOD-24.6)	912
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1088
	05-06	*	**< LOD**	**< LOD**	**1.54** (<LOD-2.16)	**3.23** (1.85-6.47)	1038
	07-08	*	**< LOD**	**< LOD**	**1.39** (<LOD-2.00)	**2.77** (1.69-4.93)	1077
	09-10	*	**< LOD**	**1.83** (1.40-2.53)	**5.67** (4.59-8.07)	**14.7** (10.3-21.5)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.23, 1.23, 1.54, 1.23, 1.23, and 0.77 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.54 for survey periods 1999-2008 compared with results previously reported

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP) (2011 - 2012)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**.800** (.600-.900)	**2.60** (2.00-3.20)	**8.80** (6.80-12.5)	**18.6** (13.3-28.3)	2489
Age group							
6-11 years	11-12	*	**.700** (<LOD-1.10)	**1.90** (1.50-2.50)	**4.40** (2.50-6.20)	**6.20** (4.40-11.4)	396
12-19 years	11-12	**1.36** (1.12-1.65)	**.900** (.800-1.20)	**2.80** (2.20-4.00)	**13.1** (5.90-23.4)	**24.9** (17.8-90.6)	388
20 years and older	11-12	*	**.700** (.600-.800)	**2.70** (2.00-3.40)	**9.60** (7.30-13.0)	**18.4** (13.1-32.1)	1705
Gender							
Males	11-12	**1.26** (1.12-1.42)	**.900** (.800-1.10)	**3.10** (2.60-3.70)	**9.30** (7.20-12.8)	**20.0** (12.5-39.6)	1259
Females	11-12	*	**.700** (<LOD-.800)	**2.10** (1.70-2.80)	**8.20** (4.50-14.4)	**18.4** (14.9-26.9)	1230
Race/ethnicity							
Mexican Americans	11-12	*	**.700** (<LOD-1.10)	**2.30** (1.50-3.20)	**5.30** (3.70-7.70)	**16.8** (5.60-31.2)	316
Non-Hispanic blacks	11-12	**1.40** (1.19-1.65)	**1.00** (.900-1.20)	**3.20** (2.40-4.30)	**13.1** (7.70-19.5)	**24.1** (15.3-36.8)	665
Non-Hispanic whites	11-12	*	**.700** (<LOD-.900)	**2.60** (1.90-3.40)	**9.20** (6.30-12.6)	**17.5** (13.0-33.5)	813
All Hispanics	11-12	*	**.800** (.600-1.00)	**2.40** (1.80-3.30)	**6.20** (4.40-9.30)	**17.9** (10.4-24.9)	571
Asians	11-12	*	**.700** (<LOD-.800)	**2.30** (1.40-3.60)	**6.50** (5.30-9.80)	**19.1** (7.80-25.9)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP) (creatinine corrected) (1999 – 2010)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**6.61** (<LOD-12.8)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	**4.50** (<LOD-4.90)	2605
	05-06	*	< LOD	< LOD	**3.20** (<LOD-3.82)	**5.16** (3.99-5.67)	2548
	07-08	*	< LOD	< LOD	**3.35** (<LOD-3.96)	**5.05** (4.15-6.22)	2604
	09-10	*	< LOD	**2.16** (1.91-2.41)	**5.40** (4.21-7.00)	**11.8** (9.59-14.2)	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	**9.24** (<LOD-21.9)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	**3.71** (<LOD-4.82)	**5.04** (3.71-7.19)	342
	05-06	*	< LOD	< LOD	**2.37** (<LOD-2.93)	**3.03** (2.54-5.16)	356
	07-08	*	< LOD	< LOD	**3.35** (<LOD-5.33)	**5.33** (3.11-7.26)	389
	09-10	*	< LOD	**2.53** (1.93-3.09)	**6.61** (3.77-9.73)	**10.7** (6.70-21.7)	415
12-19 years	99-00	*	< LOD	< LOD	< LOD	**3.08** (<LOD-11.8)	752
	01-02	*	< LOD	< LOD	< LOD	**3.19** (<LOD-5.13)	742
	03-04	*	< LOD	< LOD	< LOD	**3.03** (<LOD-3.99)	729
	05-06	*	< LOD	< LOD	**2.66** (<LOD-3.59)	**3.99** (2.97-5.28)	702
	07-08	*	< LOD	< LOD	**2.56** (2.10-3.23)	**3.68** (2.90-6.84)	401
	09-10	*	< LOD	**2.14** (1.40-3.40)	**7.58** (4.06-11.2)	**13.2** (10.2-23.4)	420
20 years and older	99-00	*	< LOD	< LOD	< LOD	**7.11** (<LOD-12.4)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	**3.37** (<LOD-4.19)	**5.17** (4.17-6.11)	1490
	07-08	*	< LOD	< LOD	**3.48** (<LOD-4.15)	**5.45** (4.15-6.39)	1814
	09-10	*	< LOD	**2.12** (1.86-2.35)	**5.00** (3.91-6.67)	**11.7** (8.29-14.5)	1914
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**6.53** (<LOD-15.7)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	**3.56** (<LOD-4.54)	1250
	05-06	*	< LOD	< LOD	**2.51** (1.96-3.51)	**3.99** (2.79-5.61)	1270
	07-08	*	< LOD	< LOD	**2.42** (<LOD-2.95)	**3.96** (3.23-5.05)	1294
	09-10	*	< LOD	**1.91** (1.59-2.37)	**5.54** (4.14-7.89)	**12.9** (9.90-18.8)	1399
Females	99-00	*	< LOD	< LOD	< LOD	**6.61** (<LOD-11.8)	1326
	01-02	*	< LOD	< LOD	< LOD	**4.20** (<LOD-4.40)	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	**3.67** (<LOD-4.39)	**5.37** (4.88-6.27)	1278
	07-08	*	< LOD	< LOD	**4.08** (<LOD-4.84)	**5.81** (4.36-7.26)	1310
	09-10	*	< LOD	**2.35** (2.01-2.49)	**5.40** (4.13-7.00)	**10.8** (7.58-14.9)	1350

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.54 for survey periods 1999-2008 compared with results previously reported

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP) (creatinine corrected) (1999 – 2010)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**5.44** (<LOD-7.70)	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**3.70** (<LOD-4.20)	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	05-06	*	**< LOD**	**< LOD**	**2.71** (<LOD-3.73)	**4.88** (3.73-6.27)	637
	07-08	*	**< LOD**	**< LOD**	**2.81** (<LOD-3.23)	**3.96** (3.23-5.13)	531
	09-10	*	**< LOD**	**1.74** (1.42-2.35)	**4.35** (3.10-9.92)	**11.5** (8.42-19.1)	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**3.13** (<LOD-8.18)	**6.61** (<LOD-22.1)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**2.71** (<LOD-3.30)	703
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**3.37** (2.57-3.85)	699
	05-06	*	**< LOD**	**< LOD**	**2.22** (1.83-2.59)	**4.39** (2.83-6.75)	678
	07-08	*	**< LOD**	**< LOD**	**2.49** (<LOD-3.35)	**4.19** (3.11-4.62)	597
	09-10	*	**< LOD**	**1.51** (1.25-1.80)	**4.00** (2.90-5.61)	**8.97** (5.15-15.1)	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**8.39** (<LOD-15.4)	912
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1088
	05-06	*	**< LOD**	**< LOD**	**3.37** (<LOD-3.99)	**4.88** (3.99-5.41)	1038
	07-08	*	**< LOD**	**< LOD**	**3.60** (<LOD-4.15)	**5.45** (3.96-6.96)	1077
	09-10	*	**< LOD**	**2.41** (2.08-2.70)	**6.00** (4.23-8.05)	**12.9** (10.4-16.6)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.54 for survey periods 1999-2008 compared with results previously reported

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP) (creatinine corrected) (2011 - 2012)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**1.08** (.921-1.25)	**2.69** (2.25-3.26)	**7.88** (5.88-11.3)	**17.6** (11.6-26.6)	2487
Age group							
6-11 years	11-12	*	**1.13** (<LOD-1.40)	**2.44** (1.84-2.98)	**4.20** (3.27-7.88)	**7.88** (4.00-15.2)	395
12-19 years	11-12	**1.33** (1.05-1.68)	**1.01** (.818-1.40)	**2.72** (1.94-3.89)	**10.6** (4.63-17.6)	**33.0** (11.8-53.5)	388
20 years and older	11-12	*	**1.09** (.876-1.30)	**2.78** (2.22-3.33)	**8.23** (5.95-11.4)	**18.1** (11.4-33.8)	1704
Gender							
Males	11-12	**1.18** (1.04-1.33)	**.982** (.778-1.16)	**2.50** (2.15-3.06)	**7.88** (5.65-11.4)	**15.6** (10.1-24.1)	1258
Females	11-12	*	**1.21** (<LOD-1.40)	**2.86** (2.18-3.88)	**7.73** (5.20-13.0)	**20.1** (11.4-33.8)	1229
Race/ethnicity							
Mexican Americans	11-12	*	**.942** (<LOD-1.13)	**2.04** (1.65-2.50)	**4.68** (3.19-13.8)	**17.1** (8.39-42.6)	316
Non-Hispanic blacks	11-12	**1.09** (.915-1.29)	**.896** (.750-1.05)	**2.31** (1.73-3.33)	**7.45** (5.19-10.7)	**15.2** (9.60-22.5)	665
Non-Hispanic whites	11-12	*	**1.15** (<LOD-1.38)	**3.06** (2.35-3.60)	**8.23** (5.91-11.9)	**20.1** (11.4-33.8)	811
All Hispanics	11-12	*	**1.02** (.875-1.20)	**2.18** (1.90-2.46)	**6.67** (4.00-9.25)	**14.9** (10.1-29.7)	571
Asians	11-12	*	**1.21** (<LOD-1.49)	**2.70** (2.00-3.50)	**6.75** (4.62-10.1)	**14.9** (8.75-21.5)	352

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxyoctyl) phthalate (MCOP) (2005 – 2010)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**5.39** (4.68-6.22)	**5.10** (4.40-6.00)	**10.9** (9.10-13.1)	**25.5** (19.1-35.4)	**54.4** (32.5-85.2)	2548
	07-08	**6.79** (5.83-7.92)	**6.40** (5.60-7.40)	**14.9** (12.1-18.2)	**34.6** (25.2-43.8)	**63.0** (41.8-80.0)	2604
	09-10	**12.6** (10.4-15.2)	**11.8** (9.26-14.7)	**33.1** (25.8-40.2)	**83.3** (61.2-113)	**160** (117-191)	2749
Age group							
6-11 years	05-06	**8.52** (7.19-10.1)	**8.90** (7.60-9.90)	**15.0** (11.3-19.3)	**26.4** (19.9-37.3)	**40.3** (26.4-61.6)	356
	07-08	**10.8** (9.25-12.6)	**10.7** (9.10-13.1)	**19.8** (15.8-24.5)	**33.8** (26.1-50.3)	**59.9** (33.5-79.5)	389
	09-10	**15.0** (10.8-20.7)	**14.2** (9.15-20.7)	**34.7** (18.6-56.5)	**74.6** (41.6-135)	**120** (74.6-340)	415
12-19 years	05-06	**6.61** (5.42-8.06)	**6.30** (5.20-7.30)	**11.9** (9.60-16.0)	**28.4** (18.2-58.7)	**63.2** (28.4-106)	702
	07-08	**9.25** (7.33-11.7)	**8.10** (6.80-10.3)	**20.8** (15.4-28.7)	**60.5** (29.6-79.4)	**79.4** (49.7-166)	401
	09-10	**16.1** (12.3-20.9)	**14.5** (11.6-17.0)	**39.8** (22.5-61.2)	**96.8** (66.7-191)	**209** (135-263)	420
20 years and older	05-06	**4.96** (4.27-5.76)	**4.50** (3.90-5.20)	**9.70** (8.20-12.3)	**25.1** (18.2-35.7)	**54.4** (30.8-88.5)	1490
	07-08	**6.15** (5.20-7.29)	**5.80** (5.00-6.60)	**13.2** (10.5-16.8)	**32.0** (23.0-41.8)	**61.2** (38.9-80.0)	1814
	09-10	**11.9** (9.89-14.3)	**11.0** (8.58-13.7)	**32.1** (25.8-39.0)	**83.7** (56.0-114)	**158** (109-188)	1914
Gender							
Males	05-06	**6.24** (5.25-7.42)	**5.70** (4.70-6.90)	**12.1** (10.2-15.1)	**30.8** (19.0-58.8)	**66.4** (33.8-122)	1270
	07-08	**7.14** (6.10-8.36)	**6.60** (5.70-7.70)	**15.6** (12.4-19.3)	**35.7** (24.7-43.2)	**61.2** (40.1-89.1)	1294
	09-10	**14.0** (11.6-16.8)	**13.4** (10.5-15.6)	**36.0** (27.5-45.9)	**92.9** (66.1-134)	**168** (111-217)	1399
Females	05-06	**4.69** (4.14-5.30)	**4.50** (4.00-5.20)	**9.30** (8.20-11.1)	**21.5** (17.5-27.0)	**41.7** (28.1-61.7)	1278
	07-08	**6.48** (5.49-7.65)	**6.20** (5.40-7.40)	**14.3** (12.0-17.0)	**32.6** (24.8-47.0)	**64.8** (47.0-73.3)	1310
	09-10	**11.4** (9.17-14.1)	**10.6** (8.05-13.7)	**29.6** (20.8-38.4)	**70.4** (50.1-113)	**146** (85.2-188)	1350
Race/ethnicity							
Mexican Americans	05-06	**5.77** (4.84-6.87)	**5.20** (4.50-5.70)	**9.90** (8.50-12.0)	**23.6** (14.9-49.7)	**54.4** (23.0-185)	637
	07-08	**6.83** (6.23-7.49)	**6.20** (5.60-6.80)	**12.9** (11.3-14.9)	**29.1** (25.2-33.8)	**52.0** (36.8-61.2)	531
	09-10	**9.96** (7.99-12.4)	**8.59** (6.21-12.1)	**20.3** (15.8-32.6)	**59.3** (44.0-69.5)	**86.2** (63.2-136)	566
Non-Hispanic blacks	05-06	**6.08** (5.60-6.61)	**6.00** (5.10-6.70)	**11.4** (10.4-13.0)	**24.5** (20.3-28.1)	**50.0** (32.0-70.3)	678
	07-08	**7.55** (6.21-9.17)	**7.00** (6.00-8.00)	**16.6** (12.0-22.9)	**40.3** (25.5-51.9)	**60.4** (41.8-97.8)	597
	09-10	**12.6** (9.85-16.1)	**11.0** (7.35-16.2)	**34.5** (26.5-42.1)	**82.4** (63.8-109)	**137** (83.3-188)	516
Non-Hispanic whites	05-06	**5.25** (4.40-6.27)	**5.00** (4.10-6.20)	**11.1** (8.60-13.6)	**25.5** (17.7-43.5)	**56.1** (28.1-88.5)	1038
	07-08	**6.81** (5.48-8.46)	**6.40** (5.20-7.90)	**15.1** (11.0-20.8)	**35.7** (23.2-62.0)	**64.7** (39.4-89.0)	1077
	09-10	**13.4** (10.7-16.8)	**12.9** (10.1-16.1)	**34.8** (27.5-43.4)	**88.9** (64.4-136)	**168** (113-220)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.7, 0.7, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxyoctyl) phthalate (MCOP) (2011 - 2012)

Metabolite of Di-isononyl phthalates (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**19.7** (17.4-22.3)	**18.7** (15.6-21.3)	**50.0** (43.0-61.8)	**123** (98.3-160)	**214** (180-275)	2489
Age group							
6-11 years	11-12	**18.3** (15.7-21.4)	**17.0** (14.7-19.8)	**35.2** (30.2-46.4)	**88.2** (63.1-108)	**144** (90.7-249)	396
12-19 years	11-12	**21.7** (17.2-27.3)	**20.7** (16.0-25.8)	**51.4** (35.9-68.0)	**160** (80.4-261)	**289** (174-421)	388
20 years and older	11-12	**19.6** (17.0-22.6)	**18.6** (14.7-21.5)	**51.4** (43.4-66.1)	**127** (103-165)	**199** (178-273)	1705
Gender							
Males	11-12	**22.8** (19.9-26.1)	**20.2** (16.6-22.1)	**59.8** (50.0-67.5)	**155** (120-184)	**255** (184-379)	1259
Females	11-12	**17.1** (14.7-19.9)	**16.3** (13.5-20.4)	**43.3** (35.3-58.6)	**103** (75.4-138)	**180** (119-259)	1230
Race/ethnicity							
Mexican Americans	11-12	**17.1** (14.8-19.9)	**14.4** (11.5-20.5)	**38.1** (33.9-46.6)	**96.7** (70.3-133)	**174** (98.9-251)	316
Non-Hispanic blacks	11-12	**24.1** (21.0-27.5)	**22.4** (19.0-25.1)	**58.2** (45.7-75.9)	**165** (102-220)	**273** (206-306)	665
Non-Hispanic whites	11-12	**20.1** (17.2-23.4)	**19.5** (15.6-21.8)	**52.8** (43.1-68.0)	**123** (94.0-166)	**196** (166-275)	813
All Hispanics	11-12	**18.5** (15.3-22.2)	**15.8** (11.9-21.1)	**42.3** (35.3-55.1)	**104** (77.9-153)	**221** (133-297)	571
Asians	11-12	**12.2** (10.0-14.8)	**11.0** (8.40-13.8)	**36.7** (25.6-47.1)	**81.9** (66.1-127)	**135** (91.9-204)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxyoctyl) phthalate (MCOP) (creatinine corrected) (2005 – 2010)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**5.26** (4.54-6.10)	**4.53** (3.95-5.11)	**9.25** (7.64-11.2)	**24.0** (17.1-30.8)	**40.2** (30.3-55.2)	2548
	07-08	**6.85** (6.05-7.75)	**5.94** (5.19-6.67)	**12.6** (10.8-14.4)	**30.6** (23.4-38.5)	**50.2** (40.0-60.0)	2604
	09-10	**13.1** (11.1-15.5)	**11.6** (9.69-13.8)	**29.3** (23.7-36.2)	**72.3** (55.0-93.8)	**119** (89.1-147)	2749
Age group							
6-11 years	05-06	**9.38** (8.08-10.9)	**8.48** (7.66-10.1)	**14.8** (12.2-18.7)	**30.3** (20.0-38.8)	**40.1** (28.2-57.3)	356
	07-08	**13.3** (11.4-15.5)	**11.6** (9.90-14.2)	**23.1** (16.2-32.5)	**44.2** (27.0-64.1)	**60.3** (44.2-110)	389
	09-10	**19.5** (14.7-25.9)	**18.6** (11.7-26.9)	**35.9** (25.7-56.9)	**87.8** (43.7-132)	**139** (80.1-312)	415
12-19 years	05-06	**4.93** (4.10-5.93)	**4.32** (3.61-4.89)	**7.44** (5.93-11.0)	**19.4** (12.4-31.8)	**34.7** (24.1-58.3)	702
	07-08	**7.20** (5.94-8.73)	**6.28** (4.79-8.08)	**12.6** (10.0-20.7)	**32.7** (22.6-56.9)	**56.9** (31.4-103)	401
	09-10	**12.9** (10.5-15.8)	**11.5** (8.38-15.1)	**26.3** (19.2-37.9)	**74.8** (43.5-120)	**125** (101-167)	420
20 years and older	05-06	**4.97** (4.26-5.81)	**4.17** (3.68-4.77)	**8.58** (7.23-10.6)	**23.4** (15.5-31.8)	**41.1** (29.2-55.9)	1490
	07-08	**6.32** (5.49-7.27)	**5.31** (4.77-6.05)	**11.8** (9.27-13.9)	**27.5** (19.5-36.8)	**47.7** (34.4-60.9)	1814
	09-10	**12.6** (10.7-14.8)	**10.9** (9.42-12.7)	**28.5** (23.3-35.9)	**69.5** (52.5-89.4)	**113** (81.9-153)	1914
Gender							
Males	05-06	**5.01** (4.21-5.97)	**4.29** (3.75-5.03)	**8.44** (7.17-10.9)	**21.6** (15.1-35.4)	**44.6** (25.7-85.9)	1270
	07-08	**6.01** (5.29-6.84)	**5.14** (4.54-6.26)	**11.5** (9.32-13.6)	**24.5** (19.2-31.0)	**43.2** (31.2-54.9)	1294
	09-10	**12.5** (10.6-14.7)	**11.4** (9.29-13.9)	**28.6** (23.5-36.6)	**67.2** (52.0-85.9)	**106** (82.2-138)	1399
Females	05-06	**5.51** (4.75-6.39)	**4.73** (4.23-5.32)	**9.55** (8.26-12.2)	**24.7** (17.3-30.3)	**39.3** (30.3-45.0)	1278
	07-08	**7.76** (6.84-8.81)	**6.52** (5.95-7.39)	**13.7** (11.9-16.5)	**35.3** (26.6-44.2)	**57.7** (43.5-74.4)	1310
	09-10	**13.7** (11.5-16.4)	**11.8** (9.80-14.4)	**29.5** (22.8-37.9)	**75.3** (54.2-110)	**123** (93.8-197)	1350
Race/ethnicity							
Mexican Americans	05-06	**5.19** (4.38-6.14)	**4.50** (3.64-5.29)	**8.04** (7.13-10.1)	**19.5** (12.3-37.7)	**43.6** (20.9-93.4)	637
	07-08	**6.66** (5.97-7.44)	**5.29** (4.69-6.20)	**11.6** (10.4-13.0)	**25.7** (20.9-29.8)	**38.3** (30.8-58.3)	531
	09-10	**9.89** (7.75-12.6)	**8.53** (6.98-10.0)	**20.9** (12.8-28.3)	**51.6** (34.2-72.3)	**89.4** (59.3-125)	566
Non-Hispanic blacks	05-06	**4.28** (3.86-4.74)	**3.67** (3.26-4.09)	**7.60** (6.80-8.81)	**17.1** (13.2-21.5)	**31.8** (22.5-43.7)	678
	07-08	**5.87** (4.82-7.13)	**5.37** (4.16-6.50)	**11.1** (8.68-15.2)	**28.1** (17.7-37.2)	**40.2** (32.0-57.8)	597
	09-10	**9.11** (7.52-11.0)	**7.62** (5.84-10.8)	**19.8** (15.5-26.5)	**47.6** (36.9-57.7)	**77.8** (57.0-104)	516
Non-Hispanic whites	05-06	**5.53** (4.61-6.63)	**4.81** (4.13-5.56)	**10.0** (7.63-13.3)	**25.2** (16.3-34.5)	**39.3** (26.8-59.7)	1038
	07-08	**7.11** (5.91-8.56)	**6.27** (5.09-7.50)	**13.0** (10.4-16.3)	**31.1** (21.3-43.2)	**54.2** (40.2-64.1)	1077
	09-10	**15.1** (12.6-18.1)	**13.5** (11.3-16.4)	**33.6** (27.0-43.5)	**79.2** (60.0-106)	**126** (97.9-186)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxyoctyl) phthalate (MCOP) (creatinine corrected) (2011 - 2012)

Metabolite of Di-isononyl phthalates (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**22.4** (19.4-25.8)	**20.4** (17.0-24.4)	**54.1** (42.0-62.1)	**118** (92.5-144)	**194** (144-239)	2487
Age group							
6-11 years	11-12	**25.9** (22.8-29.6)	**22.1** (18.7-25.8)	**42.3** (32.7-54.2)	**116** (56.9-161)	**161** (117-259)	395
12-19 years	11-12	**21.1** (16.6-26.9)	**16.9** (13.7-20.2)	**45.6** (28.8-63.4)	**120** (73.7-209)	**238** (117-396)	388
20 years and older	11-12	**22.2** (19.1-25.8)	**20.8** (16.7-25.1)	**55.3** (42.0-64.5)	**118** (92.2-144)	**194** (136-250)	1704
Gender							
Males	11-12	**21.3** (18.9-23.9)	**20.0** (16.1-23.2)	**54.2** (45.8-58.8)	**112** (90.3-144)	**189** (136-222)	1258
Females	11-12	**23.5** (19.4-28.5)	**20.8** (16.6-26.2)	**53.7** (38.3-68.5)	**121** (86.8-156)	**194** (135-290)	1229
Race/ethnicity							
Mexican Americans	11-12	**19.3** (16.8-22.2)	**16.3** (12.8-20.7)	**35.7** (26.8-55.5)	**81.9** (70.6-115)	**136** (81.1-384)	316
Non-Hispanic blacks	11-12	**18.7** (16.5-21.3)	**16.1** (14.1-19.6)	**40.0** (32.6-51.6)	**102** (76.4-134)	**154** (132-201)	665
Non-Hispanic whites	11-12	**24.3** (20.4-29.0)	**21.9** (18.1-27.5)	**58.8** (48.3-71.3)	**127** (101-161)	**203** (146-284)	811
All Hispanics	11-12	**20.7** (18.0-23.7)	**18.3** (15.5-21.7)	**38.7** (31.2-53.0)	**90.7** (79.3-117)	**163** (121-276)	571
Asians	11-12	**16.3** (13.7-19.4)	**16.5** (11.5-22.3)	**37.5** (31.5-51.3)	**71.8** (58.5-110)	**121** (77.5-172)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP) (2001 – 2010)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.15** (.985-1.34)	**1.50** (1.30-1.80)	**3.30** (2.90-3.70)	**6.00** (5.10-7.50)	**9.80** (8.00-12.5)	2782
	03-04	*	**1.30** (<LOD-1.70)	**3.90** (3.00-4.90)	**9.70** (7.70-12.2)	**16.3** (12.0-20.4)	2605
	05-06	*	**< LOD**	**2.50** (1.90-3.40)	**7.40** (6.10-8.60)	**12.4** (10.8-14.7)	2548
	07-08	*	**< LOD**	**2.20** (1.80-2.70)	**6.50** (4.70-8.30)	**11.3** (8.40-16.3)	2604
	09-10	*	**.940** (.670-1.21)	**2.89** (2.51-3.28)	**6.72** (5.76-8.16)	**12.0** (9.29-15.3)	2749
Age group							
6-11 years	01-02	**1.45** (1.13-1.87)	**1.90** (1.40-2.80)	**4.00** (3.40-4.90)	**7.20** (6.00-8.00)	**11.8** (7.60-20.8)	393
	03-04	**2.10** (1.67-2.63)	**1.70** (1.20-2.40)	**4.30** (2.80-6.40)	**9.50** (6.40-18.8)	**18.8** (9.40-33.4)	342
	05-06	*	**< LOD**	**4.00** (3.30-4.80)	**10.6** (7.40-13.4)	**15.4** (10.6-30.6)	356
	07-08	*	**1.20** (<LOD-1.60)	**3.70** (3.00-5.30)	**8.00** (6.50-8.70)	**12.1** (8.30-35.8)	389
	09-10	**2.13** (1.83-2.47)	**2.36** (1.72-2.92)	**4.83** (3.85-5.61)	**10.8** (8.59-16.7)	**22.3** (11.4-25.8)	415
12-19 years	01-02	**1.59** (1.28-1.96)	**2.10** (1.80-2.50)	**3.90** (3.30-4.70)	**8.50** (5.30-10.5)	**13.0** (9.60-17.8)	742
	03-04	*	**1.50** (1.00-2.20)	**4.40** (3.00-7.00)	**13.3** (7.40-20.9)	**21.8** (17.8-31.5)	729
	05-06	*	**< LOD**	**3.70** (2.70-4.60)	**8.60** (7.00-9.50)	**12.4** (9.30-20.7)	702
	07-08	*	**< LOD**	**2.30** (1.70-3.20)	**6.70** (4.20-8.90)	**12.0** (7.90-17.4)	401
	09-10	**1.45** (1.12-1.89)	**1.37** (.870-1.98)	**3.33** (2.76-4.53)	**7.68** (5.27-11.7)	**12.0** (7.33-19.6)	420
20 years and older	01-02	**1.06** (.904-1.25)	**1.40** (1.10-1.60)	**3.10** (2.50-3.50)	**5.60** (4.60-7.10)	**9.20** (7.40-12.3)	1647
	03-04	*	**1.20** (<LOD-1.50)	**3.80** (2.80-4.90)	**9.30** (7.10-11.8)	**14.3** (10.8-19.9)	1534
	05-06	*	**< LOD**	**2.20** (1.60-2.80)	**6.90** (5.30-8.40)	**11.9** (9.50-14.7)	1490
	07-08	*	**< LOD**	**2.00** (1.60-2.50)	**6.00** (4.20-8.30)	**11.1** (8.10-17.3)	1814
	09-10	*	**.750** (<LOD-1.02)	**2.59** (2.19-2.90)	**6.30** (5.22-7.60)	**10.5** (8.49-14.2)	1914
Gender							
Males	01-02	**1.17** (.962-1.43)	**1.50** (1.30-1.90)	**3.30** (2.90-4.00)	**5.90** (4.80-7.90)	**9.20** (7.10-13.5)	1371
	03-04	*	**1.30** (1.00-1.80)	**4.00** (3.20-5.20)	**10.0** (7.30-13.5)	**17.7** (11.8-20.4)	1250
	05-06	*	**< LOD**	**2.40** (1.80-3.50)	**7.40** (5.70-9.20)	**13.4** (11.0-15.7)	1270
	07-08	*	**< LOD**	**2.40** (1.80-3.20)	**6.90** (4.70-8.70)	**10.3** (8.20-17.2)	1294
	09-10	*	**1.04** (.730-1.40)	**2.92** (2.60-3.47)	**6.53** (5.38-8.66)	**11.4** (8.86-13.9)	1399
Females	01-02	**1.13** (.973-1.31)	**1.40** (1.10-1.70)	**3.30** (2.80-3.70)	**6.40** (5.00-7.80)	**10.3** (8.20-16.2)	1411
	03-04	*	**1.20** (<LOD-1.60)	**3.60** (2.80-4.70)	**9.50** (7.70-12.2)	**15.3** (11.7-22.9)	1355
	05-06	*	**< LOD**	**2.60** (1.80-3.40)	**7.40** (5.10-9.30)	**12.0** (9.30-16.0)	1278
	07-08	*	**< LOD**	**2.10** (1.70-2.50)	**6.20** (4.30-8.20)	**12.0** (7.90-16.1)	1310
	09-10	*	**.840** (.600-1.09)	**2.81** (2.30-3.25)	**6.81** (5.49-8.27)	**13.5** (8.91-16.8)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 0.2, 1.0, 1.1,1.1, and 0.5 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP) (2001 – 2010)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**1.21** (1.02-1.45)	**1.60** (1.30-1.70)	**3.30** (2.70-4.00)	**5.60** (4.70-7.30)	**8.60** (6.40-15.2)	677
	03-04	*	**1.40** (1.10-1.80)	**4.00** (2.50-6.30)	**9.60** (7.30-13.4)	**15.0** (11.4-18.8)	652
	05-06	*	**< LOD**	**3.10** (2.20-4.30)	**7.30** (5.90-9.40)	**11.3** (8.50-18.0)	637
	07-08	*	**< LOD**	**2.50** (1.30-3.70)	**6.40** (4.20-11.1)	**12.1** (6.80-16.3)	531
	09-10	**1.36** (1.22-1.51)	**1.26** (.970-1.53)	**3.67** (2.97-4.16)	**8.30** (6.51-9.24)	**12.0** (9.36-18.2)	566
Non-Hispanic blacks	01-02	**1.64** (1.37-1.98)	**2.10** (1.70-2.70)	**4.40** (3.60-5.10)	**8.30** (6.20-10.1)	**11.0** (9.50-13.4)	703
	03-04	**2.16** (1.64-2.84)	**1.70** (1.00-2.80)	**5.10** (3.70-7.00)	**11.4** (7.30-17.3)	**17.8** (10.2-39.4)	699
	05-06	*	**< LOD**	**3.70** (2.40-4.70)	**8.20** (6.10-10.6)	**13.0** (10.6-15.8)	678
	07-08	*	**< LOD**	**2.40** (1.50-3.40)	**6.10** (4.10-8.80)	**10.6** (6.70-16.4)	597
	09-10	**1.71** (1.32-2.21)	**1.89** (1.33-2.66)	**4.11** (3.38-5.12)	**7.87** (5.90-12.5)	**14.2** (8.47-17.0)	516
Non-Hispanic whites	01-02	**1.08** (.906-1.29)	**1.40** (1.10-1.70)	**3.20** (2.50-3.60)	**5.60** (4.70-6.70)	**9.70** (7.10-14.0)	1216
	03-04	*	**1.20** (<LOD-1.60)	**3.60** (2.80-4.80)	**9.70** (7.50-12.2)	**16.5** (12.0-20.4)	1088
	05-06	*	**< LOD**	**2.30** (1.70-2.80)	**7.40** (5.50-8.80)	**12.5** (10.4-15.0)	1038
	07-08	*	**< LOD**	**2.10** (1.70-2.60)	**6.80** (4.30-8.50)	**11.2** (8.00-18.7)	1077
	09-10	*	**.690** (<LOD-.930)	**2.37** (1.95-2.85)	**6.17** (5.23-8.04)	**12.3** (8.97-15.9)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 0.2, 1.0, 1.1,1.1, and 0.5 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP) (2011 - 2012)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**1.00** (.800-1.20)	**3.00** (2.60-3.50)	**7.00** (6.30-8.10)	**11.8** (10.3-14.8)	2489
Age group							
6-11 years	11-12	**2.33** (1.78-3.04)	**2.20** (1.50-3.30)	**6.40** (5.70-7.70)	**15.6** (9.60-24.1)	**27.7** (14.8-157)	396
12-19 years	11-12	**1.41** (1.09-1.81)	**1.10** (.800-1.70)	**3.80** (2.20-6.00)	**9.90** (5.90-14.0)	**14.8** (10.4-28.4)	388
20 years and older	11-12	*	**.800** (.600-1.10)	**2.60** (2.30-2.90)	**6.10** (4.90-6.90)	**9.80** (8.60-11.7)	1705
Gender							
Males	11-12	**1.34** (1.16-1.55)	**1.20** (.900-1.60)	**3.40** (2.80-4.10)	**8.50** (6.90-9.10)	**12.9** (10.1-18.6)	1259
Females	11-12	*	**.800** (.600-.900)	**2.50** (2.20-2.90)	**6.30** (5.00-7.30)	**10.5** (8.80-13.6)	1230
Race/ethnicity							
Mexican Americans	11-12	**1.39** (1.10-1.76)	**1.40** (1.00-1.80)	**3.80** (2.50-5.40)	**6.90** (5.00-9.40)	**9.60** (6.90-14.5)	316
Non-Hispanic blacks	11-12	**1.51** (1.30-1.77)	**1.40** (1.10-1.60)	**4.30** (3.10-5.20)	**8.90** (6.80-13.0)	**16.6** (9.90-24.8)	665
Non-Hispanic whites	11-12	*	**.700** (<LOD-1.10)	**2.50** (2.00-3.10)	**6.30** (4.80-8.20)	**10.7** (8.90-16.0)	813
All Hispanics	11-12	**1.54** (1.27-1.87)	**1.50** (1.20-1.90)	**4.00** (2.90-5.70)	**8.00** (5.90-10.7)	**11.4** (9.40-14.8)	571
Asians	11-12	**1.33** (1.13-1.57)	**1.20** (.800-1.60)	**3.50** (2.90-4.20)	**7.50** (5.20-10.6)	**14.1** (9.00-20.1)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP) (creatinine corrected) (2001 – 2010)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.08** (.936-1.25)	**1.33** (1.13-1.55)	**2.62** (2.36-2.97)	**5.00** (3.97-6.02)	**8.00** (6.07-11.0)	2782
	03-04	*	**1.53** (<LOD-1.79)	**3.45** (2.76-4.37)	**7.95** (5.83-11.8)	**13.5** (11.3-18.1)	2605
	05-06	*	**< LOD**	**2.85** (2.52-3.25)	**6.53** (5.49-7.67)	**12.2** (9.74-14.3)	2548
	07-08	*	**< LOD**	**2.79** (2.31-3.25)	**5.68** (4.77-7.36)	**10.8** (8.00-13.6)	2604
	09-10	*	**1.18** (1.03-1.38)	**2.56** (2.29-2.92)	**5.55** (4.81-6.54)	**10.6** (7.70-13.1)	2749
Age group							
6-11 years	01-02	**1.65** (1.28-2.14)	**2.32** (1.72-2.86)	**3.97** (3.27-4.71)	**7.20** (5.99-9.41)	**13.2** (7.60-22.5)	393
	03-04	**2.22** (1.75-2.81)	**1.88** (1.49-2.60)	**4.96** (2.81-6.49)	**9.67** (6.15-14.6)	**16.2** (12.1-34.5)	342
	05-06	*	**< LOD**	**4.59** (3.09-6.35)	**11.0** (8.07-15.0)	**18.6** (10.4-21.9)	356
	07-08	*	**2.05** (<LOD-2.33)	**4.56** (3.85-5.36)	**9.06** (6.63-11.4)	**13.6** (10.4-36.0)	389
	09-10	**2.77** (2.44-3.15)	**2.85** (2.46-3.29)	**5.24** (4.34-6.18)	**14.7** (9.87-16.6)	**20.5** (14.7-27.7)	415
12-19 years	01-02	**1.23** (1.01-1.48)	**1.51** (1.32-1.82)	**2.84** (2.52-3.33)	**5.36** (3.68-6.39)	**7.27** (5.64-11.4)	742
	03-04	*	**1.34** (1.12-1.73)	**3.19** (2.26-4.43)	**7.84** (4.95-12.1)	**13.3** (9.49-19.1)	729
	05-06	*	**< LOD**	**2.80** (2.15-3.55)	**5.65** (4.33-6.52)	**12.4** (6.45-18.9)	702
	07-08	*	**< LOD**	**2.00** (1.63-2.63)	**4.32** (3.10-6.05)	**7.25** (4.77-10.8)	401
	09-10	**1.17** (.907-1.51)	**1.18** (.930-1.49)	**2.24** (1.81-2.62)	**4.17** (3.09-6.47)	**7.33** (4.56-15.9)	420
20 years and older	01-02	**1.00** (.868-1.16)	**1.21** (1.05-1.40)	**2.44** (2.14-2.68)	**4.53** (3.49-6.02)	**7.72** (5.52-11.4)	1647
	03-04	*	**1.52** (<LOD-1.79)	**3.39** (2.69-4.31)	**7.69** (5.40-11.8)	**13.3** (10.1-18.9)	1534
	05-06	*	**< LOD**	**2.76** (2.44-3.12)	**6.09** (5.00-7.75)	**11.2** (9.17-13.4)	1490
	07-08	*	**< LOD**	**2.75** (2.26-3.25)	**5.58** (4.33-7.59)	**10.4** (7.09-14.8)	1814
	09-10	*	**1.09** (<LOD-1.23)	**2.34** (2.02-2.69)	**5.16** (4.25-6.39)	**9.53** (7.07-12.1)	1914
Gender							
Males	01-02	**.954** (.794-1.15)	**1.17** (1.02-1.40)	**2.37** (2.03-2.75)	**4.18** (3.45-5.64)	**6.42** (4.94-9.59)	1371
	03-04	*	**1.35** (1.15-1.52)	**2.95** (2.26-4.09)	**7.11** (5.00-10.2)	**11.8** (9.05-13.3)	1250
	05-06	*	**< LOD**	**2.19** (1.89-2.50)	**5.03** (4.09-6.45)	**10.2** (7.75-13.4)	1270
	07-08	*	**< LOD**	**2.33** (1.92-2.88)	**4.88** (3.85-7.25)	**8.56** (6.25-13.8)	1294
	09-10	*	**1.02** (.850-1.21)	**2.49** (2.00-2.86)	**5.23** (4.25-6.84)	**9.51** (7.20-12.4)	1399
Females	01-02	**1.21** (1.06-1.38)	**1.45** (1.23-1.82)	**2.87** (2.58-3.06)	**5.56** (4.55-7.14)	**10.0** (7.20-15.3)	1411
	03-04	*	**1.83** (<LOD-2.10)	**3.87** (3.04-4.96)	**9.41** (6.41-13.6)	**16.5** (12.5-23.5)	1355
	05-06	*	**< LOD**	**3.47** (3.00-4.11)	**7.67** (6.00-9.75)	**13.2** (9.75-18.7)	1278
	07-08	*	**< LOD**	**3.12** (2.72-3.71)	**6.50** (5.20-8.67)	**11.7** (8.56-14.8)	1310
	09-10	*	**1.35** (1.16-1.57)	**2.76** (2.34-3.18)	**5.77** (4.94-7.22)	**11.3** (8.29-15.5)	1350

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP) (creatinine corrected) (2001 – 2010)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**1.14** (.975-1.34)	**1.48** (1.30-1.63)	**2.50** (2.20-2.94)	**4.19** (3.77-5.76)	**8.47** (5.58-12.5)	677
	03-04	*	**1.36** (1.15-1.71)	**3.56** (2.45-4.90)	**7.53** (5.62-9.64)	**12.5** (9.44-16.9)	652
	05-06	*	**< LOD**	**2.86** (2.07-3.67)	**6.48** (4.21-8.24)	**11.5** (6.94-21.7)	637
	07-08	*	**< LOD**	**2.59** (2.06-3.39)	**5.65** (3.60-8.13)	**9.40** (6.06-13.9)	531
	09-10	**1.35** (1.19-1.53)	**1.37** (1.13-1.67)	**3.13** (2.61-3.57)	**6.18** (5.33-8.40)	**10.7** (8.33-15.2)	566
Non-Hispanic blacks	01-02	**1.15** (.949-1.40)	**1.39** (1.29-1.67)	**2.70** (2.36-2.95)	**4.87** (4.21-5.93)	**8.09** (5.86-11.0)	703
	03-04	**1.53** (1.21-1.94)	**1.40** (1.07-1.75)	**3.14** (2.26-4.37)	**7.50** (4.29-14.6)	**13.7** (7.70-20.7)	699
	05-06	*	**< LOD**	**2.59** (1.87-3.28)	**5.20** (4.53-6.29)	**8.50** (6.79-10.3)	678
	07-08	*	**< LOD**	**2.10** (1.69-2.44)	**4.22** (2.94-5.74)	**7.36** (4.88-8.79)	597
	09-10	**1.24** (.983-1.56)	**1.35** (1.08-1.58)	**2.69** (2.22-3.23)	**4.94** (4.03-6.54)	**8.18** (5.74-15.5)	516
Non-Hispanic whites	01-02	**1.07** (.914-1.26)	**1.30** (1.05-1.58)	**2.62** (2.32-2.99)	**5.22** (3.68-6.82)	**8.26** (6.07-12.6)	1216
	03-04	*	**1.56** (<LOD-1.89)	**3.50** (2.71-4.67)	**8.10** (6.00-11.9)	**13.6** (11.3-18.9)	1088
	05-06	*	**< LOD**	**2.98** (2.60-3.39)	**7.19** (5.58-9.51)	**13.4** (10.4-16.6)	1038
	07-08	*	**< LOD**	**2.89** (2.26-3.67)	**6.01** (4.63-8.57)	**11.7** (7.47-15.6)	1077
	09-10	*	**1.13** (<LOD-1.29)	**2.48** (2.06-2.80)	**5.38** (4.44-6.76)	**10.9** (7.68-13.8)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP) (creatinine corrected) (2011 - 2012)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**1.32** (1.16-1.49)	**2.84** (2.52-3.24)	**6.13** (5.42-7.43)	**11.0** (9.44-12.9)	2487
Age group							
6-11 years	11-12	**3.31** (2.57-4.25)	**2.97** (2.14-3.89)	**7.73** (5.56-8.53)	**17.3** (12.4-24.2)	**30.2** (17.3-171)	395
12-19 years	11-12	**1.37** (1.12-1.68)	**1.16** (.959-1.46)	**2.86** (1.88-4.29)	**7.68** (4.95-10.0)	**12.2** (7.68-24.6)	388
20 years and older	11-12	*	**1.26** (1.05-1.40)	**2.57** (2.33-2.82)	**5.29** (4.43-5.93)	**9.31** (7.26-10.2)	1704
Gender							
Males	11-12	**1.25** (1.09-1.44)	**1.23** (.957-1.49)	**2.74** (2.35-3.16)	**5.88** (5.08-7.73)	**10.0** (8.33-12.9)	1258
Females	11-12	*	**1.38** (1.23-1.52)	**2.92** (2.57-3.29)	**6.17** (5.44-8.08)	**12.2** (8.98-15.4)	1229
Race/ethnicity							
Mexican Americans	11-12	**1.57** (1.19-2.06)	**1.57** (1.06-2.14)	**3.44** (2.44-5.26)	**7.26** (4.28-12.2)	**11.8** (7.39-22.4)	316
Non-Hispanic blacks	11-12	**1.18** (1.01-1.38)	**1.20** (.955-1.45)	**2.64** (2.19-3.33)	**6.50** (4.30-9.78)	**11.1** (6.93-18.0)	665
Non-Hispanic whites	11-12	*	**1.23** (<LOD-1.45)	**2.52** (2.13-3.04)	**5.75** (4.69-6.54)	**10.0** (8.08-12.9)	811
All Hispanics	11-12	**1.73** (1.44-2.08)	**1.79** (1.48-2.14)	**3.55** (2.82-4.89)	**7.73** (5.54-10.9)	**12.7** (8.51-19.8)	571
Asians	11-12	**1.79** (1.52-2.10)	**1.75** (1.50-2.07)	**3.91** (3.49-4.37)	**8.75** (6.61-10.3)	**11.5** (10.0-15.0)	352

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP) (2001 – 2010)

Metabolite of Di-n-octyl phthalate (DOP) and of several high molecular weight phthalates

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.75** (2.49-3.04)	**3.10** (2.80-3.30)	**5.70** (5.10-6.40)	**10.0** (8.90-11.3)	**14.6** (12.7-17.5)	2782
	03-04	**2.91** (2.79-3.04)	**3.10** (3.00-3.30)	**5.70** (5.20-6.10)	**10.2** (9.20-11.8)	**15.3** (13.8-16.2)	2605
	05-06	**2.05** (1.87-2.26)	**2.10** (1.90-2.40)	**4.40** (4.00-4.80)	**8.90** (7.60-10.1)	**13.1** (10.6-17.4)	2548
	07-08	**2.76** (2.52-3.04)	**2.70** (2.50-3.00)	**5.80** (5.20-6.50)	**11.1** (9.70-13.1)	**18.1** (15.4-22.3)	2604
	09-10	**3.02** (2.58-3.53)	**3.10** (2.57-3.65)	**6.44** (5.44-7.70)	**13.4** (11.4-16.5)	**22.3** (19.5-26.2)	2749
Age group							
6-11 years	01-02	**6.11** (5.46-6.84)	**6.70** (5.40-7.50)	**11.8** (10.2-13.3)	**20.1** (17.8-23.1)	**24.7** (22.2-31.6)	393
	03-04	**6.86** (5.80-8.11)	**7.10** (6.00-8.90)	**12.7** (10.4-16.4)	**22.0** (17.2-27.7)	**29.2** (22.3-36.6)	342
	05-06	**4.82** (4.09-5.68)	**4.90** (4.30-5.90)	**8.50** (6.70-10.4)	**13.1** (10.3-17.9)	**17.9** (12.6-34.5)	356
	07-08	**6.01** (4.80-7.53)	**6.40** (5.10-8.00)	**11.3** (8.40-15.9)	**20.3** (13.2-27.3)	**23.9** (19.1-34.1)	389
	09-10	**4.54** (3.74-5.52)	**4.86** (3.71-6.49)	**9.08** (7.14-11.2)	**14.4** (10.8-20.3)	**20.3** (14.3-51.9)	415
12-19 years	01-02	**3.71** (3.18-4.33)	**4.00** (3.40-4.70)	**7.10** (6.10-8.10)	**11.5** (9.50-12.7)	**14.1** (11.8-19.0)	742
	03-04	**3.72** (3.33-4.15)	**4.10** (3.50-4.60)	**7.20** (5.80-8.40)	**11.0** (9.50-13.6)	**15.4** (13.4-17.9)	729
	05-06	**2.96** (2.52-3.46)	**3.10** (2.50-3.60)	**5.90** (4.80-7.30)	**11.8** (9.10-14.5)	**17.0** (12.7-21.5)	702
	07-08	**3.81** (3.15-4.61)	**4.00** (3.20-4.70)	**8.20** (6.90-9.40)	**13.3** (11.1-17.1)	**24.1** (13.8-25.6)	401
	09-10	**3.65** (2.88-4.64)	**3.74** (2.90-4.74)	**7.16** (5.48-9.32)	**15.9** (10.8-25.8)	**32.3** (20.9-54.3)	420
20 years and older	01-02	**2.37** (2.11-2.66)	**2.60** (2.20-3.00)	**4.80** (4.30-5.40)	**8.10** (7.20-9.50)	**12.0** (10.1-14.2)	1647
	03-04	**2.53** (2.41-2.66)	**2.80** (2.60-2.90)	**4.90** (4.50-5.20)	**8.10** (7.50-8.90)	**13.2** (10.8-14.3)	1534
	05-06	**1.76** (1.60-1.93)	**1.70** (1.60-2.00)	**3.60** (3.20-4.10)	**7.10** (6.10-8.40)	**11.3** (9.60-13.6)	1490
	07-08	**2.41** (2.18-2.67)	**2.50** (2.20-2.60)	**5.00** (4.60-5.50)	**9.60** (8.00-11.1)	**15.6** (12.9-19.9)	1814
	09-10	**2.80** (2.40-3.28)	**2.88** (2.42-3.39)	**6.00** (5.04-7.15)	**13.1** (10.8-16.4)	**21.8** (18.7-27.9)	1914
Gender							
Males	01-02	**2.89** (2.64-3.17)	**3.10** (2.80-3.40)	**5.70** (5.00-6.80)	**9.90** (8.70-12.0)	**14.2** (12.4-18.1)	1371
	03-04	**3.25** (3.01-3.52)	**3.30** (3.00-3.60)	**6.00** (5.60-6.80)	**11.8** (10.1-13.6)	**16.0** (14.2-20.0)	1250
	05-06	**2.32** (2.11-2.54)	**2.40** (2.00-2.70)	**4.70** (4.30-5.20)	**9.60** (7.90-11.8)	**14.5** (11.5-22.3)	1270
	07-08	**3.02** (2.70-3.39)	**2.90** (2.60-3.30)	**5.80** (5.10-6.60)	**12.3** (10.1-15.3)	**21.3** (16.7-28.5)	1294
	09-10	**3.37** (2.86-3.96)	**3.42** (2.91-4.04)	**7.09** (6.04-8.32)	**15.5** (12.9-18.7)	**23.6** (19.9-33.0)	1399
Females	01-02	**2.62** (2.29-2.99)	**3.00** (2.50-3.30)	**5.70** (5.00-6.30)	**10.0** (8.50-11.5)	**14.7** (11.2-20.3)	1411
	03-04	**2.63** (2.44-2.83)	**3.00** (2.60-3.20)	**5.20** (4.70-5.80)	**9.20** (8.20-10.3)	**13.4** (11.0-16.2)	1355
	05-06	**1.83** (1.59-2.10)	**1.80** (1.60-2.10)	**4.00** (3.30-4.60)	**8.00** (6.60-9.50)	**12.1** (9.50-14.7)	1278
	07-08	**2.54** (2.30-2.79)	**2.60** (2.30-3.00)	**5.90** (5.00-6.80)	**10.5** (9.10-12.3)	**15.4** (13.3-21.5)	1310
	09-10	**2.72** (2.29-3.22)	**2.79** (2.25-3.40)	**5.78** (4.67-7.20)	**12.6** (9.86-15.9)	**20.7** (15.9-29.7)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 0.4, 0.2, 0.2,0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP) (2001 – 2010)

Metabolite of Di-n-octyl phthalate (DOP) and of several high molecular weight phthalates

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**2.67** (2.26-3.16)	**3.00** (2.30-3.50)	**5.30** (4.40-5.90)	**9.20** (7.30-12.4)	**13.6** (10.4-18.7)	677
	03-04	**3.08** (2.86-3.32)	**3.10** (2.80-3.40)	**5.50** (4.80-6.10)	**9.90** (7.90-12.6)	**13.7** (11.5-19.8)	652
	05-06	**2.24** (1.71-2.94)	**2.20** (1.60-3.10)	**4.50** (3.30-6.50)	**9.40** (6.50-13.1)	**14.1** (9.90-25.4)	637
	07-08	**2.66** (2.37-3.00)	**2.70** (2.40-3.20)	**5.00** (4.30-5.70)	**8.80** (7.60-11.2)	**14.5** (11.5-17.8)	531
	09-10	**2.31** (1.95-2.74)	**2.32** (1.92-2.93)	**5.11** (4.44-5.58)	**8.95** (7.39-11.3)	**14.8** (11.1-23.2)	566
Non-Hispanic blacks	01-02	**3.09** (2.81-3.40)	**3.30** (2.90-3.60)	**6.30** (5.50-6.50)	**10.9** (9.10-13.0)	**15.1** (13.5-22.4)	703
	03-04	**3.30** (3.01-3.62)	**3.20** (2.90-3.60)	**6.10** (5.50-6.90)	**11.6** (9.30-13.4)	**20.1** (13.6-25.5)	699
	05-06	**2.28** (2.03-2.57)	**2.40** (2.10-2.80)	**4.50** (3.80-5.60)	**8.70** (7.10-10.3)	**13.3** (10.4-16.5)	678
	07-08	**2.94** (2.50-3.44)	**2.90** (2.50-3.40)	**5.80** (4.90-6.80)	**12.2** (8.50-17.1)	**21.1** (13.7-42.4)	597
	09-10	**3.38** (2.66-4.31)	**3.35** (2.49-4.56)	**6.92** (5.86-8.97)	**13.6** (10.2-21.0)	**22.9** (17.9-28.7)	516
Non-Hispanic whites	01-02	**2.72** (2.40-3.08)	**3.00** (2.60-3.30)	**5.80** (4.80-6.80)	**10.3** (8.90-11.9)	**15.8** (12.6-19.5)	1216
	03-04	**2.87** (2.73-3.02)	**3.10** (2.90-3.30)	**5.60** (5.00-6.00)	**10.1** (9.10-12.0)	**15.2** (13.4-16.1)	1088
	05-06	**1.97** (1.81-2.15)	**2.00** (1.80-2.20)	**4.20** (3.80-4.60)	**8.70** (6.80-10.3)	**13.1** (10.0-17.5)	1038
	07-08	**2.84** (2.51-3.21)	**2.90** (2.50-3.40)	**6.10** (5.30-7.00)	**11.4** (9.70-14.0)	**18.1** (14.0-24.1)	1077
	09-10	**3.17** (2.65-3.79)	**3.16** (2.60-3.87)	**6.86** (5.72-8.32)	**14.5** (12.6-17.8)	**23.6** (18.9-35.7)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 0.4, 0.2, 0.2,0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP) (2011 - 2012)

Metabolite of Di-n-octyl phthalate (DOP) and of several high molecular weight phthalates

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**3.01** (2.59-3.50)	**2.70** (2.40-3.10)	**6.60** (5.60-7.90)	**16.9** (13.1-23.1)	**34.4** (21.3-51.8)	2489
Age group							
6-11 years	11-12	**3.38** (2.87-3.97)	**3.20** (2.70-4.10)	**6.80** (5.50-8.50)	**11.0** (9.40-14.1)	**20.7** (13.7-34.2)	396
12-19 years	11-12	**3.26** (2.59-4.12)	**3.00** (2.20-4.10)	**6.80** (5.80-9.90)	**22.2** (13.1-38.4)	**45.0** (24.6-58.9)	388
20 years and older	11-12	**2.94** (2.46-3.50)	**2.60** (2.30-3.00)	**6.50** (5.40-7.70)	**16.9** (12.8-23.5)	**34.4** (19.8-56.3)	1705
Gender							
Males	11-12	**3.52** (2.94-4.22)	**2.80** (2.50-3.50)	**7.30** (5.90-10.0)	**18.7** (13.0-33.2)	**48.0** (22.1-106)	1259
Females	11-12	**2.58** (2.24-2.97)	**2.50** (2.20-2.80)	**6.00** (4.80-7.00)	**15.5** (11.2-19.8)	**27.8** (17.7-40.2)	1230
Race/ethnicity							
Mexican Americans	11-12	**2.58** (2.12-3.13)	**2.40** (2.10-2.80)	**4.50** (3.60-6.00)	**12.2** (6.60-22.2)	**22.2** (12.2-50.7)	316
Non-Hispanic blacks	11-12	**3.55** (3.13-4.02)	**3.00** (2.70-3.30)	**6.80** (5.60-8.10)	**19.7** (13.4-25.0)	**30.9** (25.0-39.8)	665
Non-Hispanic whites	11-12	**3.03** (2.54-3.62)	**2.80** (2.30-3.30)	**6.70** (5.50-8.80)	**16.9** (12.8-24.4)	**37.2** (18.3-51.8)	813
All Hispanics	11-12	**2.79** (2.19-3.56)	**2.40** (2.10-2.70)	**5.70** (4.20-7.80)	**16.3** (9.00-33.7)	**35.1** (14.9-115)	571
Asians	11-12	**2.24** (1.66-3.01)	**2.00** (1.50-2.60)	**4.60** (3.60-6.90)	**11.5** (7.70-25.7)	**33.2** (11.5-74.3)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP) (creatinine corrected) (2001 – 2010)

Metabolite of Di-n-octyl phthalate (DOP) and of several high molecular weight phthalates

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.58** (2.35-2.83)	**2.47** (2.25-2.76)	**4.08** (3.87-4.48)	**7.24** (6.58-8.00)	**11.4** (10.0-12.5)	2782
	03-04	**2.74** (2.56-2.93)	**2.60** (2.42-2.79)	**4.39** (3.94-4.86)	**7.70** (6.65-8.60)	**10.7** (9.53-11.9)	2605
	05-06	**2.00** (1.82-2.20)	**1.86** (1.67-2.06)	**3.55** (3.14-4.00)	**6.80** (5.77-7.95)	**10.3** (8.68-12.7)	2548
	07-08	**2.79** (2.63-2.96)	**2.53** (2.37-2.70)	**4.76** (4.33-5.16)	**9.70** (8.52-10.9)	**14.8** (12.7-17.0)	2604
	09-10	**3.15** (2.77-3.59)	**2.94** (2.55-3.38)	**5.71** (4.88-6.72)	**11.8** (10.5-13.5)	**18.8** (16.0-21.9)	2749
Age group							
6-11 years	01-02	**6.96** (6.29-7.70)	**7.08** (5.83-7.87)	**11.2** (9.15-14.0)	**20.7** (15.5-22.3)	**26.4** (20.7-27.0)	393
	03-04	**7.25** (6.43-8.18)	**7.06** (5.93-7.59)	**11.2** (9.38-12.4)	**19.1** (14.4-25.6)	**26.9** (19.3-29.0)	342
	05-06	**5.31** (4.57-6.17)	**5.06** (4.57-5.79)	**8.78** (7.50-10.0)	**13.7** (10.2-21.3)	**21.3** (13.2-36.7)	356
	07-08	**7.41** (5.87-9.34)	**6.81** (5.50-9.05)	**11.6** (9.43-14.1)	**20.2** (12.7-39.2)	**30.4** (16.5-68.9)	389
	09-10	**5.92** (5.09-6.88)	**5.94** (5.09-6.92)	**9.47** (8.38-10.3)	**15.5** (10.7-23.7)	**22.7** (13.6-47.2)	415
12-19 years	01-02	**2.86** (2.52-3.25)	**2.94** (2.50-3.36)	**4.59** (4.03-5.23)	**6.69** (6.30-7.25)	**9.55** (8.03-10.7)	742
	03-04	**2.78** (2.54-3.05)	**2.75** (2.53-2.99)	**4.55** (4.05-5.15)	**6.61** (6.15-7.20)	**8.24** (7.00-10.2)	729
	05-06	**2.20** (1.90-2.55)	**2.07** (1.76-2.46)	**3.67** (2.99-4.39)	**6.84** (5.35-8.67)	**9.67** (7.12-11.4)	702
	07-08	**2.96** (2.59-3.38)	**2.95** (2.51-3.62)	**5.04** (4.33-6.00)	**8.18** (6.75-10.4)	**10.9** (9.38-15.1)	401
	09-10	**2.94** (2.40-3.60)	**2.67** (2.26-3.28)	**4.68** (4.04-5.56)	**10.8** (7.30-17.8)	**21.4** (15.6-29.9)	420
20 years and older	01-02	**2.24** (2.03-2.47)	**2.20** (2.00-2.40)	**3.51** (3.11-3.95)	**5.39** (4.82-6.18)	**7.71** (6.71-9.28)	1647
	03-04	**2.43** (2.27-2.61)	**2.38** (2.19-2.56)	**3.70** (3.33-4.08)	**6.09** (5.38-7.06)	**8.79** (7.84-9.56)	1534
	05-06	**1.76** (1.60-1.94)	**1.67** (1.47-1.86)	**2.96** (2.60-3.38)	**5.55** (4.61-6.46)	**8.46** (7.00-10.3)	1490
	07-08	**2.48** (2.33-2.64)	**2.26** (2.14-2.36)	**4.00** (3.68-4.39)	**8.03** (7.11-9.09)	**12.7** (11.1-14.8)	1814
	09-10	**2.97** (2.60-3.39)	**2.75** (2.38-3.22)	**5.25** (4.45-6.31)	**11.3** (9.63-13.2)	**18.1** (15.4-21.6)	1914
Gender							
Males	01-02	**2.35** (2.17-2.56)	**2.20** (2.02-2.42)	**3.76** (3.45-4.20)	**7.17** (6.27-8.06)	**11.5** (9.28-15.1)	1371
	03-04	**2.55** (2.39-2.72)	**2.36** (2.22-2.47)	**4.14** (3.52-4.86)	**7.84** (6.80-8.79)	**11.6** (10.2-13.5)	1250
	05-06	**1.86** (1.70-2.03)	**1.70** (1.53-1.88)	**3.33** (2.92-3.70)	**6.70** (5.59-8.33)	**10.7** (8.72-14.2)	1270
	07-08	**2.54** (2.34-2.76)	**2.32** (2.10-2.50)	**4.17** (3.80-4.81)	**8.91** (7.37-11.2)	**14.7** (12.9-17.5)	1294
	09-10	**3.02** (2.61-3.49)	**2.82** (2.43-3.36)	**5.51** (4.70-6.36)	**10.9** (9.84-12.1)	**18.5** (13.7-23.7)	1399
Females	01-02	**2.81** (2.48-3.18)	**2.76** (2.46-3.02)	**4.39** (3.97-4.92)	**7.66** (6.17-8.69)	**11.0** (8.62-15.9)	1411
	03-04	**2.93** (2.68-3.20)	**2.89** (2.58-3.23)	**4.53** (4.09-5.00)	**7.58** (6.44-8.57)	**10.0** (8.60-11.6)	1355
	05-06	**2.15** (1.88-2.45)	**2.00** (1.72-2.44)	**3.77** (3.15-4.47)	**6.90** (5.62-8.43)	**10.0** (8.14-12.5)	1278
	07-08	**3.04** (2.84-3.25)	**2.80** (2.50-3.11)	**5.08** (4.64-5.52)	**10.3** (8.67-11.3)	**15.0** (11.8-17.8)	1310
	09-10	**3.28** (2.88-3.74)	**3.00** (2.58-3.46)	**5.87** (4.96-7.05)	**13.0** (10.3-14.8)	**19.1** (15.4-29.5)	1350

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP) (creatinine corrected) (2001 – 2010)

Metabolite of Di-n-octyl phthalate (DOP) and of several high molecular weight phthalates

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**2.52** (2.21-2.88)	**2.37** (2.07-2.73)	**4.29** (3.73-5.00)	**7.36** (5.58-10.3)	**11.4** (8.36-14.5)	677
	03-04	**2.78** (2.56-3.02)	**2.63** (2.30-2.96)	**4.32** (3.66-4.96)	**8.14** (6.72-10.3)	**12.8** (9.37-17.1)	652
	05-06	**2.02** (1.62-2.51)	**1.79** (1.42-2.53)	**3.85** (2.74-5.22)	**7.00** (5.40-8.82)	**10.2** (7.64-16.4)	637
	07-08	**2.60** (2.26-2.99)	**2.45** (2.05-3.10)	**4.31** (3.49-5.22)	**8.31** (6.67-9.76)	**12.9** (9.50-15.5)	531
	09-10	**2.29** (1.92-2.74)	**2.08** (1.76-2.60)	**4.29** (3.61-5.05)	**9.02** (7.16-11.4)	**13.7** (10.9-17.8)	566
Non-Hispanic blacks	01-02	**2.17** (2.02-2.33)	**2.07** (1.88-2.28)	**3.68** (3.25-4.07)	**6.73** (5.46-7.70)	**10.0** (8.27-13.1)	703
	03-04	**2.34** (2.13-2.58)	**2.17** (1.99-2.45)	**3.96** (3.33-4.43)	**6.93** (6.03-8.80)	**13.4** (9.32-15.9)	699
	05-06	**1.61** (1.42-1.81)	**1.58** (1.38-1.77)	**2.76** (2.27-3.37)	**5.63** (4.33-7.59)	**8.68** (6.86-10.4)	678
	07-08	**2.28** (1.96-2.65)	**2.11** (1.72-2.35)	**3.91** (3.33-4.56)	**7.97** (5.58-12.8)	**16.4** (8.21-57.0)	597
	09-10	**2.45** (2.02-2.97)	**2.26** (1.81-2.84)	**4.14** (3.35-5.19)	**8.02** (6.24-11.3)	**14.7** (9.92-19.7)	516
Non-Hispanic whites	01-02	**2.69** (2.42-3.00)	**2.57** (2.25-2.94)	**4.19** (3.87-4.79)	**7.63** (6.58-8.45)	**11.8** (10.0-14.7)	1216
	03-04	**2.83** (2.60-3.09)	**2.65** (2.43-2.96)	**4.55** (3.90-5.16)	**7.79** (6.59-8.79)	**10.6** (9.43-11.3)	1088
	05-06	**2.08** (1.92-2.24)	**1.95** (1.76-2.12)	**3.60** (3.26-4.00)	**6.47** (5.56-7.93)	**10.3** (7.95-13.1)	1038
	07-08	**2.96** (2.72-3.23)	**2.70** (2.50-2.93)	**5.06** (4.35-5.77)	**10.3** (8.61-11.5)	**15.1** (12.3-19.3)	1077
	09-10	**3.57** (3.12-4.07)	**3.28** (2.81-3.73)	**6.33** (5.25-7.39)	**13.2** (11.1-14.9)	**21.6** (16.6-26.2)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP) (creatinine corrected) (2011 - 2012)

Metabolite of Di-n-octyl phthalate (DOP) and of several high molecular weight phthalates

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**3.42** (2.93-3.99)	**2.86** (2.44-3.33)	**6.00** (4.95-7.75)	**15.8** (10.8-23.6)	**36.6** (18.8-65.9)	2487
Age group							
6-11 years	11-12	**4.79** (4.18-5.49)	**4.19** (3.60-4.67)	**7.26** (5.81-8.61)	**15.7** (8.97-26.7)	**28.2** (16.4-39.8)	395
12-19 years	11-12	**3.18** (2.50-4.04)	**2.44** (1.82-3.31)	**5.59** (3.85-8.33)	**26.6** (8.44-45.7)	**45.7** (17.4-80.0)	388
20 years and older	11-12	**3.33** (2.83-3.93)	**2.69** (2.34-3.16)	**5.97** (4.78-7.89)	**15.7** (10.7-22.1)	**32.2** (17.1-69.6)	1704
Gender							
Males	11-12	**3.29** (2.80-3.86)	**2.67** (2.35-3.07)	**6.00** (4.86-7.58)	**15.7** (10.1-25.0)	**41.5** (17.2-89.9)	1258
Females	11-12	**3.55** (2.95-4.27)	**3.00** (2.44-3.65)	**6.05** (4.80-8.45)	**15.8** (9.78-25.7)	**33.7** (16.2-65.9)	1229
Race/ethnicity							
Mexican Americans	11-12	**2.91** (2.34-3.61)	**2.50** (2.14-2.92)	**4.88** (3.49-6.11)	**11.5** (6.42-24.4)	**24.4** (9.94-78.7)	316
Non-Hispanic blacks	11-12	**2.76** (2.42-3.15)	**2.27** (1.96-2.65)	**4.82** (3.77-6.23)	**11.8** (8.36-15.1)	**22.9** (15.3-31.9)	665
Non-Hispanic whites	11-12	**3.67** (3.06-4.42)	**3.08** (2.58-3.93)	**6.92** (5.14-9.10)	**16.3** (11.2-27.0)	**36.8** (17.6-69.6)	811
All Hispanics	11-12	**3.13** (2.50-3.92)	**2.45** (2.14-2.73)	**5.31** (4.04-6.73)	**15.1** (7.09-36.6)	**34.6** (11.9-128)	571
Asians	11-12	**3.00** (2.29-3.92)	**2.54** (2.08-3.14)	**4.64** (3.56-7.40)	**14.7** (6.97-38.8)	**38.8** (21.3-65.7)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-octyl phthalate (MOP) (1999 – 2010)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**2.69** (2.02-3.36)	**4.87** (3.86-5.71)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	< LOD	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
	07-08	*	< LOD	< LOD	< LOD	< LOD	2604
	09-10	*	< LOD	< LOD	< LOD	< LOD	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	**3.70** (<LOD-5.88)	**5.38** (2.86-8.40)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	< LOD	< LOD	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
	09-10	*	< LOD	< LOD	< LOD	< LOD	415
12-19 years	99-00	*	< LOD	< LOD	**2.86** (<LOD-4.20)	**4.70** (3.36-7.06)	752
	01-02	*	< LOD	< LOD	< LOD	< LOD	742
	03-04	*	< LOD	< LOD	< LOD	< LOD	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	401
	09-10	*	< LOD	< LOD	< LOD	< LOD	420
20 years and older	99-00	*	< LOD	< LOD	**2.52** (1.85-3.19)	**4.87** (3.53-5.88)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
	07-08	*	< LOD	< LOD	< LOD	< LOD	1814
	09-10	*	< LOD	< LOD	< LOD	< LOD	1914
Gender							
Males	99-00	*	< LOD	< LOD	**2.69** (1.85-3.70)	**4.70** (3.36-5.88)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	< LOD	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1399
Females	99-00	*	< LOD	< LOD	**2.52** (2.02-3.53)	**5.21** (3.70-6.38)	1326
	01-02	*	< LOD	< LOD	< LOD	< LOD	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	< LOD	1310
	09-10	*	< LOD	< LOD	< LOD	< LOD	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.51, 1.68, 1.68, 1.85, 1.85 and 0.84 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.68 for survey periods 1999-2008 compared with results previously reported.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-octyl phthalate (MOP) (1999 – 2010)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**1.85** (<LOD-2.35)	**2.69** (2.35-4.37)	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**3.19** (<LOD-5.04)	**5.04** (3.70-6.89)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	703
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	699
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	678
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	597
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**2.69** (2.02-3.53)	**5.04** (3.86-5.88)	912
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1088
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1077
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.51, 1.68, 1.68, 1.85, 1.85 and 0.84 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.68 for survey periods 1999-2008 compared with results previously reported.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-octyl phthalate (MOP) (creatinine corrected) (1999 – 2010)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**4.03** (3.48-4.38)	**5.93** (4.96-7.21)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	< LOD	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
	07-08	*	< LOD	< LOD	< LOD	< LOD	2604
	09-10	*	< LOD	< LOD	< LOD	< LOD	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	**3.73** (<LOD-6.30)	**6.30** (3.31-17.2)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	< LOD	< LOD	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
	09-10	*	< LOD	< LOD	< LOD	< LOD	415
12-19 years	99-00	*	< LOD	< LOD	**2.50** (<LOD-2.87)	**3.16** (2.59-5.59)	752
	01-02	*	< LOD	< LOD	< LOD	< LOD	742
	03-04	*	< LOD	< LOD	< LOD	< LOD	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	401
	09-10	*	< LOD	< LOD	< LOD	< LOD	420
20 years and older	99-00	*	< LOD	< LOD	**4.37** (3.48-4.89)	**5.93** (5.04-7.76)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
	07-08	*	< LOD	< LOD	< LOD	< LOD	1814
	09-10	*	< LOD	< LOD	< LOD	< LOD	1914
Gender							
Males	99-00	*	< LOD	< LOD	**3.06** (2.59-3.48)	**4.30** (3.26-5.80)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	< LOD	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1399
Females	99-00	*	< LOD	< LOD	**5.04** (4.20-5.96)	**7.21** (5.59-10.5)	1326
	01-02	*	< LOD	< LOD	< LOD	< LOD	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	< LOD	1310
	09-10	*	< LOD	< LOD	< LOD	< LOD	1350

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.68 for survey periods 1999-2008 compared with results previously reported..
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-octyl phthalate (MOP) (creatinine corrected) (1999 – 2010)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**3.06** (<LOD-4.70)	**5.59** (4.37-6.72)	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**2.28** (<LOD-3.26)	**3.73** (2.52-5.49)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	703
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	699
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	678
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	597
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**4.38** (3.60-5.17)	**6.12** (5.29-8.40)	912
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1088
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1077
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.68 for survey periods 1999-2008 compared with results previously reported.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Cyclohexane-1,2-dicarboxylic acid-mono(hydroxy-isononyl) ester (MHNCH) (2011 - 2012)

Metabolite of Di(isononyl) cyclohexane-1,2-dicarboxylate (DINCH)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**.600** (.500-.800)	**1.10** (.900-1.20)	2489
Age group							
6-11 years	11-12	*	**< LOD**	**.800** (.600-1.10)	**1.90** (1.20-2.70)	**4.10** (1.90-6.00)	396
12-19 years	11-12	*	**< LOD**	**.400** (<LOD-.600)	**.900** (.600-1.30)	**1.30** (.900-2.50)	388
20 years and older	11-12	*	**< LOD**	**< LOD**	**.500** (.400-.600)	**.800** (.700-.900)	1705
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**.700** (.600-1.00)	**1.10** (.800-1.70)	1259
Females	11-12	*	**< LOD**	**< LOD**	**.600** (.500-.700)	**.900** (.800-1.10)	1230
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**.400** (<LOD-.500)	**.800** (.600-1.10)	**1.30** (.800-2.70)	316
Non-Hispanic blacks	11-12	*	**< LOD**	**.500** (<LOD-.500)	**.900** (.700-1.10)	**1.20** (1.10-1.50)	665
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**.600** (.500-.700)	**.900** (.700-1.10)	813
All Hispanics	11-12	*	**< LOD**	**< LOD**	**.700** (.600-.900)	**1.10** (.800-1.60)	571
Asians	11-12	*	**< LOD**	**< LOD**	**1.00** (.700-1.50)	**2.00** (1.20-5.50)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Cyclohexane-1,2-dicarboxylic acid-mono(hydroxy-isononyl) ester (MHNCH) (creatinine corrected) (2011 - 2012)

Metabolite of Di(isononyl) cyclohexane-1,2-dicarboxylate (DINCH)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	**1.12** (1.01-1.22)	**1.57** (1.39-1.87)	2487
Age group							
6-11 years	11-12	*	< LOD	**1.27** (1.04-1.40)	**2.22** (1.65-3.11)	**3.81** (2.38-6.64)	395
12-19 years	11-12	*	< LOD	**.581** (<LOD-.700)	**1.00** (.778-1.33)	**1.57** (1.04-2.86)	388
20 years and older	11-12	*	< LOD	< LOD	**1.03** (.933-1.12)	**1.39** (1.17-1.65)	1704
Gender							
Males	11-12	*	< LOD	< LOD	**.916** (.778-1.08)	**1.39** (1.08-1.59)	1258
Females	11-12	*	< LOD	< LOD	**1.22** (1.12-1.40)	**1.91** (1.47-2.55)	1229
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	**.667** (<LOD-.755)	**1.22** (.903-1.47)	**1.61** (1.27-2.76)	316
Non-Hispanic blacks	11-12	*	< LOD	**.449** (<LOD-.528)	**.848** (.757-.952)	**1.23** (1.02-1.57)	665
Non-Hispanic whites	11-12	*	< LOD	< LOD	**1.12** (1.00-1.22)	**1.56** (1.22-2.00)	811
All Hispanics	11-12	*	< LOD	< LOD	**1.12** (.824-1.47)	**1.54** (1.27-1.87)	571
Asians	11-12	*	< LOD	< LOD	**1.89** (1.33-2.22)	**3.57** (2.00-7.00)	352

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Daidzein (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**75.1** (61.9-91.1)	**69.8** (57.8-82.6)	**229** (184-298)	**538** (471-702)	**1320** (1020-1540)	2553
	01-02	**51.7** (46.6-57.5)	**52.3** (48.9-57.4)	**192** (151-226)	**577** (447-725)	**1250** (863-1640)	2794
	03-04	**66.7** (60.4-73.7)	**62.0** (54.1-69.7)	**195** (171-219)	**590** (500-675)	**1070** (893-1330)	2594
	05-06	**66.5** (59.7-74.1)	**58.8** (51.0-67.7)	**204** (187-226)	**648** (485-745)	**1180** (1000-1350)	2528
	07-08	**67.1** (60.2-74.8)	**57.6** (49.1-66.0)	**203** (182-222)	**747** (551-994)	**1740** (1210-2240)	2424
	09-10	**69.3** (61.6-77.9)	**57.2** (48.8-64.3)	**228** (190-262)	**753** (671-880)	**1850** (1380-2480)	2792
Age group							
6-11 years	99-00	**90.5** (75.1-109)	**101** (70.3-138)	**257** (172-430)	**510** (437-840)	**1130** (657-1740)	330
	01-02	**84.9** (71.6-101)	**72.7** (56.3-97.0)	**261** (155-385)	**605** (437-989)	**1060** (645-1500)	396
	03-04	**84.9** (71.6-101)	**66.8** (55.4-92.8)	**229** (151-314)	**574** (371-654)	**818** (625-1060)	341
	05-06	**94.1** (74.3-119)	**74.0** (56.0-95.9)	**287** (149-471)	**1010** (557-1600)	**1870** (1040-3830)	351
	07-08	**105** (80.2-137)	**90.6** (61.4-123)	**277** (183-431)	**1370** (491-2190)	**2190** (1340-3500)	360
	09-10	**109** (88.1-135)	**98.5** (75.4-119)	**461** (262-605)	**1000** (730-1520)	**1900** (1120-2800)	371
12-19 years	99-00	**123** (91.4-166)	**124** (85.6-168)	**326** (227-454)	**833** (445-1490)	**1460** (861-2410)	753
	01-02	**69.3** (52.6-91.3)	**70.2** (52.5-87.5)	**255** (185-344)	**774** (573-984)	**1360** (922-1950)	744
	03-04	**89.0** (75.2-105)	**78.0** (59.0-104)	**248** (197-332)	**808** (500-968)	**1200** (900-1790)	729
	05-06	**94.4** (76.0-117)	**77.1** (59.7-103)	**286** (200-416)	**836** (530-1170)	**1390** (929-2220)	693
	07-08	**79.7** (64.4-98.6)	**76.0** (52.2-107)	**256** (189-300)	**828** (396-1100)	**1220** (874-2070)	375
	09-10	**94.2** (74.1-120)	**82.9** (60.8-116)	**295** (201-395)	**1020** (690-1210)	**1390** (1150-2500)	447
20 years and older	99-00	**67.6** (55.4-82.4)	**60.9** (49.3-74.1)	**215** (167-239)	**518** (459-573)	**1320** (978-1540)	1470
	01-02	**46.4** (41.4-52.0)	**49.1** (40.8-53.4)	**176** (133-216)	**520** (396-703)	**1210** (771-1900)	1654
	03-04	**61.9** (55.2-69.4)	**57.9** (48.7-68.5)	**180** (150-214)	**554** (416-695)	**1110** (857-1360)	1524
	05-06	**60.5** (53.4-68.7)	**54.0** (46.8-63.8)	**197** (169-209)	**512** (427-664)	**1100** (795-1270)	1484
	07-08	**62.2** (55.0-70.4)	**51.7** (44.3-60.3)	**189** (169-211)	**686** (514-939)	**1640** (1060-2500)	1689
	09-10	**63.0** (54.7-72.5)	**49.3** (43.0-59.8)	**203** (168-250)	**701** (572-856)	**1980** (1220-2780)	1974
Gender							
Males	99-00	**88.9** (71.4-111)	**80.6** (66.6-112)	**262** (198-355)	**587** (501-989)	**1540** (989-2080)	1220
	01-02	**49.8** (42.8-57.9)	**50.8** (46.0-55.0)	**190** (137-240)	**498** (386-694)	**920** (717-1380)	1375
	03-04	**73.8** (63.4-85.9)	**65.2** (56.1-76.4)	**214** (156-311)	**709** (535-900)	**1200** (969-1380)	1244
	05-06	**73.9** (65.3-83.6)	**66.4** (53.8-78.5)	**210** (180-241)	**694** (471-823)	**1180** (979-1400)	1252
	07-08	**72.7** (62.2-85.0)	**63.4** (49.3-76.5)	**210** (174-259)	**706** (520-1180)	**2010** (1210-3520)	1198
	09-10	**68.8** (59.0-80.3)	**55.0** (46.0-65.0)	**207** (168-257)	**674** (559-840)	**1430** (1160-2370)	1377
Females	99-00	**64.1** (52.9-77.6)	**57.8** (45.0-73.2)	**199** (150-244)	**476** (389-722)	**1220** (566-1700)	1333
	01-02	**53.6** (48.1-59.8)	**55.7** (49.8-62.7)	**199** (149-234)	**642** (511-816)	**1470** (1170-1980)	1419
	03-04	**60.7** (53.6-68.8)	**57.4** (49.1-67.6)	**175** (159-201)	**466** (381-622)	**884** (654-1380)	1350
	05-06	**60.1** (52.5-68.9)	**52.5** (45.0-61.1)	**200** (166-231)	**587** (420-717)	**1140** (811-1440)	1276
	07-08	**62.2** (54.4-71.0)	**52.2** (44.4-58.7)	**191** (169-217)	**752** (476-905)	**1570** (994-2180)	1226
	09-10	**69.8** (60.7-80.3)	**60.2** (46.1-71.1)	**249** (200-309)	**840** (694-973)	**2140** (1210-2910)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.5, 1.6, 0.3, 0.4, 0.4, and 0.4 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Daidzein (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**78.9** (59.8-104)	**66.2** (48.4-87.1)	**254** (170-402)	**806** (534-1020)	**1360** (968-2780)	816
	01-02	**39.2** (28.5-54.0)	**39.9** (28.8-59.9)	**169** (100-291)	**515** (388-669)	**896** (613-1480)	679
	03-04	**57.4** (50.2-65.7)	**45.5** (35.2-53.3)	**178** (130-236)	**686** (487-934)	**1390** (934-1650)	653
	05-06	**60.6** (53.3-68.9)	**54.1** (44.3-65.2)	**193** (155-239)	**671** (424-966)	**1350** (966-1550)	634
	07-08	**60.5** (46.6-78.6)	**45.8** (34.4-67.3)	**206** (143-313)	**815** (510-1010)	**1410** (994-2010)	520
	09-10	**60.6** (48.8-75.2)	**48.8** (38.6-74.3)	**219** (142-283)	**622** (495-853)	**1190** (884-1570)	604
Non-Hispanic blacks	99-00	**91.9** (71.9-118)	**103** (81.6-133)	**286** (243-377)	**553** (459-824)	**1190** (640-1900)	607
	01-02	**66.1** (48.2-90.7)	**72.9** (52.8-97.3)	**255** (182-393)	**757** (448-1400)	**1410** (757-2480)	706
	03-04	**75.0** (56.1-100)	**66.0** (50.7-86.6)	**241** (151-340)	**622** (408-875)	**1190** (660-2300)	699
	05-06	**81.3** (71.6-92.4)	**76.5** (64.7-97.1)	**254** (199-331)	**676** (463-874)	**1210** (760-1790)	662
	07-08	**84.0** (63.3-111)	**69.8** (43.4-102)	**338** (248-419)	**1080** (735-1500)	**2180** (1230-2610)	562
	09-10	**77.2** (64.6-92.1)	**69.9** (58.1-82.6)	**229** (192-281)	**711** (534-1080)	**1350** (894-3480)	534
Non-Hispanic whites	99-00	**74.4** (61.5-89.9)	**66.9** (56.2-78.2)	**216** (157-298)	**512** (438-745)	**1360** (989-1710)	917
	01-02	**48.6** (43.8-54.0)	**49.8** (42.8-54.2)	**171** (137-204)	**504** (389-658)	**1140** (774-1620)	1222
	03-04	**65.8** (58.6-74.0)	**62.0** (52.8-71.9)	**191** (165-215)	**572** (416-722)	**1070** (823-1330)	1079
	05-06	**62.0** (54.4-70.7)	**54.2** (46.9-64.1)	**200** (164-216)	**581** (430-717)	**1040** (811-1310)	1039
	07-08	**63.6** (56.8-71.2)	**56.7** (46.2-65.0)	**180** (158-212)	**603** (455-832)	**1430** (915-2170)	993
	09-10	**68.3** (58.2-80.2)	**55.0** (45.5-66.8)	**219** (168-284)	**726** (584-887)	**1740** (1150-2510)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.5, 1.6, 0.3, 0.4, 0.4, and 0.4 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Daidzein (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**68.5** (55.9-83.9)	**65.1** (52.8-80.8)	**204** (156-249)	**560** (471-629)	**944** (836-1150)	2553
	01-02	**48.5** (43.7-54.0)	**48.3** (43.1-56.5)	**166** (140-196)	**500** (391-608)	**957** (801-1180)	2794
	03-04	**62.5** (58.3-67.0)	**56.1** (50.0-63.5)	**164** (144-187)	**502** (429-591)	**1060** (825-1150)	2594
	05-06	**64.8** (58.7-71.6)	**52.4** (47.4-59.7)	**184** (162-209)	**564** (461-679)	**1070** (896-1310)	2528
	07-08	**67.5** (60.5-75.2)	**55.6** (47.4-64.0)	**197** (178-217)	**672** (538-897)	**1400** (1070-2250)	2424
	09-10	**74.2** (67.0-82.2)	**55.9** (51.6-61.7)	**219** (184-272)	**790** (688-1090)	**1920** (1550-2390)	2791
Age group							
6-11 years	99-00	**92.6** (76.3-112)	**93.1** (71.2-114)	**251** (157-324)	**552** (363-838)	**1070** (781-2150)	330
	01-02	**96.4** (79.0-118)	**85.9** (60.3-127)	**275** (159-395)	**655** (452-733)	**938** (683-1140)	396
	03-04	**90.4** (77.2-106)	**72.8** (58.1-99.5)	**201** (152-240)	**454** (329-638)	**702** (526-1200)	341
	05-06	**104** (83.1-130)	**73.8** (59.5-96.7)	**305** (175-453)	**1040** (686-1830)	**2430** (1190-3630)	351
	07-08	**128** (101-164)	**106** (80.0-141)	**307** (197-429)	**1420** (543-2630)	**2630** (1380-3670)	360
	09-10	**149** (124-179)	**128** (91.0-162)	**500** (346-601)	**1230** (814-1530)	**2150** (1450-3070)	370
12-19 years	99-00	**83.1** (58.4-118)	**85.6** (53.8-126)	**207** (138-386)	**628** (295-1060)	**1000** (628-2380)	753
	01-02	**53.4** (40.8-70.0)	**50.9** (38.3-77.6)	**181** (142-248)	**549** (385-718)	**1030** (622-1360)	744
	03-04	**66.6** (55.7-79.6)	**56.4** (43.9-74.6)	**179** (151-217)	**517** (370-753)	**877** (617-1240)	729
	05-06	**70.0** (56.9-86.2)	**55.1** (42.9-74.3)	**203** (149-263)	**545** (338-845)	**914** (659-1750)	693
	07-08	**61.3** (51.5-72.9)	**61.9** (39.9-75.0)	**191** (144-217)	**470** (295-645)	**821** (544-1110)	375
	09-10	**88.6** (71.3-110)	**76.5** (53.6-107)	**249** (177-312)	**689** (522-969)	**1410** (823-2740)	447
20 years and older	99-00	**63.8** (51.5-79.1)	**59.3** (48.7-75.0)	**194** (151-234)	**554** (471-624)	**908** (783-1180)	1470
	01-02	**43.9** (39.4-48.9)	**43.8** (37.4-53.3)	**153** (125-186)	**428** (348-590)	**946** (728-1220)	1654
	03-04	**59.2** (54.3-64.5)	**51.7** (46.4-62.6)	**155** (131-185)	**501** (404-658)	**1090** (808-1240)	1524
	05-06	**60.7** (54.3-67.8)	**50.6** (43.1-59.5)	**171** (151-199)	**483** (434-609)	**1030** (847-1200)	1484
	07-08	**63.9** (56.0-72.9)	**49.2** (42.6-57.7)	**187** (164-216)	**675** (514-904)	**1340** (962-2780)	1689
	09-10	**67.1** (59.4-75.7)	**50.3** (44.2-55.5)	**194** (168-232)	**775** (613-1120)	**1980** (1550-2640)	1974
Gender							
Males	99-00	**69.7** (54.7-88.8)	**70.2** (51.3-84.3)	**198** (147-276)	**623** (494-836)	**1050** (884-1290)	1220
	01-02	**40.5** (34.8-47.1)	**41.7** (34.5-47.9)	**139** (107-179)	**348** (260-553)	**788** (585-947)	1375
	03-04	**57.7** (49.4-67.3)	**48.9** (41.6-58.2)	**160** (126-205)	**467** (368-600)	**919** (665-1200)	1244
	05-06	**59.5** (53.3-66.3)	**51.0** (43.2-57.6)	**164** (134-203)	**467** (403-612)	**927** (781-1100)	1252
	07-08	**61.3** (52.5-71.7)	**48.7** (41.5-63.2)	**178** (141-205)	**585** (412-845)	**1290** (907-2810)	1198
	09-10	**62.8** (54.8-72.1)	**49.9** (42.6-57.3)	**174** (145-196)	**613** (497-790)	**1740** (1170-2570)	1376
Females	99-00	**67.4** (54.8-82.9)	**62.7** (51.1-80.9)	**207** (152-250)	**509** (356-624)	**850** (610-1410)	1333
	01-02	**57.6** (50.8-65.2)	**59.5** (48.1-73.4)	**191** (159-227)	**615** (536-722)	**1180** (924-1430)	1419
	03-04	**67.4** (60.8-74.9)	**65.1** (54.6-73.4)	**165** (143-191)	**564** (409-699)	**1090** (757-1370)	1350
	05-06	**70.4** (61.3-80.8)	**57.1** (45.1-71.7)	**194** (169-216)	**609** (463-887)	**1200** (957-1750)	1276
	07-08	**73.8** (64.9-84.0)	**63.0** (52.1-77.2)	**223** (190-259)	**763** (577-1000)	**1410** (1070-1990)	1226
	09-10	**87.2** (77.9-97.7)	**64.1** (55.6-76.7)	**292** (240-336)	**972** (800-1230)	**2280** (1560-2880)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Daidzein (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**72.5** (59.1-88.9)	**64.2** (47.1-91.1)	**243** (176-310)	**677** (468-1080)	**1380** (753-2690)	816
	01-02	**36.9** (27.8-49.0)	**37.1** (24.8-57.9)	**146** (101-225)	**441** (307-596)	**722** (565-1160)	679
	03-04	**51.8** (45.0-59.6)	**47.7** (35.9-58.3)	**159** (117-209)	**502** (354-686)	**1130** (779-1390)	653
	05-06	**54.7** (45.6-65.7)	**47.2** (35.7-61.1)	**174** (136-219)	**558** (380-617)	**925** (642-1140)	634
	07-08	**59.5** (44.1-80.1)	**41.1** (27.4-76.1)	**200** (150-288)	**715** (502-1060)	**1410** (1090-1860)	520
	09-10	**63.7** (52.5-77.1)	**49.2** (37.9-65.4)	**213** (167-273)	**614** (487-861)	**1380** (865-1940)	604
Non-Hispanic blacks	99-00	**59.1** (46.5-75.1)	**67.6** (52.1-87.1)	**172** (134-207)	**381** (316-533)	**802** (562-1010)	607
	01-02	**46.4** (33.7-63.8)	**49.8** (35.5-69.7)	**169** (104-249)	**504** (263-773)	**939** (542-1530)	706
	03-04	**53.1** (42.5-66.4)	**44.7** (28.6-72.1)	**147** (121-191)	**415** (275-538)	**727** (538-1040)	699
	05-06	**57.0** (50.3-64.5)	**48.5** (40.3-59.7)	**157** (124-221)	**467** (370-654)	**913** (603-1290)	662
	07-08	**65.0** (48.7-86.6)	**53.0** (36.0-80.6)	**240** (171-292)	**728** (520-937)	**1330** (800-2670)	562
	09-10	**62.1** (53.0-72.8)	**55.7** (42.7-65.0)	**179** (157-223)	**576** (457-690)	**956** (710-1840)	533
Non-Hispanic whites	99-00	**72.8** (60.3-88.0)	**67.5** (55.3-81.5)	**207** (160-249)	**560** (442-659)	**908** (742-1350)	917
	01-02	**48.1** (43.4-53.3)	**47.0** (42.0-56.0)	**163** (137-191)	**463** (375-627)	**957** (805-1220)	1222
	03-04	**64.9** (59.8-70.3)	**58.2** (50.4-66.3)	**165** (138-204)	**516** (385-667)	**1090** (786-1250)	1079
	05-06	**65.2** (57.9-73.3)	**52.7** (46.5-60.7)	**184** (155-211)	**564** (443-737)	**1070** (894-1390)	1039
	07-08	**66.2** (58.4-75.1)	**57.7** (46.0-65.5)	**187** (160-216)	**604** (474-763)	**1210** (907-1670)	993
	09-10	**76.6** (67.1-87.4)	**56.7** (51.2-64.1)	**225** (173-306)	**809** (617-1180)	**1920** (1410-2470)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterodiol (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**26.6** (21.9-32.3)	**34.0** (29.4-38.7)	**78.8** (62.6-95.5)	**165** (135-215)	**266** (215-335)	2527
	01-02	**35.7** (32.5-39.3)	**39.4** (36.3-43.4)	**89.2** (80.7-96.9)	**181** (162-205)	**253** (223-308)	2794
	03-04	**39.5** (36.1-43.3)	**44.9** (40.6-50.3)	**106** (97.2-115)	**242** (212-264)	**367** (311-423)	2594
	05-06	**37.7** (33.2-42.9)	**42.4** (39.4-47.2)	**106** (95.5-120)	**244** (226-266)	**379** (305-440)	2528
	07-08	**36.8** (32.0-42.4)	**43.5** (37.8-49.2)	**109** (92.1-124)	**238** (199-294)	**429** (279-723)	2424
	09-10	**39.5** (36.3-43.1)	**44.5** (41.0-48.5)	**107** (98.4-120)	**264** (226-288)	**545** (446-651)	2792
Age group							
6-11 years	99-00	**26.5** (17.1-41.0)	**29.4** (21.2-44.2)	**78.7** (44.2-109)	**215** (91.1-279)	**276** (131-458)	327
	01-02	**33.6** (29.8-37.8)	**35.5** (29.4-43.7)	**78.1** (63.8-87.0)	**152** (113-171)	**203** (167-327)	396
	03-04	**42.0** (34.5-51.1)	**42.1** (34.4-49.2)	**91.4** (74.4-110)	**199** (126-289)	**312** (217-525)	341
	05-06	**33.2** (26.1-42.3)	**38.5** (34.7-43.2)	**70.4** (55.7-91.7)	**129** (99.1-162)	**181** (129-366)	351
	07-08	**38.5** (30.1-49.3)	**42.9** (31.3-55.3)	**80.4** (62.7-118)	**181** (119-318)	**318** (186-439)	360
	09-10	**38.6** (33.9-44.0)	**39.9** (32.5-44.2)	**88.8** (67.7-106)	**195** (131-265)	**277** (210-380)	371
12-19 years	99-00	**29.8** (23.8-37.2)	**34.0** (27.4-42.0)	**84.4** (59.1-101)	**166** (112-234)	**253** (182-337)	744
	01-02	**35.3** (30.5-40.9)	**37.7** (34.8-43.4)	**84.2** (72.1-96.9)	**165** (128-206)	**238** (169-343)	744
	03-04	**45.1** (39.4-51.6)	**46.3** (38.7-56.9)	**99.5** (84.9-109)	**191** (161-269)	**325** (275-415)	729
	05-06	**39.1** (34.0-45.0)	**41.1** (36.8-46.5)	**92.0** (80.2-109)	**193** (151-238)	**265** (231-303)	693
	07-08	**37.3** (29.5-47.2)	**45.8** (32.2-54.1)	**97.9** (73.4-126)	**199** (151-253)	**293** (212-483)	375
	09-10	**37.5** (30.4-46.2)	**38.3** (32.5-50.7)	**98.0** (72.3-119)	**184** (122-286)	**315** (177-820)	447
20 years and older	99-00	**26.1** (21.8-31.3)	**34.3** (29.8-38.7)	**78.3** (63.5-94.8)	**160** (132-196)	**263** (189-335)	1456
	01-02	**36.1** (31.8-41.0)	**40.4** (36.0-45.7)	**91.2** (79.3-105)	**190** (161-220)	**256** (224-312)	1654
	03-04	**38.4** (34.2-43.0)	**44.9** (40.1-51.9)	**112** (98.8-125)	**255** (215-274)	**398** (320-448)	1524
	05-06	**38.1** (32.7-44.4)	**43.8** (39.0-49.5)	**116** (103-130)	**266** (242-281)	**413** (326-479)	1484
	07-08	**36.5** (31.2-42.8)	**43.5** (37.6-49.3)	**116** (97.5-130)	**247** (194-326)	**473** (300-757)	1689
	09-10	**40.0** (36.2-44.1)	**47.6** (42.2-53.0)	**114** (101-130)	**277** (230-366)	**596** (460-746)	1974
Gender							
Males	99-00	**25.3** (19.5-32.7)	**33.0** (28.0-38.0)	**72.6** (54.7-94.3)	**149** (109-219)	**258** (169-286)	1206
	01-02	**35.2** (31.8-39.1)	**40.5** (36.8-44.8)	**90.6** (82.3-103)	**184** (158-198)	**263** (223-338)	1375
	03-04	**39.7** (36.2-43.6)	**45.1** (40.5-51.1)	**102** (92.9-115)	**231** (186-266)	**361** (268-460)	1244
	05-06	**40.4** (32.8-49.8)	**46.2** (38.9-52.3)	**107** (90.6-127)	**264** (227-289)	**413** (287-496)	1252
	07-08	**33.1** (28.6-38.2)	**39.8** (34.7-43.3)	**91.8** (78.6-116)	**216** (180-242)	**378** (238-738)	1198
	09-10	**37.4** (30.9-45.3)	**41.7** (35.5-48.4)	**94.7** (78.9-111)	**227** (173-312)	**476** (366-664)	1377
Females	99-00	**27.9** (23.4-33.3)	**36.0** (29.9-40.3)	**84.4** (71.8-97.9)	**177** (146-219)	**280** (219-375)	1321
	01-02	**36.2** (32.2-40.7)	**38.5** (35.3-43.4)	**87.0** (75.6-98.5)	**175** (152-212)	**248** (220-283)	1419
	03-04	**39.3** (33.8-45.5)	**44.9** (38.3-53.0)	**110** (97.3-124)	**250** (203-294)	**398** (309-464)	1350
	05-06	**35.4** (30.3-41.2)	**41.1** (35.6-45.4)	**106** (94.2-123)	**225** (186-267)	**352** (268-477)	1276
	07-08	**40.7** (33.0-50.2)	**48.4** (39.3-58.1)	**123** (101-145)	**258** (206-336)	**479** (311-757)	1226
	09-10	**41.7** (37.6-46.3)	**48.9** (41.6-56.7)	**123** (111-140)	**277** (243-304)	**553** (448-778)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.8, 1.5, 0.3, 0.04, 0.04, and 0.04 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterodiol (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**21.7** (19.5-24.1)	**28.0** (24.7-34.7)	**70.4** (60.8-78.8)	**143** (117-169)	**213** (169-256)	791
	01-02	**30.5** (25.7-36.3)	**34.0** (29.0-39.2)	**75.9** (58.8-89.7)	**159** (119-202)	**244** (192-298)	679
	03-04	**33.1** (26.4-41.6)	**38.7** (31.2-47.6)	**95.2** (78.1-115)	**198** (125-307)	**307** (186-480)	653
	05-06	**38.1** (32.2-45.1)	**40.6** (34.6-47.6)	**102** (86.8-123)	**262** (177-359)	**383** (289-511)	634
	07-08	**28.2** (24.8-32.0)	**29.7** (26.7-33.4)	**70.8** (59.9-83.8)	**173** (139-208)	**305** (207-456)	520
	09-10	**27.9** (24.5-31.7)	**31.1** (28.8-36.7)	**75.5** (66.6-85.5)	**157** (120-192)	**255** (174-408)	604
Non-Hispanic blacks	99-00	**25.8** (21.7-30.7)	**31.2** (24.4-35.9)	**66.0** (50.2-86.7)	**157** (122-193)	**260** (185-336)	608
	01-02	**35.0** (28.9-42.3)	**38.7** (33.2-49.2)	**83.7** (70.0-103)	**169** (132-191)	**225** (175-339)	706
	03-04	**40.4** (34.9-46.7)	**47.1** (40.4-53.7)	**100** (81.3-123)	**212** (157-254)	**293** (232-417)	699
	05-06	**34.7** (30.1-40.1)	**38.4** (32.6-44.7)	**85.1** (70.9-109)	**190** (137-242)	**269** (245-364)	662
	07-08	**34.4** (26.9-44.0)	**38.9** (28.9-48.5)	**95.7** (78.5-126)	**202** (147-252)	**327** (232-514)	562
	09-10	**32.4** (27.3-38.4)	**35.7** (30.4-42.3)	**98.5** (76.2-126)	**211** (178-245)	**307** (221-546)	534
Non-Hispanic whites	99-00	**29.2** (24.0-35.4)	**37.6** (31.3-43.8)	**85.8** (68.3-99.4)	**171** (138-228)	**270** (187-375)	915
	01-02	**35.6** (31.8-40.0)	**40.4** (36.1-44.7)	**89.6** (78.5-101)	**175** (153-198)	**254** (214-337)	1222
	03-04	**39.8** (35.5-44.7)	**45.8** (38.9-54.9)	**109** (95.8-126)	**255** (206-267)	**365** (294-424)	1079
	05-06	**37.3** (31.2-44.6)	**42.6** (37.1-50.1)	**108** (94.0-127)	**243** (219-267)	**371** (285-456)	1039
	07-08	**39.1** (31.5-48.5)	**46.8** (39.3-55.5)	**116** (91.8-140)	**257** (188-369)	**444** (269-839)	993
	09-10	**44.1** (39.0-49.9)	**51.7** (44.2-56.7)	**114** (100-129)	**277** (236-311)	**596** (414-778)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.8, 1.5, 0.3, 0.04, 0.04, and 0.04 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterodiol (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**24.2** (20.3-28.9)	**29.9** (25.0-34.7)	**70.5** (59.6-82.1)	**146** (124-177)	**240** (199-320)	2527
	01-02	**33.5** (30.7-36.7)	**37.6** (33.0-42.1)	**79.2** (72.6-87.3)	**149** (136-164)	**224** (197-250)	2794
	03-04	**37.0** (33.6-40.7)	**41.7** (37.9-45.4)	**95.9** (85.6-106)	**194** (171-213)	**294** (247-368)	2594
	05-06	**36.8** (32.7-41.4)	**41.0** (35.9-46.3)	**103** (94.3-114)	**204** (174-219)	**323** (280-424)	2528
	07-08	**37.0** (32.3-42.3)	**42.1** (36.8-48.1)	**103** (87.1-117)	**224** (164-328)	**395** (292-634)	2424
	09-10	**42.3** (38.9-46.1)	**47.1** (44.9-49.8)	**108** (101-117)	**281** (234-333)	**522** (415-602)	2791
Age group							
6-11 years	99-00	**27.0** (18.6-39.3)	**33.7** (21.8-43.7)	**62.7** (43.0-108)	**168** (81.6-290)	**290** (150-411)	327
	01-02	**38.1** (32.5-44.7)	**39.3** (30.8-53.1)	**78.3** (66.6-103)	**188** (147-244)	**304** (242-389)	396
	03-04	**44.7** (37.4-53.5)	**46.6** (38.5-58.3)	**93.3** (73.9-125)	**177** (128-205)	**215** (181-413)	341
	05-06	**36.6** (28.9-46.4)	**37.8** (32.3-46.5)	**75.6** (60.9-105)	**156** (109-219)	**223** (165-326)	351
	07-08	**47.2** (37.5-59.4)	**48.0** (38.0-65.2)	**86.3** (67.9-178)	**230** (181-297)	**335** (230-854)	360
	09-10	**52.6** (45.0-61.4)	**54.3** (39.8-64.5)	**104** (79.5-139)	**235** (145-335)	**336** (239-413)	370
12-19 years	99-00	**20.1** (16.7-24.2)	**24.1** (19.6-30.1)	**55.1** (42.6-71.7)	**99.5** (91.5-116)	**158** (121-177)	744
	01-02	**27.2** (23.3-31.8)	**28.7** (24.9-34.9)	**62.7** (54.9-71.0)	**104** (84.2-139)	**152** (111-225)	744
	03-04	**33.8** (30.3-37.7)	**34.8** (33.2-38.8)	**67.6** (64.1-73.9)	**130** (107-164)	**221** (138-324)	729
	05-06	**29.0** (25.2-33.3)	**31.4** (27.8-36.1)	**68.8** (57.7-80.7)	**131** (113-160)	**167** (160-216)	693
	07-08	**28.7** (22.3-36.9)	**33.8** (25.1-43.3)	**73.4** (52.9-99.3)	**131** (100-207)	**207** (128-280)	375
	09-10	**35.3** (29.5-42.1)	**37.8** (29.7-44.1)	**81.7** (66.9-101)	**170** (111-303)	**306** (170-763)	447
20 years and older	99-00	**24.7** (20.6-29.5)	**30.6** (26.0-34.8)	**73.0** (62.5-84.5)	**157** (129-184)	**242** (199-344)	1456
	01-02	**34.2** (30.3-38.5)	**39.6** (32.5-45.3)	**84.1** (73.8-93.3)	**152** (136-169)	**224** (193-250)	1654
	03-04	**36.7** (32.5-41.4)	**42.0** (37.1-47.8)	**103** (91.8-111)	**205** (173-239)	**327** (256-431)	1524
	05-06	**38.2** (33.1-44.0)	**43.1** (36.4-49.4)	**111** (96.0-128)	**216** (187-242)	**358** (291-475)	1484
	07-08	**37.5** (32.2-43.7)	**42.5** (36.8-49.9)	**109** (90.7-134)	**242** (167-372)	**447** (328-718)	1689
	09-10	**42.6** (39.0-46.4)	**48.3** (46.0-51.1)	**113** (103-128)	**303** (252-355)	**579** (461-747)	1974
Gender							
Males	99-00	**19.8** (15.4-25.4)	**25.4** (20.0-31.4)	**55.1** (46.4-64.2)	**122** (94.6-168)	**199** (145-282)	1206
	01-02	**28.7** (26.0-31.7)	**31.4** (27.0-36.8)	**71.3** (64.2-78.0)	**136** (114-160)	**212** (179-259)	1375
	03-04	**31.1** (27.5-35.0)	**34.8** (32.3-38.5)	**78.0** (68.8-92.7)	**165** (128-211)	**249** (187-361)	1244
	05-06	**32.5** (26.7-39.5)	**34.2** (29.5-41.1)	**90.9** (75.2-102)	**192** (147-235)	**311** (218-490)	1252
	07-08	**27.9** (23.9-32.6)	**33.0** (28.5-38.6)	**79.3** (72.4-87.1)	**164** (122-234)	**259** (172-499)	1198
	09-10	**34.2** (27.9-42.0)	**39.0** (33.0-45.6)	**80.9** (69.7-103)	**197** (150-253)	**345** (235-494)	1376
Females	99-00	**29.3** (25.0-34.4)	**35.4** (29.5-41.6)	**85.2** (74.5-92.3)	**165** (141-201)	**321** (226-370)	1321
	01-02	**38.9** (34.9-43.3)	**43.9** (39.3-48.7)	**88.3** (74.7-102)	**157** (139-174)	**235** (180-304)	1419
	03-04	**43.6** (38.3-49.7)	**49.0** (43.4-57.7)	**109** (98.8-123)	**215** (178-270)	**377** (278-443)	1350
	05-06	**41.4** (36.1-47.4)	**48.2** (41.8-55.7)	**116** (98.0-131)	**210** (183-231)	**376** (235-470)	1276
	07-08	**48.4** (40.6-57.6)	**53.2** (44.2-62.9)	**128** (105-154)	**300** (215-388)	**529** (372-759)	1226
	09-10	**52.1** (46.7-58.1)	**59.4** (49.4-66.2)	**139** (121-156)	**384** (311-450)	**694** (526-938)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterodiol (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**19.6** (17.3-22.2)	**23.5** (19.7-28.7)	**60.6** (49.8-77.7)	**134** (114-154)	**193** (154-227)	791
	01-02	**28.7** (24.5-33.7)	**31.0** (27.0-37.3)	**64.1** (55.0-77.5)	**133** (94.4-183)	**223** (143-337)	679
	03-04	**29.9** (23.8-37.4)	**34.0** (26.5-42.8)	**74.1** (62.0-101)	**176** (118-234)	**241** (189-364)	653
	05-06	**34.4** (28.3-41.8)	**35.3** (30.7-40.0)	**84.6** (71.2-110)	**200** (145-271)	**315** (221-515)	634
	07-08	**27.7** (24.5-31.3)	**29.5** (23.9-33.8)	**75.9** (61.3-88.2)	**169** (124-198)	**240** (178-387)	520
	09-10	**29.3** (25.8-33.3)	**33.6** (29.5-38.0)	**72.3** (61.4-82.7)	**157** (116-193)	**265** (193-351)	604
Non-Hispanic blacks	99-00	**16.6** (13.9-19.7)	**18.8** (14.4-22.9)	**47.3** (37.7-55.8)	**113** (85.9-145)	**169** (131-272)	608
	01-02	**24.5** (19.7-30.6)	**27.0** (22.6-33.3)	**57.5** (48.2-73.2)	**117** (92.2-143)	**157** (118-246)	706
	03-04	**28.6** (24.5-33.4)	**30.4** (26.1-36.1)	**68.3** (53.4-87.5)	**126** (96.3-191)	**203** (153-227)	699
	05-06	**24.3** (20.5-28.9)	**25.3** (22.1-30.4)	**68.6** (50.3-86.0)	**125** (110-147)	**190** (139-245)	662
	07-08	**26.6** (20.8-34.0)	**30.0** (23.6-38.0)	**62.9** (51.9-80.8)	**139** (102-191)	**257** (156-459)	562
	09-10	**26.1** (22.1-30.8)	**29.7** (25.5-35.9)	**73.9** (56.7-88.3)	**153** (115-191)	**252** (191-339)	533
Non-Hispanic whites	99-00	**28.6** (24.3-33.6)	**34.4** (28.9-39.3)	**75.8** (65.3-87.2)	**163** (130-197)	**252** (203-363)	915
	01-02	**35.3** (31.6-39.4)	**40.9** (34.3-46.8)	**83.3** (74.7-90.3)	**152** (136-173)	**225** (189-275)	1222
	03-04	**39.3** (34.4-44.8)	**45.5** (38.4-53.0)	**105** (90.2-116)	**202** (168-234)	**299** (244-374)	1079
	05-06	**39.2** (33.3-46.1)	**45.0** (39.4-50.2)	**111** (96.2-124)	**210** (175-235)	**331** (277-439)	1039
	07-08	**40.7** (32.7-50.6)	**46.4** (38.6-56.7)	**109** (86.3-138)	**240** (154-384)	**424** (257-802)	993
	09-10	**49.5** (43.6-56.1)	**53.5** (48.3-59.0)	**123** (106-140)	**325** (252-384)	**572** (414-766)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterolactone (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**239** (200-286)	**315** (245-381)	**726** (595-879)	**1970** (1440-2370)	**2800** (2500-3140)	2548
	01-02	**259** (233-287)	**350** (314-389)	**807** (739-873)	**1590** (1440-1820)	**2720** (1870-3430)	2794
	03-04	**298** (265-334)	**395** (331-464)	**900** (819-969)	**1790** (1560-2040)	**2620** (2360-2880)	2594
	05-06	**283** (245-327)	**385** (338-460)	**935** (824-1060)	**1850** (1710-2040)	**2880** (2480-3160)	2528
	07-08	**242** (211-277)	**311** (263-371)	**876** (741-1010)	**1740** (1480-2050)	**2910** (2170-3320)	2424
	09-10	**215** (193-240)	**267** (229-306)	**734** (659-853)	**1760** (1490-2090)	**2690** (2220-3160)	2792
Age group							
6-11 years	99-00	**308** (219-432)	**356** (243-474)	**721** (520-1320)	**1730** (973-2840)	**2840** (1700-3590)	331
	01-02	**288** (245-339)	**329** (271-412)	**680** (566-794)	**1380** (929-1620)	**2200** (1420-2550)	396
	03-04	**384** (287-513)	**414** (299-567)	**926** (589-1190)	**1660** (1140-2280)	**2360** (1700-3440)	341
	05-06	**300** (242-373)	**399** (280-546)	**851** (667-984)	**1390** (1000-1770)	**1910** (1390-2460)	351
	07-08	**255** (203-320)	**314** (247-418)	**706** (547-882)	**1340** (897-1610)	**1730** (1150-2600)	360
	09-10	**255** (206-316)	**275** (209-346)	**666** (552-749)	**1480** (1180-1720)	**1870** (1500-2870)	371
12-19 years	99-00	**250** (191-327)	**317** (242-410)	**672** (454-888)	**1760** (973-2480)	**2920** (1950-4330)	746
	01-02	**267** (231-308)	**321** (255-399)	**729** (617-856)	**1480** (1230-1800)	**2180** (1560-3440)	744
	03-04	**314** (267-369)	**400** (333-468)	**866** (736-1050)	**1690** (1410-2080)	**2620** (2000-2890)	729
	05-06	**292** (245-348)	**393** (350-492)	**877** (681-1010)	**1620** (1470-1800)	**2360** (1780-2960)	693
	07-08	**250** (203-309)	**281** (217-444)	**832** (645-1000)	**1450** (1100-2030)	**2390** (1450-3320)	375
	09-10	**194** (154-244)	**229** (181-318)	**632** (479-735)	**1340** (812-2040)	**2190** (1340-2960)	447
20 years and older	99-00	**230** (193-274)	**310** (242-375)	**734** (599-888)	**2000** (1490-2390)	**2790** (2510-3540)	1471
	01-02	**254** (223-289)	**357** (314-397)	**835** (760-914)	**1660** (1460-1890)	**2840** (1890-3610)	1654
	03-04	**286** (253-324)	**394** (311-465)	**900** (824-960)	**1820** (1560-2060)	**2630** (2350-3100)	1524
	05-06	**280** (238-330)	**379** (332-460)	**958** (843-1110)	**1970** (1760-2310)	**3130** (2540-3570)	1484
	07-08	**239** (205-280)	**311** (258-374)	**923** (746-1090)	**1800** (1480-2370)	**3000** (2210-4030)	1689
	09-10	**215** (189-243)	**272** (228-320)	**768** (666-930)	**1850** (1590-2140)	**2770** (2350-3690)	1974
Gender							
Males	99-00	**254** (212-304)	**351** (266-418)	**778** (579-1050)	**2000** (1580-2400)	**2730** (2430-3350)	1219
	01-02	**262** (233-295)	**340** (314-387)	**873** (769-957)	**1810** (1490-2470)	**3050** (1990-4070)	1375
	03-04	**314** (280-351)	**425** (376-477)	**938** (840-1060)	**1760** (1540-2050)	**2620** (2060-3230)	1244
	05-06	**301** (247-368)	**421** (341-515)	**1000** (854-1150)	**2020** (1730-2330)	**3130** (2660-3340)	1252
	07-08	**245** (215-278)	**321** (261-389)	**882** (714-1030)	**1620** (1420-2050)	**2700** (2000-3360)	1198
	09-10	**210** (173-256)	**254** (207-324)	**718** (583-870)	**1670** (1300-2110)	**2680** (1850-4060)	1377
Females	99-00	**226** (180-284)	**287** (236-339)	**684** (560-799)	**1890** (1200-2460)	**2830** (2100-4330)	1329
	01-02	**255** (226-288)	**357** (298-397)	**759** (680-840)	**1450** (1190-1700)	**2200** (1710-2950)	1419
	03-04	**283** (233-343)	**371** (278-465)	**859** (706-984)	**1810** (1440-2170)	**2630** (2210-3440)	1350
	05-06	**267** (220-324)	**359** (318-445)	**874** (716-1030)	**1770** (1440-2020)	**2660** (2040-3270)	1276
	07-08	**240** (196-293)	**301** (234-394)	**875** (747-1030)	**1870** (1510-2200)	**2920** (2160-3510)	1226
	09-10	**220** (196-247)	**281** (237-325)	**749** (662-868)	**1850** (1520-2220)	**2690** (2350-3200)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.6, 1.9, 0.3, 0.1, 0.1, and 0.1 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterolactone (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**212** (169-265)	**281** (230-335)	**631** (539-732)	**1650** (950-2210)	**2690** (2380-3350)	813
	01-02	**275** (221-342)	**347** (312-395)	**778** (671-913)	**1520** (1090-1920)	**2340** (1610-2990)	679
	03-04	**275** (239-316)	**376** (316-435)	**849** (744-958)	**1560** (1320-1860)	**2240** (1860-3100)	653
	05-06	**359** (311-415)	**420** (364-515)	**914** (750-1080)	**1710** (1340-2060)	**2660** (1950-3180)	634
	07-08	**227** (182-283)	**320** (240-385)	**747** (634-876)	**1520** (1300-1740)	**2070** (1650-2840)	520
	09-10	**198** (166-237)	**265** (215-303)	**642** (524-752)	**1290** (981-1640)	**1930** (1380-2280)	604
Non-Hispanic blacks	99-00	**262** (196-349)	**363** (293-440)	**759** (629-925)	**1730** (1000-2420)	**2500** (1870-3280)	605
	01-02	**278** (226-342)	**418** (341-479)	**769** (686-853)	**1450** (1160-1840)	**2000** (1540-2420)	706
	03-04	**328** (285-378)	**437** (362-526)	**942** (768-1110)	**1580** (1360-1820)	**2280** (1880-2640)	699
	05-06	**276** (237-322)	**411** (346-483)	**924** (827-1050)	**1660** (1430-2040)	**2620** (2220-3080)	662
	07-08	**252** (185-343)	**362** (272-452)	**902** (700-1120)	**1820** (1320-2100)	**2350** (1920-3160)	562
	09-10	**187** (140-250)	**267** (180-346)	**777** (543-945)	**1410** (1150-1810)	**1920** (1580-2340)	534
Non-Hispanic whites	99-00	**247** (196-311)	**317** (240-403)	**752** (616-955)	**2040** (1600-2450)	**3000** (2460-3880)	917
	01-02	**267** (235-303)	**357** (307-397)	**834** (750-923)	**1630** (1420-1890)	**2780** (1820-3740)	1222
	03-04	**299** (254-352)	**396** (299-488)	**900** (789-996)	**1810** (1510-2140)	**2680** (2310-3230)	1079
	05-06	**274** (228-329)	**373** (318-460)	**923** (745-1080)	**1800** (1610-2020)	**2910** (2360-3220)	1039
	07-08	**265** (218-322)	**328** (266-409)	**926** (733-1130)	**1790** (1420-2580)	**3030** (2050-4310)	993
	09-10	**236** (210-265)	**293** (244-334)	**765** (660-899)	**1900** (1590-2310)	**2990** (2210-4300)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.6, 1.9, 0.3, 0.1, 0.1, and 0.1 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterolactone (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**218** (184-260)	**284** (247-336)	**733** (613-869)	**1580** (1290-1830)	**2250** (1860-2830)	2548
	01-02	**243** (220-268)	**324** (293-360)	**756** (668-858)	**1430** (1250-1580)	**2120** (1720-2450)	2794
	03-04	**279** (245-317)	**371** (324-430)	**810** (697-911)	**1590** (1350-1910)	**2400** (2000-2890)	2594
	05-06	**276** (237-321)	**382** (329-448)	**856** (775-975)	**1640** (1480-1840)	**2650** (2240-3380)	2528
	07-08	**243** (211-281)	**345** (292-402)	**826** (733-946)	**1650** (1390-2050)	**2730** (2080-3510)	2424
	09-10	**230** (206-258)	**301** (268-342)	**779** (695-882)	**1800** (1540-2090)	**2820** (2400-3420)	2791
Age group							
6-11 years	99-00	**315** (238-416)	**384** (266-435)	**704** (495-1110)	**1580** (1110-2010)	**2100** (1580-3040)	331
	01-02	**327** (274-391)	**349** (263-478)	**738** (603-994)	**1420** (1140-1800)	**2020** (1420-2940)	396
	03-04	**409** (310-540)	**470** (354-632)	**904** (669-1150)	**1480** (1090-2420)	**2300** (1480-2690)	341
	05-06	**331** (268-408)	**459** (325-528)	**778** (637-1010)	**1480** (1130-1750)	**1820** (1430-2510)	351
	07-08	**313** (255-384)	**402** (309-484)	**766** (725-824)	**1310** (1020-1590)	**1650** (1310-2220)	360
	09-10	**346** (283-424)	**416** (323-471)	**753** (607-904)	**1440** (1100-2000)	**2290** (1440-3340)	370
12-19 years	99-00	**169** (133-214)	**210** (172-264)	**486** (371-615)	**1150** (742-1540)	**1850** (1310-2350)	746
	01-02	**206** (178-239)	**255** (223-293)	**619** (466-753)	**1110** (869-1480)	**1500** (1140-2080)	744
	03-04	**235** (202-273)	**285** (255-307)	**631** (533-744)	**1230** (993-1350)	**1510** (1240-2230)	729
	05-06	**216** (184-254)	**297** (255-336)	**627** (514-701)	**1010** (853-1170)	**1410** (1150-1700)	693
	07-08	**192** (149-248)	**273** (197-373)	**540** (477-676)	**936** (708-1220)	**1620** (936-3420)	375
	09-10	**182** (147-226)	**228** (176-295)	**514** (362-809)	**1140** (817-1530)	**1740** (1140-3160)	447
20 years and older	99-00	**217** (181-261)	**288** (249-350)	**785** (653-923)	**1640** (1330-1890)	**2310** (1890-3110)	1471
	01-02	**240** (213-271)	**331** (300-375)	**786** (672-915)	**1460** (1300-1630)	**2180** (1890-2470)	1654
	03-04	**274** (236-318)	**377** (316-448)	**823** (697-937)	**1700** (1430-1980)	**2480** (2040-3100)	1524
	05-06	**281** (236-335)	**399** (326-491)	**942** (831-1040)	**1730** (1570-2200)	**2930** (2350-3530)	1484
	07-08	**246** (210-287)	**350** (291-418)	**906** (784-1040)	**1810** (1420-2360)	**2820** (2320-3570)	1689
	09-10	**229** (203-257)	**300** (271-346)	**828** (727-939)	**1920** (1640-2350)	**3070** (2530-3760)	1974
Gender							
Males	99-00	**199** (170-234)	**263** (228-309)	**664** (490-828)	**1380** (1200-1710)	**2030** (1780-2480)	1219
	01-02	**213** (191-238)	**287** (255-316)	**682** (601-764)	**1350** (1090-1580)	**1980** (1570-2550)	1375
	03-04	**245** (215-280)	**330** (288-372)	**729** (676-808)	**1330** (1160-1580)	**2040** (1590-2380)	1244
	05-06	**243** (196-300)	**336** (279-418)	**800** (707-897)	**1500** (1270-1680)	**2200** (1890-2480)	1252
	07-08	**206** (176-241)	**303** (251-358)	**715** (594-859)	**1410** (1080-1850)	**2140** (1560-3060)	1198
	09-10	**192** (157-235)	**261** (210-310)	**650** (543-766)	**1440** (1170-1670)	**2300** (1540-3220)	1376
Females	99-00	**238** (191-297)	**303** (260-379)	**819** (662-968)	**1720** (1390-2010)	**2550** (1940-3390)	1329
	01-02	**274** (241-312)	**356** (313-407)	**833** (710-1000)	**1490** (1320-1670)	**2150** (1890-2410)	1419
	03-04	**314** (257-385)	**414** (327-510)	**866** (704-1090)	**1840** (1460-2280)	**2840** (2220-3910)	1350
	05-06	**313** (261-375)	**419** (337-529)	**954** (809-1060)	**1840** (1550-2320)	**3100** (2350-4580)	1276
	07-08	**285** (234-346)	**396** (327-469)	**966** (843-1060)	**1910** (1560-2410)	**3040** (2730-3740)	1226
	09-10	**274** (244-309)	**362** (305-416)	**907** (789-1100)	**2200** (1730-2810)	**3570** (2800-4200)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterolactone (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**194** (165-228)	**254** (225-282)	**605** (519-695)	**1340** (969-1740)	**2100** (1620-2790)	813
	01-02	**259** (213-314)	**362** (296-409)	**730** (586-905)	**1240** (1010-1490)	**1630** (1240-2540)	679
	03-04	**248** (217-282)	**350** (310-403)	**724** (657-826)	**1320** (1020-1560)	**1820** (1460-2170)	653
	05-06	**324** (267-393)	**379** (315-471)	**773** (679-953)	**1560** (1290-1680)	**2060** (1630-2560)	634
	07-08	**223** (185-268)	**312** (267-379)	**733** (642-871)	**1330** (1110-1580)	**1860** (1620-2160)	520
	09-10	**208** (174-249)	**284** (214-322)	**624** (505-728)	**1270** (1090-1460)	**1870** (1460-2130)	604
Non-Hispanic blacks	99-00	**168** (125-226)	**214** (173-274)	**546** (411-732)	**1130** (874-1450)	**1590** (1120-2560)	605
	01-02	**195** (155-245)	**302** (257-331)	**562** (470-629)	**985** (821-1130)	**1490** (1080-1730)	706
	03-04	**233** (197-274)	**303** (276-347)	**621** (512-707)	**1050** (917-1350)	**1550** (1170-2220)	699
	05-06	**193** (167-223)	**286** (252-331)	**630** (556-729)	**1120** (967-1230)	**1490** (1220-1650)	662
	07-08	**195** (144-264)	**291** (191-408)	**659** (564-741)	**1220** (993-1360)	**1480** (1350-2060)	562
	09-10	**150** (113-200)	**256** (183-328)	**539** (457-659)	**927** (757-1160)	**1310** (1000-1720)	533
Non-Hispanic whites	99-00	**241** (194-300)	**323** (279-388)	**828** (674-997)	**1780** (1390-2020)	**2490** (1930-3340)	917
	01-02	**264** (232-301)	**339** (299-393)	**833** (719-944)	**1530** (1340-1880)	**2410** (1940-2800)	1222
	03-04	**294** (246-353)	**399** (326-488)	**836** (707-980)	**1660** (1330-2040)	**2500** (1990-3350)	1079
	05-06	**288** (238-347)	**403** (326-500)	**926** (809-1050)	**1700** (1500-2200)	**2930** (2230-3710)	1039
	07-08	**276** (225-337)	**386** (318-467)	**911** (736-1100)	**1870** (1370-2730)	**2850** (2200-3640)	993
	09-10	**264** (233-299)	**329** (290-385)	**895** (779-1030)	**2140** (1640-2780)	**3420** (2740-3990)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Equol (1999 – 2010)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**8.37** (7.21-9.72)	**8.02** (6.27-9.90)	**17.2** (15.2-19.8)	**35.0** (28.9-41.6)	**53.7** (40.1-74.2)	2182
	01-02	**9.17** (7.76-10.8)	**9.00** (7.40-10.5)	**19.6** (16.6-23.5)	**42.1** (34.3-51.5)	**73.5** (53.6-89.2)	2794
	03-04	**8.02** (7.07-9.10)	**8.00** (6.80-9.40)	**18.2** (15.2-20.8)	**36.6** (31.3-40.0)	**64.9** (45.4-97.9)	2590
	05-06	**8.40** (7.63-9.24)	**8.61** (7.89-9.17)	**18.1** (16.4-20.4)	**37.6** (33.9-41.8)	**64.5** (54.8-85.3)	2527
	07-08	**7.29** (6.21-8.57)	**7.18** (6.18-8.44)	**15.3** (12.5-18.5)	**30.7** (24.5-43.2)	**65.9** (50.7-131)	2424
	09-10	**7.82** (6.91-8.85)	**7.39** (6.59-8.34)	**17.1** (14.9-18.9)	**38.0** (33.9-42.4)	**68.6** (52.4-95.6)	2792
Age group							
6-11 years	99-00	**10.5** (7.65-14.3)	**11.7** (5.43-18.6)	**24.9** (17.5-29.5)	**34.4** (29.5-53.3)	**56.1** (30.1-149)	272
	01-02	**12.2** (10.2-14.6)	**13.7** (11.1-16.2)	**26.2** (17.9-37.9)	**50.4** (35.0-84.3)	**85.4** (50.4-159)	396
	03-04	**12.4** (9.71-15.8)	**12.1** (8.40-17.8)	**24.4** (20.1-31.2)	**46.7** (33.5-82.3)	**85.8** (44.9-118)	341
	05-06	**13.3** (11.3-15.7)	**13.5** (12.1-16.8)	**26.5** (20.8-34.1)	**45.6** (39.3-69.6)	**70.3** (44.7-144)	351
	07-08	**10.9** (8.38-14.3)	**11.3** (8.60-13.2)	**22.0** (15.8-27.5)	**55.9** (24.2-77.8)	**73.3** (59.5-115)	360
	09-10	**13.4** (9.85-18.4)	**12.7** (9.01-16.7)	**28.5** (22.6-41.8)	**68.0** (45.3-179)	**242** (68.0-598)	371
12-19 years	99-00	**10.9** (8.64-13.8)	**10.8** (8.52-13.4)	**22.3** (16.0-34.9)	**42.9** (34.1-71.3)	**71.6** (48.1-210)	657
	01-02	**10.2** (8.50-12.1)	**10.5** (8.20-12.5)	**20.5** (16.8-24.8)	**43.1** (30.1-56.1)	**70.0** (46.3-99.2)	744
	03-04	**10.6** (8.97-12.4)	**10.5** (8.70-12.2)	**22.6** (19.3-26.4)	**39.9** (34.8-45.1)	**61.9** (45.1-113)	729
	05-06	**11.6** (10.3-13.0)	**11.4** (9.25-12.3)	**23.2** (20.3-28.8)	**46.3** (37.2-64.0)	**81.8** (50.1-146)	693
	07-08	**8.47** (7.19-9.98)	**7.91** (6.79-9.30)	**16.0** (12.8-19.0)	**32.7** (24.5-43.2)	**65.6** (33.6-148)	375
	09-10	**11.4** (8.90-14.6)	**9.60** (7.57-14.1)	**24.6** (19.6-29.6)	**48.0** (35.9-112)	**220** (69.4-701)	447
20 years and older	99-00	**7.79** (6.79-8.94)	**7.43** (5.71-8.85)	**16.0** (13.6-18.1)	**33.1** (24.4-39.7)	**52.2** (36.3-93.9)	1253
	01-02	**8.70** (7.29-10.4)	**8.00** (6.20-10.2)	**18.6** (15.0-22.3)	**41.3** (34.1-47.4)	**73.5** (53.9-89.0)	1654
	03-04	**7.28** (6.37-8.33)	**7.20** (6.00-8.70)	**16.0** (14.2-19.2)	**33.9** (28.2-38.9)	**63.0** (41.3-121)	1520
	05-06	**7.58** (6.82-8.42)	**7.57** (7.01-8.30)	**16.6** (14.9-18.2)	**33.6** (29.1-42.6)	**58.1** (50.6-89.0)	1483
	07-08	**6.82** (5.70-8.17)	**6.75** (5.70-7.98)	**14.3** (11.6-18.3)	**28.9** (23.6-41.9)	**65.8** (47.7-135)	1689
	09-10	**6.97** (6.07-8.00)	**6.72** (5.78-7.75)	**15.0** (13.1-17.1)	**33.2** (28.4-38.3)	**57.7** (44.6-75.4)	1974
Gender							
Males	99-00	**9.15** (7.37-11.4)	**8.44** (6.36-11.2)	**19.0** (15.9-24.0)	**35.6** (29.2-54.8)	**71.3** (39.7-166)	1042
	01-02	**9.41** (7.99-11.1)	**9.20** (7.70-10.8)	**20.1** (16.7-26.1)	**43.1** (32.4-53.1)	**61.7** (51.8-81.5)	1375
	03-04	**8.56** (7.54-9.72)	**8.70** (7.20-10.2)	**19.0** (15.9-21.6)	**38.0** (31.9-44.2)	**72.6** (45.4-100)	1240
	05-06	**9.13** (7.99-10.4)	**9.42** (8.16-10.8)	**20.0** (16.7-23.8)	**39.4** (33.8-45.3)	**63.1** (52.0-88.1)	1252
	07-08	**7.58** (6.40-8.97)	**7.74** (6.62-8.80)	**15.5** (12.5-18.2)	**32.7** (24.5-41.9)	**65.6** (47.7-133)	1198
	09-10	**8.20** (7.14-9.42)	**8.18** (6.86-9.67)	**18.4** (15.2-21.3)	**39.3** (31.4-48.0)	**70.7** (53.4-112)	1377
Females	99-00	**7.70** (6.79-8.75)	**7.57** (5.79-9.04)	**15.6** (12.7-18.9)	**33.6** (26.7-37.7)	**48.2** (37.1-62.9)	1140
	01-02	**8.94** (7.38-10.8)	**8.60** (6.70-10.7)	**19.0** (15.6-22.9)	**41.6** (33.3-51.5)	**79.8** (56.6-122)	1419
	03-04	**7.55** (6.44-8.84)	**7.30** (6.20-9.00)	**16.9** (14.7-19.8)	**33.8** (28.3-40.0)	**60.3** (42.5-116)	1350
	05-06	**7.75** (6.85-8.78)	**7.57** (6.87-8.37)	**16.7** (15.0-18.0)	**35.6** (30.9-43.1)	**69.2** (51.7-125)	1275
	07-08	**7.03** (5.84-8.47)	**6.75** (5.85-7.85)	**15.1** (12.3-19.0)	**30.0** (24.4-48.3)	**76.3** (49.5-163)	1226
	09-10	**7.47** (6.33-8.81)	**6.75** (5.70-7.85)	**15.4** (13.1-18.5)	**36.4** (29.4-45.3)	**65.2** (46.4-130)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 3.0, 3.3, 0.3, 0.06, 0.06, and 0.06 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Equol (1999 – 2010)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**5.24** (4.77-5.76)	**4.51** (3.65-5.18)	**9.48** (7.96-10.3)	**18.5** (14.5-22.6)	**30.9** (21.6-48.4)	726
	01-02	**7.22** (6.04-8.62)	**6.50** (4.40-9.10)	**14.2** (11.3-20.1)	**31.4** (21.1-41.0)	**42.4** (38.1-60.2)	679
	03-04	**6.08** (5.08-7.28)	**5.70** (4.70-6.80)	**12.5** (9.80-15.4)	**26.1** (18.1-39.7)	**43.6** (34.3-88.2)	653
	05-06	**6.04** (5.31-6.87)	**6.13** (5.28-7.35)	**13.3** (11.2-14.7)	**25.2** (19.6-33.4)	**47.6** (33.6-67.1)	634
	07-08	**5.52** (5.02-6.07)	**5.15** (4.71-5.86)	**11.4** (10.1-14.0)	**23.2** (20.2-30.3)	**39.9** (30.7-60.9)	520
	09-10	**5.07** (4.51-5.71)	**5.13** (4.45-5.74)	**11.1** (8.72-13.0)	**20.2** (17.1-29.7)	**46.3** (29.7-75.4)	604
Non-Hispanic blacks	99-00	**6.73** (5.20-8.71)	**6.24** (3.86-10.0)	**15.1** (12.7-17.6)	**27.6** (19.4-35.6)	**36.4** (28.9-49.4)	514
	01-02	**7.15** (6.06-8.43)	**6.10** (4.70-7.60)	**14.7** (12.0-18.7)	**30.9** (22.8-41.9)	**45.7** (36.1-90.5)	706
	03-04	**7.35** (6.16-8.79)	**7.90** (6.00-9.60)	**16.5** (14.2-18.3)	**32.0** (25.1-37.5)	**47.0** (37.8-68.2)	696
	05-06	**6.96** (5.89-8.22)	**6.37** (5.44-7.95)	**15.1** (11.7-20.2)	**30.1** (23.8-39.4)	**48.8** (38.7-64.9)	662
	07-08	**6.73** (5.28-8.59)	**6.69** (5.17-8.19)	**15.2** (11.9-18.5)	**31.3** (21.7-50.7)	**72.0** (36.1-402)	562
	09-10	**5.59** (4.98-6.27)	**5.98** (5.37-6.48)	**12.2** (10.8-14.2)	**25.0** (21.6-31.0)	**43.3** (32.4-53.7)	534
Non-Hispanic whites	99-00	**9.26** (7.80-11.0)	**8.98** (6.73-11.9)	**19.0** (16.1-22.8)	**36.2** (30.1-45.4)	**56.1** (42.1-89.4)	758
	01-02	**9.91** (7.95-12.4)	**10.0** (7.30-12.6)	**22.0** (17.4-27.4)	**44.4** (35.1-57.5)	**74.4** (55.1-107)	1222
	03-04	**8.52** (7.26-10.0)	**8.80** (7.10-10.3)	**19.3** (15.4-23.0)	**37.7** (31.7-44.2)	**73.1** (46.7-120)	1078
	05-06	**9.05** (8.08-10.1)	**9.49** (8.47-10.4)	**19.4** (16.6-23.2)	**39.2** (33.9-45.1)	**69.2** (52.2-130)	1038
	07-08	**8.01** (6.45-9.93)	**8.19** (6.59-9.49)	**16.1** (12.5-21.7)	**32.7** (24.1-55.9)	**79.5** (47.7-152)	993
	09-10	**9.45** (8.04-11.1)	**9.15** (7.87-10.2)	**19.3** (17.5-22.4)	**41.3** (35.4-48.7)	**75.4** (52.4-189)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 3.0, 3.3, 0.3, 0.06, 0.06, and 0.06 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Equol (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**7.70** (6.82-8.70)	**7.96** (6.87-9.35)	**16.2** (13.2-18.6)	**30.6** (26.9-35.1)	**50.3** (41.8-67.3)	2182
	01-02	**8.60** (7.26-10.2)	**7.98** (6.62-9.76)	**17.6** (14.8-21.8)	**37.8** (30.3-46.3)	**62.6** (50.0-85.0)	2794
	03-04	**7.52** (6.83-8.29)	**7.29** (6.56-8.18)	**14.6** (13.3-15.7)	**27.8** (24.7-31.9)	**50.6** (39.9-75.0)	2590
	05-06	**8.18** (7.33-9.14)	**7.92** (7.01-8.76)	**15.9** (14.2-17.4)	**32.7** (29.9-35.1)	**69.1** (48.4-105)	2527
	07-08	**7.33** (6.34-8.48)	**6.91** (6.13-7.86)	**14.4** (12.2-16.7)	**28.9** (23.5-37.4)	**60.9** (40.5-93.1)	2424
	09-10	**8.38** (7.52-9.33)	**7.70** (6.80-8.69)	**16.6** (15.3-18.1)	**36.3** (30.5-44.5)	**73.4** (54.2-122)	2791
Age group							
6-11 years	99-00	**10.3** (7.83-13.5)	**11.4** (7.46-16.3)	**22.6** (14.7-27.2)	**32.7** (25.5-46.0)	**47.8** (32.7-150)	272
	01-02	**13.9** (11.2-17.2)	**14.0** (10.6-17.0)	**28.8** (19.6-39.8)	**54.4** (34.9-99.8)	**88.2** (56.8-186)	396
	03-04	**13.2** (10.9-15.9)	**13.2** (9.19-17.5)	**24.2** (20.6-28.0)	**41.6** (35.2-64.1)	**93.5** (45.4-117)	341
	05-06	**14.7** (12.6-17.1)	**15.3** (13.8-17.4)	**26.2** (21.2-34.4)	**48.0** (40.6-70.3)	**88.9** (55.4-267)	351
	07-08	**13.4** (10.8-16.6)	**13.1** (10.6-15.2)	**22.6** (16.9-32.8)	**45.2** (28.8-84.4)	**72.8** (45.8-199)	360
	09-10	**18.3** (13.5-24.7)	**15.7** (11.5-19.3)	**42.0** (28.1-54.1)	**84.1** (63.5-183)	**232** (98.4-498)	370
12-19 years	99-00	**7.61** (6.17-9.39)	**8.02** (6.72-9.29)	**14.0** (11.4-20.4)	**27.5** (20.8-38.3)	**47.4** (27.5-149)	657
	01-02	**7.83** (6.68-9.17)	**7.77** (6.29-9.13)	**17.4** (14.9-19.2)	**31.9** (25.3-41.7)	**54.3** (33.0-76.7)	744
	03-04	**7.91** (6.59-9.49)	**8.11** (6.80-9.09)	**14.5** (11.8-17.5)	**30.1** (21.0-38.2)	**40.6** (32.6-66.9)	729
	05-06	**8.61** (7.54-9.83)	**8.03** (7.00-9.21)	**16.3** (13.4-19.0)	**31.8** (25.3-37.6)	**62.0** (37.0-129)	693
	07-08	**6.51** (5.69-7.46)	**5.83** (4.78-6.71)	**12.6** (10.5-16.4)	**28.7** (20.8-35.3)	**50.4** (30.7-72.7)	375
	09-10	**10.7** (8.50-13.5)	**8.95** (7.40-10.3)	**20.6** (15.9-23.3)	**46.3** (31.3-101)	**215** (58.9-919)	447
20 years and older	99-00	**7.45** (6.60-8.41)	**7.63** (6.35-9.22)	**15.3** (12.7-17.7)	**30.8** (25.0-37.2)	**53.2** (41.2-71.8)	1253
	01-02	**8.23** (6.93-9.79)	**7.52** (5.97-9.56)	**16.6** (14.0-20.7)	**36.4** (29.3-42.9)	**58.7** (47.9-85.0)	1654
	03-04	**6.98** (6.30-7.73)	**6.76** (6.05-7.65)	**13.6** (12.5-14.8)	**24.6** (21.9-29.4)	**42.8** (35.7-81.6)	1520
	05-06	**7.60** (6.72-8.59)	**7.43** (6.63-8.21)	**14.1** (12.4-16.4)	**30.1** (23.9-34.9)	**65.9** (42.7-123)	1483
	07-08	**7.00** (5.90-8.31)	**6.64** (5.73-7.57)	**13.2** (11.2-16.2)	**26.4** (21.6-38.4)	**57.7** (38.4-97.0)	1689
	09-10	**7.43** (6.61-8.34)	**6.97** (6.09-8.08)	**15.0** (13.5-16.7)	**29.2** (25.3-34.5)	**54.7** (41.4-75.7)	1974
Gender							
Males	99-00	**7.01** (5.93-8.29)	**7.32** (5.63-8.78)	**13.8** (11.7-17.6)	**29.3** (21.4-41.8)	**54.1** (35.8-81.0)	1042
	01-02	**7.66** (6.39-9.18)	**7.43** (5.81-9.16)	**16.2** (14.0-19.4)	**32.9** (27.9-40.4)	**54.3** (37.8-67.1)	1375
	03-04	**6.71** (6.02-7.47)	**6.63** (5.78-7.29)	**13.3** (11.9-15.5)	**25.7** (23.1-30.3)	**51.1** (37.1-76.7)	1240
	05-06	**7.35** (6.40-8.43)	**7.03** (5.90-8.67)	**14.9** (12.0-18.3)	**31.4** (26.8-34.0)	**57.6** (42.7-83.5)	1252
	07-08	**6.39** (5.52-7.41)	**6.10** (5.28-6.85)	**12.2** (10.6-14.3)	**25.7** (20.4-33.0)	**48.4** (35.3-77.1)	1198
	09-10	**7.49** (6.54-8.59)	**6.90** (5.98-8.20)	**15.7** (14.1-17.3)	**32.4** (25.3-44.1)	**73.4** (44.2-130)	1376
Females	99-00	**8.41** (7.33-9.66)	**8.71** (7.33-10.1)	**17.7** (15.1-20.0)	**31.6** (27.5-37.2)	**46.3** (41.0-56.5)	1140
	01-02	**9.60** (7.99-11.5)	**8.66** (6.97-10.6)	**19.2** (15.7-23.7)	**41.7** (32.3-55.9)	**85.0** (61.7-115)	1419
	03-04	**8.38** (7.39-9.51)	**8.29** (7.03-9.28)	**15.1** (14.0-16.6)	**30.6** (25.0-32.5)	**45.4** (38.7-102)	1350
	05-06	**9.07** (8.04-10.2)	**8.49** (7.90-9.22)	**16.7** (15.3-18.1)	**34.3** (29.9-40.7)	**85.1** (48.4-144)	1275
	07-08	**8.35** (6.98-9.99)	**7.97** (6.83-9.31)	**16.0** (13.4-20.0)	**32.8** (23.7-46.1)	**67.5** (41.6-167)	1226
	09-10	**9.34** (7.98-10.9)	**8.44** (7.24-9.76)	**17.4** (15.1-20.4)	**39.6** (30.7-54.2)	**72.9** (51.6-158)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Equol (creatinine corrected) (1999 – 2010)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**4.89** (4.36-5.47)	**4.73** (3.90-5.27)	**8.85** (8.18-9.91)	**22.3** (16.5-26.8)	**37.1** (25.3-57.6)	726
	01-02	**6.79** (5.82-7.92)	**6.81** (5.55-8.04)	**14.9** (11.7-17.8)	**29.1** (22.9-36.0)	**41.3** (31.4-47.1)	679
	03-04	**5.48** (4.60-6.54)	**4.72** (3.95-5.78)	**10.1** (7.76-13.4)	**24.4** (17.2-30.9)	**35.6** (27.6-102)	653
	05-06	**5.45** (4.84-6.14)	**5.00** (4.37-5.85)	**9.94** (8.80-12.4)	**22.3** (19.3-30.0)	**39.4** (30.0-61.9)	634
	07-08	**5.42** (4.82-6.09)	**4.87** (4.28-5.66)	**10.9** (9.21-12.2)	**20.9** (17.0-26.9)	**34.9** (26.9-60.9)	520
	09-10	**5.33** (4.60-6.18)	**5.00** (4.17-6.16)	**9.49** (8.54-11.2)	**19.6** (15.1-35.6)	**48.5** (30.3-126)	604
Non-Hispanic blacks	99-00	**4.36** (3.41-5.57)	**4.57** (2.94-6.23)	**10.2** (7.96-12.0)	**17.1** (14.8-19.8)	**26.0** (19.6-32.0)	514
	01-02	**5.01** (4.26-5.89)	**4.48** (3.80-5.42)	**11.0** (8.80-13.0)	**22.7** (16.5-29.3)	**35.4** (24.8-46.7)	706
	03-04	**5.23** (4.44-6.16)	**5.28** (4.67-6.10)	**10.3** (8.61-12.3)	**20.2** (17.1-23.8)	**29.4** (23.9-42.3)	696
	05-06	**4.88** (4.11-5.78)	**4.72** (3.55-6.00)	**9.40** (7.54-12.0)	**21.5** (16.8-24.4)	**31.6** (24.4-51.4)	662
	07-08	**5.21** (4.11-6.61)	**4.73** (3.77-6.22)	**9.81** (7.77-12.7)	**19.3** (14.7-28.8)	**50.6** (24.2-314)	562
	09-10	**4.50** (4.03-5.01)	**4.57** (3.80-5.29)	**9.76** (8.00-11.3)	**18.4** (15.6-22.3)	**26.8** (22.8-29.7)	533
Non-Hispanic whites	99-00	**9.13** (7.85-10.6)	**9.51** (7.63-11.2)	**18.0** (15.2-21.6)	**35.4** (29.5-41.3)	**56.5** (46.0-73.0)	758
	01-02	**9.81** (7.93-12.1)	**9.17** (7.06-12.2)	**19.8** (15.4-25.6)	**41.3** (30.7-55.9)	**66.4** (56.8-85.0)	1222
	03-04	**8.40** (7.50-9.41)	**8.17** (7.13-9.19)	**15.6** (14.1-17.1)	**30.6** (25.0-32.8)	**56.8** (38.0-107)	1078
	05-06	**9.51** (8.48-10.7)	**9.17** (8.06-10.5)	**17.1** (15.0-19.4)	**34.5** (31.0-40.6)	**77.7** (48.4-129)	1038
	07-08	**8.33** (6.76-10.3)	**7.94** (6.62-9.61)	**15.7** (12.5-20.4)	**30.7** (23.4-46.1)	**65.2** (38.9-144)	993
	09-10	**10.6** (9.17-12.2)	**9.69** (8.74-10.8)	**20.5** (17.8-22.5)	**44.2** (33.4-60.8)	**84.1** (60.3-187)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Genistein (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**24.4** (19.7-30.3)	**27.0** (22.5-32.8)	**93.6** (75.8-118)	**284** (244-331)	**563** (413-709)	2557
	01-02	**33.0** (30.1-36.2)	**29.0** (26.8-31.8)	**92.5** (77.9-109)	**306** (240-372)	**619** (523-719)	2794
	03-04	**31.1** (29.0-33.3)	**26.2** (23.9-29.7)	**87.8** (78.8-102)	**286** (239-313)	**528** (402-610)	2594
	05-06	**28.7** (25.8-32.0)	**26.0** (20.9-29.7)	**81.0** (73.3-92.4)	**261** (232-308)	**523** (422-591)	2528
	07-08	**31.3** (27.3-35.8)	**25.7** (22.8-28.9)	**89.7** (73.4-109)	**309** (227-411)	**665** (527-999)	2424
	09-10	**32.5** (29.3-36.2)	**28.2** (23.2-33.1)	**102** (88.8-120)	**356** (295-428)	**691** (530-1060)	2792
Age group							
6-11 years	99-00	**27.6** (21.1-36.1)	**31.9** (18.1-42.6)	**104** (67.6-151)	**220** (151-315)	**376** (272-725)	331
	01-02	**39.2** (33.4-46.0)	**31.7** (25.8-39.6)	**94.1** (62.3-158)	**258** (190-426)	**502** (258-830)	396
	03-04	**33.6** (27.8-40.6)	**29.3** (23.1-37.8)	**79.4** (56.7-111)	**193** (146-274)	**351** (207-376)	341
	05-06	**38.6** (29.8-49.9)	**34.6** (25.3-42.5)	**109** (76.6-181)	**367** (252-568)	**629** (367-2390)	351
	07-08	**43.7** (32.6-58.5)	**34.3** (22.1-56.4)	**139** (82.5-194)	**505** (251-763)	**840** (505-2200)	360
	09-10	**46.1** (37.8-56.3)	**38.4** (30.7-46.9)	**167** (96.9-253)	**467** (280-616)	**958** (528-1210)	371
12-19 years	99-00	**43.7** (34.2-55.7)	**45.4** (34.3-60.5)	**138** (93.7-179)	**319** (245-464)	**547** (321-777)	754
	01-02	**34.1** (27.2-42.8)	**29.0** (26.1-32.9)	**90.6** (71.5-113)	**278** (216-363)	**470** (360-687)	744
	03-04	**34.7** (29.3-41.0)	**29.0** (23.4-37.6)	**111** (69.3-141)	**304** (206-376)	**530** (358-671)	729
	05-06	**34.1** (28.8-40.5)	**26.9** (20.5-35.6)	**90.5** (76.1-115)	**307** (209-394)	**486** (372-982)	693
	07-08	**35.2** (28.5-43.5)	**28.4** (23.7-34.5)	**111** (63.7-138)	**279** (160-483)	**538** (320-954)	375
	09-10	**39.2** (29.5-52.0)	**34.4** (23.5-47.1)	**141** (77.0-188)	**373** (242-520)	**620** (445-1160)	447
20 years and older	99-00	**21.9** (17.6-27.2)	**24.0** (21.7-28.4)	**86.2** (67.5-108)	**293** (235-343)	**566** (412-744)	1472
	01-02	**32.1** (28.8-35.8)	**28.8** (25.4-33.4)	**93.4** (77.3-110)	**312** (235-389)	**627** (537-790)	1654
	03-04	**30.2** (27.8-32.8)	**25.9** (22.3-29.8)	**87.8** (77.9-103)	**296** (239-321)	**557** (412-653)	1524
	05-06	**27.0** (23.9-30.6)	**25.0** (19.8-28.8)	**77.4** (66.7-89.5)	**244** (190-308)	**518** (413-591)	1484
	07-08	**29.6** (25.4-34.5)	**24.7** (21.3-28.4)	**84.1** (68.0-98.0)	**278** (207-422)	**671** (512-1150)	1689
	09-10	**30.5** (26.7-34.8)	**26.3** (20.3-31.7)	**97.5** (77.3-115)	**327** (281-425)	**691** (523-1110)	1974
Gender							
Males	99-00	**29.8** (22.2-40.0)	**31.9** (26.3-37.2)	**108** (79.1-151)	**335** (257-440)	**709** (437-981)	1222
	01-02	**32.2** (27.9-37.2)	**29.5** (25.4-33.7)	**91.2** (73.4-103)	**239** (190-331)	**474** (335-719)	1375
	03-04	**33.7** (29.6-38.4)	**27.3** (23.4-33.0)	**92.6** (68.6-124)	**310** (228-351)	**562** (443-653)	1244
	05-06	**32.1** (28.6-36.0)	**29.1** (22.7-33.8)	**90.2** (77.5-101)	**269** (216-340)	**494** (394-591)	1252
	07-08	**33.3** (27.7-40.0)	**26.2** (22.3-31.2)	**98.0** (71.9-119)	**316** (220-477)	**723** (501-1510)	1198
	09-10	**33.5** (29.3-38.2)	**28.8** (23.6-35.5)	**89.8** (74.7-114)	**351** (286-425)	**623** (476-967)	1377
Females	99-00	**20.3** (17.0-24.2)	**23.1** (20.1-26.3)	**84.7** (59.6-105)	**242** (203-288)	**446** (339-619)	1335
	01-02	**33.7** (30.9-36.8)	**28.7** (26.0-32.3)	**97.0** (79.9-118)	**387** (253-500)	**666** (598-807)	1419
	03-04	**28.7** (25.5-32.4)	**25.0** (22.4-28.4)	**85.0** (71.2-106)	**256** (218-308)	**467** (356-620)	1350
	05-06	**25.9** (22.3-29.9)	**22.4** (17.9-27.4)	**74.5** (61.0-87.0)	**246** (195-329)	**526** (398-657)	1276
	07-08	**29.5** (25.1-34.6)	**24.6** (22.2-28.4)	**83.5** (63.7-109)	**296** (194-432)	**661** (448-964)	1226
	09-10	**31.7** (27.6-36.4)	**27.0** (21.8-32.1)	**115** (101-129)	**371** (290-489)	**826** (523-1530)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.3, 0.8, 0.3, 1.0, 0.2, and 0.2 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Genistein (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**31.1** (25.1-38.5)	**30.0** (25.1-37.3)	**117** (82.9-179)	**328** (248-494)	**573** (419-1180)	819
	01-02	**28.3** (22.0-36.4)	**25.6** (19.6-32.5)	**74.8** (48.8-111)	**225** (174-314)	**424** (323-523)	679
	03-04	**31.1** (27.5-35.2)	**25.2** (19.1-32.6)	**83.2** (63.6-120)	**319** (252-537)	**653** (537-851)	653
	05-06	**27.6** (24.4-31.2)	**26.6** (21.5-30.2)	**77.0** (63.3-87.3)	**255** (187-319)	**412** (320-568)	634
	07-08	**30.5** (24.3-38.4)	**24.0** (18.9-30.2)	**86.8** (68.0-123)	**318** (210-414)	**603** (414-1130)	520
	09-10	**28.7** (23.7-34.7)	**24.2** (18.4-32.3)	**84.8** (57.8-120)	**257** (197-327)	**484** (334-623)	604
Non-Hispanic blacks	99-00	**26.7** (19.2-37.0)	**32.9** (24.4-41.5)	**103** (84.8-137)	**257** (213-367)	**495** (329-926)	608
	01-02	**37.6** (27.4-51.6)	**35.3** (23.6-49.5)	**95.5** (71.1-142)	**378** (192-530)	**598** (375-1120)	706
	03-04	**32.3** (24.0-43.4)	**27.4** (18.8-44.9)	**84.8** (60.5-113)	**279** (163-412)	**514** (323-852)	699
	05-06	**31.0** (26.7-36.1)	**27.9** (23.0-34.9)	**92.3** (69.3-106)	**265** (187-355)	**458** (371-643)	662
	07-08	**36.2** (29.3-44.7)	**27.3** (22.6-36.8)	**124** (84.3-157)	**395** (310-530)	**912** (567-1490)	562
	09-10	**33.5** (29.0-38.6)	**27.8** (23.2-36.4)	**99.6** (79.3-120)	**321** (218-392)	**625** (410-1010)	534
Non-Hispanic whites	99-00	**23.6** (19.1-29.3)	**25.6** (21.7-32.0)	**91.4** (68.0-122)	**288** (227-353)	**566** (395-734)	917
	01-02	**30.9** (27.8-34.4)	**27.6** (24.6-30.8)	**89.7** (71.1-105)	**278** (226-365)	**626** (485-755)	1222
	03-04	**30.8** (28.2-33.6)	**26.2** (22.6-31.0)	**93.6** (78.8-112)	**279** (225-313)	**504** (376-610)	1079
	05-06	**26.9** (23.6-30.6)	**23.8** (19.0-29.1)	**77.2** (66.2-87.9)	**244** (198-316)	**518** (391-609)	1039
	07-08	**29.3** (25.2-34.0)	**25.2** (22.1-28.5)	**84.1** (65.8-102)	**235** (182-346)	**620** (446-840)	993
	09-10	**31.9** (27.4-37.2)	**28.3** (21.3-34.6)	**102** (75.4-125)	**334** (280-450)	**691** (501-1060)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.3, 0.8, 0.3, 1.0, 0.2, and 0.2 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Genistein (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**22.3** (17.7-28.1)	**23.8** (18.8-28.9)	**84.7** (67.2-105)	**222** (182-279)	**381** (334-497)	2557
	01-02	**30.9** (28.5-33.6)	**25.9** (23.4-29.2)	**83.3** (72.2-96.3)	**256** (211-296)	**427** (375-490)	2794
	03-04	**29.1** (27.3-31.0)	**24.5** (21.3-27.4)	**77.7** (67.3-90.9)	**231** (203-279)	**510** (388-619)	2594
	05-06	**28.0** (25.3-31.0)	**23.2** (20.3-26.4)	**72.0** (63.1-85.2)	**242** (197-280)	**577** (406-734)	2528
	07-08	**31.4** (27.3-36.1)	**23.7** (21.0-27.7)	**85.2** (70.3-99.5)	**264** (214-375)	**751** (464-1130)	2424
	09-10	**34.9** (31.6-38.4)	**25.4** (22.8-30.0)	**100** (83.3-124)	**367** (313-424)	**863** (612-1090)	2791
Age group							
6-11 years	99-00	**28.3** (21.1-37.9)	**27.8** (15.8-41.3)	**94.3** (60.5-145)	**209** (148-317)	**490** (279-895)	331
	01-02	**44.5** (37.0-53.5)	**37.9** (29.7-49.0)	**112** (76.5-146)	**252** (173-371)	**504** (252-713)	396
	03-04	**35.8** (29.7-43.0)	**35.4** (24.9-43.2)	**78.6** (60.9-119)	**172** (130-243)	**297** (168-618)	341
	05-06	**42.5** (33.1-54.6)	**34.1** (23.7-41.9)	**138** (89.5-195)	**414** (256-850)	**1040** (429-1590)	351
	07-08	**53.5** (41.5-69.0)	**44.2** (33.0-63.9)	**149** (83.2-224)	**451** (236-937)	**940** (411-1800)	360
	09-10	**62.8** (52.5-75.1)	**47.8** (36.7-63.0)	**200** (144-249)	**493** (405-644)	**875** (551-1140)	370
12-19 years	99-00	**29.4** (22.3-38.8)	**32.0** (23.8-41.6)	**83.2** (64.1-104)	**184** (130-295)	**336** (184-816)	754
	01-02	**26.3** (21.3-32.5)	**21.0** (17.8-26.5)	**66.2** (47.9-91.5)	**200** (149-298)	**321** (261-435)	744
	03-04	**25.9** (21.8-30.9)	**21.8** (17.0-29.1)	**65.6** (51.0-83.1)	**201** (145-313)	**366** (297-455)	729
	05-06	**25.3** (22.1-29.0)	**19.6** (16.4-24.0)	**76.5** (51.4-91.6)	**164** (130-249)	**368** (213-520)	693
	07-08	**27.1** (23.1-31.7)	**23.7** (17.8-29.3)	**77.7** (56.2-95.3)	**159** (125-264)	**324** (214-568)	375
	09-10	**36.8** (28.5-47.7)	**27.6** (20.4-40.1)	**102** (67.5-174)	**371** (234-455)	**848** (424-1100)	447
20 years and older	99-00	**20.6** (16.3-26.2)	**21.6** (17.7-26.2)	**83.1** (64.9-107)	**234** (190-287)	**381** (325-562)	1472
	01-02	**30.4** (27.6-33.4)	**24.8** (21.9-30.0)	**83.1** (68.5-99.0)	**269** (208-328)	**435** (374-518)	1654
	03-04	**28.9** (26.7-31.3)	**24.0** (20.1-27.4)	**78.5** (66.1-92.9)	**253** (209-302)	**542** (399-673)	1524
	05-06	**27.1** (24.3-30.3)	**23.0** (19.7-26.8)	**70.3** (61.2-81.3)	**233** (184-275)	**575** (349-762)	1484
	07-08	**30.4** (25.8-35.8)	**22.8** (19.9-25.9)	**81.2** (63.2-99.5)	**263** (205-423)	**842** (464-1310)	1689
	09-10	**32.5** (28.9-36.5)	**23.1** (20.5-28.2)	**91.9** (72.8-116)	**340** (295-409)	**863** (590-1150)	1974
Gender							
Males	99-00	**23.3** (16.8-32.3)	**23.8** (17.5-32.2)	**86.2** (64.7-115)	**236** (178-330)	**523** (323-889)	1222
	01-02	**26.2** (23.1-29.8)	**22.0** (19.4-26.0)	**67.6** (57.4-78.1)	**186** (144-237)	**350** (278-418)	1375
	03-04	**26.4** (22.8-30.5)	**21.5** (17.3-26.2)	**70.0** (51.1-90.5)	**203** (159-235)	**415** (346-600)	1244
	05-06	**25.8** (23.4-28.4)	**22.8** (19.3-26.4)	**65.0** (54.6-82.2)	**207** (154-261)	**431** (305-628)	1252
	07-08	**28.1** (23.4-33.7)	**20.9** (17.6-24.8)	**76.1** (58.9-92.9)	**249** (174-369)	**634** (370-1130)	1198
	09-10	**30.6** (27.3-34.3)	**23.5** (20.7-27.5)	**78.7** (63.0-101)	**313** (241-370)	**631** (453-1020)	1376
Females	99-00	**21.3** (17.5-26.0)	**23.2** (17.5-29.3)	**83.1** (57.2-106)	**211** (154-283)	**357** (283-398)	1335
	01-02	**36.2** (32.8-39.9)	**29.6** (25.2-34.3)	**107** (88.4-129)	**321** (269-355)	**547** (427-729)	1419
	03-04	**31.9** (28.7-35.5)	**27.1** (23.6-31.6)	**87.1** (71.1-102)	**278** (209-324)	**548** (363-763)	1350
	05-06	**30.3** (25.8-35.5)	**23.5** (19.8-29.1)	**81.3** (67.4-104)	**271** (208-406)	**658** (444-894)	1276
	07-08	**35.0** (30.1-40.8)	**27.7** (23.0-34.7)	**95.6** (80.3-107)	**290** (220-506)	**842** (506-1350)	1226
	09-10	**39.6** (35.2-44.5)	**29.4** (23.9-35.5)	**131** (101-151)	**430** (340-542)	**944** (670-1540)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Genistein (creatinine corrected) (1999 – 2010)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**28.4** (23.3-34.7)	**27.9** (22.5-35.0)	**109** (91.5-137)	**257** (209-380)	**562** (257-981)	819
	01-02	**26.6** (21.6-32.9)	**21.0** (16.1-28.9)	**61.6** (50.6-76.8)	**205** (147-270)	**372** (271-479)	679
	03-04	**28.0** (24.8-31.8)	**23.5** (18.5-28.1)	**69.2** (52.3-92.8)	**254** (187-390)	**608** (417-764)	653
	05-06	**24.9** (22.1-28.0)	**21.7** (17.8-23.8)	**72.4** (56.2-90.2)	**202** (140-274)	**338** (275-648)	634
	07-08	**30.0** (23.2-38.8)	**22.5** (16.5-30.5)	**88.3** (55.4-127)	**287** (210-373)	**583** (385-921)	520
	09-10	**30.1** (25.4-35.7)	**23.2** (19.0-30.5)	**79.2** (60.6-108)	**262** (192-353)	**601** (371-818)	604
Non-Hispanic blacks	99-00	**17.1** (12.4-23.7)	**19.5** (15.7-26.1)	**59.5** (43.1-93.7)	**179** (132-245)	**299** (222-446)	608
	01-02	**26.4** (19.3-36.1)	**22.7** (16.4-33.6)	**69.4** (42.2-115)	**217** (139-317)	**384** (217-747)	706
	03-04	**22.8** (18.1-28.8)	**19.6** (14.3-27.1)	**55.0** (39.6-78.1)	**182** (107-240)	**311** (210-514)	699
	05-06	**21.7** (18.8-25.1)	**18.6** (14.9-21.6)	**55.3** (42.6-78.7)	**157** (124-235)	**351** (235-543)	662
	07-08	**28.0** (22.5-34.9)	**20.8** (15.9-25.9)	**91.2** (63.7-112)	**252** (184-413)	**668** (310-1530)	562
	09-10	**26.9** (23.7-30.6)	**19.5** (17.6-23.1)	**78.0** (58.1-107)	**245** (158-341)	**505** (341-879)	533
Non-Hispanic whites	99-00	**23.2** (18.5-29.0)	**24.9** (19.0-31.7)	**86.1** (68.4-105)	**232** (178-295)	**381** (325-523)	917
	01-02	**30.6** (28.2-33.2)	**25.4** (22.7-29.5)	**82.0** (68.3-96.3)	**248** (207-320)	**427** (365-518)	1222
	03-04	**30.4** (27.9-33.0)	**26.2** (21.5-31.4)	**79.6** (69.1-99.6)	**238** (195-321)	**534** (352-688)	1079
	05-06	**28.2** (25.1-31.8)	**23.5** (19.8-29.0)	**71.7** (58.9-89.6)	**242** (192-305)	**615** (423-802)	1039
	07-08	**30.5** (25.8-36.0)	**23.7** (20.2-28.3)	**80.1** (63.4-96.6)	**256** (185-369)	**651** (412-1010)	993
	09-10	**35.8** (31.2-41.0)	**25.6** (22.5-32.7)	**107** (78.5-140)	**398** (304-448)	**881** (576-1300)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary O-Desmethylangolensin (1999 – 2010)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**4.39** (3.37-5.73)	**4.98** (3.65-6.77)	**22.7** (18.7-30.1)	**100** (74.8-141)	**222** (182-250)	2271
	01-02	**4.08** (3.53-4.73)	**3.30** (2.70-4.20)	**19.8** (16.7-24.6)	**96.0** (70.1-135)	**260** (161-437)	2794
	03-04	**4.91** (4.34-5.55)	**4.60** (4.00-5.20)	**23.6** (18.6-27.2)	**95.9** (70.7-122)	**230** (185-342)	2581
	05-06	**4.71** (4.17-5.31)	**3.80** (3.10-4.30)	**22.5** (19.7-26.6)	**101** (86.4-124)	**266** (200-385)	2528
	07-08	**4.65** (4.02-5.39)	**3.40** (2.90-4.20)	**23.0** (17.9-29.8)	**132** (98.2-181)	**328** (236-501)	2424
	09-10	**4.73** (4.08-5.48)	**3.60** (2.90-4.30)	**21.8** (16.8-28.4)	**125** (99.2-156)	**394** (237-615)	2792
Age group							
6-11 years	99-00	**5.60** (3.85-8.15)	**7.52** (3.43-15.2)	**36.2** (20.3-45.0)	**78.7** (43.4-191)	**176** (74.8-264)	287
	01-02	**6.19** (4.51-8.49)	**5.90** (3.80-9.30)	**26.9** (15.7-52.1)	**122** (61.5-215)	**281** (161-466)	396
	03-04	**6.33** (4.30-9.30)	**6.10** (3.50-10.6)	**24.0** (17.0-33.8)	**70.8** (51.4-122)	**138** (80.9-256)	341
	05-06	**7.20** (5.20-9.96)	**6.20** (4.00-11.0)	**37.8** (24.2-55.2)	**145** (83.9-295)	**386** (201-516)	351
	07-08	**7.50** (5.43-10.4)	**5.40** (3.90-9.70)	**34.5** (16.5-52.6)	**133** (79.9-275)	**490** (133-3020)	360
	09-10	**7.85** (6.20-9.94)	**7.00** (4.30-11.7)	**34.9** (27.7-49.6)	**153** (89.1-199)	**263** (167-467)	371
12-19 years	99-00	**6.04** (3.76-9.70)	**7.60** (5.13-13.5)	**36.6** (22.0-57.3)	**107** (63.4-165)	**194** (107-238)	667
	01-02	**5.92** (4.46-7.87)	**5.20** (3.70-7.60)	**33.6** (18.0-56.8)	**125** (91.2-172)	**299** (172-435)	744
	03-04	**6.37** (4.95-8.18)	**5.30** (3.80-8.10)	**33.9** (18.2-50.5)	**110** (82.2-198)	**257** (175-415)	729
	05-06	**8.50** (6.48-11.2)	**8.10** (5.50-11.6)	**41.3** (33.6-49.6)	**105** (80.2-213)	**385** (139-829)	693
	07-08	**4.74** (3.00-7.48)	**3.80** (2.20-7.20)	**20.6** (11.2-34.6)	**105** (29.5-357)	**328** (78.1-638)	375
	09-10	**6.40** (4.93-8.31)	**5.30** (4.00-7.70)	**26.8** (16.6-47.8)	**117** (77.8-165)	**377** (156-965)	447
20 years and older	99-00	**4.05** (3.12-5.26)	**4.46** (3.31-5.64)	**19.8** (16.0-26.5)	**101** (80.8-150)	**228** (179-259)	1317
	01-02	**3.65** (3.08-4.32)	**2.80** (2.30-3.70)	**17.0** (13.9-22.4)	**81.5** (63.0-128)	**260** (135-526)	1654
	03-04	**4.56** (4.02-5.17)	**4.40** (3.60-4.90)	**22.0** (17.8-25.6)	**94.0** (67.6-131)	**230** (187-398)	1511
	05-06	**4.09** (3.51-4.77)	**3.20** (2.60-4.00)	**17.9** (14.9-22.3)	**91.2** (72.3-124)	**248** (182-302)	1484
	07-08	**4.41** (3.72-5.22)	**3.20** (2.40-4.20)	**23.0** (17.5-30.7)	**133** (93.3-187)	**320** (206-589)	1689
	09-10	**4.28** (3.59-5.11)	**3.00** (2.40-3.90)	**19.3** (14.9-27.0)	**127** (95.2-159)	**438** (225-681)	1974
Gender							
Males	99-00	**4.97** (3.71-6.66)	**5.62** (4.12-8.73)	**29.1** (19.8-42.9)	**121** (74.1-190)	**235** (177-332)	1087
	01-02	**3.81** (3.08-4.71)	**3.30** (2.60-4.50)	**17.4** (13.2-24.6)	**82.8** (58.4-116)	**194** (123-324)	1375
	03-04	**4.90** (3.93-6.12)	**4.60** (3.40-5.50)	**23.0** (16.6-30.1)	**92.9** (70.7-129)	**222** (159-332)	1240
	05-06	**4.93** (4.13-5.89)	**4.00** (3.40-5.50)	**22.3** (16.7-28.1)	**90.8** (63.5-137)	**235** (171-311)	1252
	07-08	**4.49** (3.67-5.49)	**3.10** (2.50-4.10)	**22.1** (14.5-33.7)	**117** (81.4-194)	**293** (195-589)	1198
	09-10	**4.39** (3.46-5.59)	**3.30** (2.40-4.40)	**18.1** (14.5-24.3)	**99.2** (65.2-142)	**293** (153-615)	1377
Females	99-00	**3.92** (2.97-5.16)	**4.22** (3.18-5.51)	**19.4** (14.1-26.1)	**83.8** (61.1-114)	**192** (123-250)	1184
	01-02	**4.36** (3.64-5.23)	**3.40** (2.50-4.60)	**21.3** (16.8-29.2)	**107** (70.6-199)	**394** (230-746)	1419
	03-04	**4.91** (4.26-5.66)	**4.60** (3.90-5.50)	**23.9** (18.1-27.4)	**99.3** (63.5-155)	**283** (160-433)	1341
	05-06	**4.50** (3.90-5.20)	**3.30** (2.70-4.30)	**22.8** (17.9-28.3)	**121** (83.2-168)	**284** (182-499)	1276
	07-08	**4.82** (4.03-5.75)	**3.90** (2.90-5.30)	**24.6** (18.1-33.9)	**137** (99.3-195)	**362** (236-468)	1226
	09-10	**5.09** (4.19-6.18)	**3.90** (2.70-5.00)	**28.5** (18.4-42.8)	**152** (110-230)	**494** (309-766)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, 0.2, and 0.2 respectively.
+Not measured after Survey years 2009-2010.

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Urinary O-Desmethylangolensin (1999 – 2010)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**2.41** (1.55-3.73)	**2.14** (1.31-3.37)	**21.0** (10.6-30.5)	**97.6** (59.7-140)	**191** (122-320)	721
	01-02	**2.44** (1.51-3.94)	**1.40** (.500-3.40)	**13.1** (5.80-27.6)	**66.4** (33.5-102)	**152** (75.8-265)	679
	03-04	**2.54** (1.86-3.48)	**1.90** (1.00-3.40)	**14.4** (9.00-18.1)	**62.3** (40.3-99.5)	**146** (99.5-254)	652
	05-06	**3.04** (2.29-4.05)	**2.10** (1.40-2.90)	**14.5** (8.20-24.7)	**62.8** (39.1-104)	**158** (87.0-246)	634
	07-08	**3.16** (2.40-4.15)	**2.50** (1.50-3.30)	**14.7** (10.5-20.7)	**84.9** (52.1-152)	**211** (159-340)	520
	09-10	**3.44** (2.78-4.27)	**2.70** (2.10-3.50)	**15.2** (10.6-21.2)	**93.1** (63.5-114)	**216** (127-294)	604
Non-Hispanic blacks	99-00	**5.74** (4.55-7.24)	**8.71** (5.82-10.9)	**33.5** (22.1-52.4)	**108** (78.3-156)	**192** (149-255)	538
	01-02	**5.35** (4.00-7.14)	**5.30** (2.90-7.30)	**32.7** (22.0-52.4)	**128** (75.9-216)	**308** (150-436)	706
	03-04	**5.49** (4.05-7.46)	**4.20** (3.30-6.10)	**26.1** (13.4-49.0)	**117** (86.2-166)	**221** (177-354)	698
	05-06	**5.83** (4.49-7.58)	**4.90** (3.90-6.30)	**32.6** (21.2-46.7)	**110** (72.4-189)	**297** (162-398)	662
	07-08	**6.63** (4.50-9.75)	**5.80** (3.90-9.10)	**40.8** (23.6-63.3)	**183** (119-230)	**347** (199-822)	562
	09-10	**5.03** (3.75-6.74)	**4.30** (2.90-6.00)	**27.0** (16.7-35.9)	**120** (80.5-168)	**293** (168-464)	534
Non-Hispanic whites	99-00	**4.50** (3.26-6.22)	**4.99** (3.43-7.10)	**22.5** (17.1-34.4)	**103** (72.0-152)	**228** (177-259)	826
	01-02	**4.13** (3.43-4.96)	**3.40** (2.60-4.40)	**17.9** (15.5-23.8)	**98.7** (67.4-153)	**260** (153-526)	1222
	03-04	**5.27** (4.63-5.99)	**5.30** (4.40-6.00)	**24.2** (18.8-28.5)	**99.5** (67.6-149)	**246** (183-409)	1070
	05-06	**4.72** (4.09-5.45)	**3.80** (3.20-4.70)	**21.9** (17.5-27.6)	**97.7** (72.3-142)	**246** (181-363)	1039
	07-08	**4.67** (3.88-5.62)	**3.50** (2.80-4.60)	**21.3** (16.9-27.8)	**113** (79.9-193)	**357** (193-628)	993
	09-10	**4.95** (4.20-5.84)	**3.70** (2.90-4.50)	**20.4** (16.0-30.1)	**139** (97.5-156)	**471** (206-766)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, 0.2, and 0.2 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary O-Desmethylangolensin (creatinine corrected) (1999 – 2010)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**4.03** (2.97-5.45)	**4.44** (3.10-6.35)	**21.8** (15.3-31.6)	**90.4** (62.9-122)	**167** (140-218)	2271
	01-02	**3.83** (3.32-4.43)	**3.24** (2.55-4.12)	**18.9** (16.1-23.2)	**85.2** (65.1-117)	**281** (149-412)	2794
	03-04	**4.58** (4.20-5.01)	**4.09** (3.53-4.59)	**19.6** (17.4-22.6)	**92.9** (76.5-120)	**201** (183-261)	2581
	05-06	**4.59** (4.04-5.21)	**3.70** (3.12-4.42)	**20.7** (18.4-22.8)	**95.6** (78.0-129)	**215** (180-325)	2528
	07-08	**4.68** (4.04-5.41)	**3.51** (3.06-4.02)	**22.5** (16.7-30.5)	**125** (94.8-164)	**350** (199-523)	2424
	09-10	**5.07** (4.38-5.87)	**3.78** (3.06-4.61)	**23.6** (19.3-29.7)	**138** (101-185)	**433** (285-547)	2791
Age group							
6-11 years	99-00	**6.00** (4.04-8.91)	**7.15** (3.94-16.6)	**28.8** (14.3-45.0)	**83.3** (45.0-167)	**179** (88.2-262)	287
	01-02	**7.03** (5.05-9.77)	**6.49** (4.24-11.6)	**29.9** (16.3-54.1)	**101** (75.3-199)	**305** (134-464)	396
	03-04	**6.73** (4.55-9.97)	**5.97** (4.09-8.28)	**27.7** (15.6-42.3)	**86.1** (45.2-135)	**149** (84.3-189)	341
	05-06	**7.93** (5.73-11.0)	**7.15** (3.90-11.3)	**40.9** (27.5-55.9)	**164** (85.8-280)	**346** (215-497)	351
	07-08	**9.20** (6.70-12.6)	**6.81** (5.05-10.7)	**31.1** (20.1-58.9)	**164** (100-296)	**465** (175-2310)	360
	09-10	**10.7** (8.43-13.6)	**9.58** (5.71-13.9)	**43.0** (31.3-63.3)	**201** (111-260)	**330** (226-478)	370
12-19 years	99-00	**4.13** (2.33-7.35)	**5.71** (2.82-11.5)	**26.0** (14.7-44.4)	**71.4** (40.8-122)	**122** (75.2-262)	667
	01-02	**4.57** (3.44-6.07)	**3.88** (2.82-5.32)	**26.0** (18.0-35.9)	**95.0** (61.4-129)	**259** (129-331)	744
	03-04	**4.76** (3.71-6.11)	**4.26** (3.13-5.97)	**22.8** (14.3-39.2)	**86.4** (49.0-149)	**185** (101-261)	729
	05-06	**6.30** (4.89-8.13)	**5.69** (3.44-8.40)	**28.0** (22.5-37.1)	**89.0** (58.5-138)	**258** (103-686)	693
	07-08	**3.64** (2.28-5.83)	**2.99** (1.91-5.69)	**18.3** (7.73-24.0)	**75.3** (21.4-200)	**199** (69.4-664)	375
	09-10	**6.02** (4.74-7.65)	**5.71** (3.30-7.53)	**23.6** (16.0-36.8)	**109** (59.2-189)	**287** (132-558)	447
20 years and older	99-00	**3.82** (2.84-5.13)	**3.90** (2.69-5.73)	**20.2** (12.9-29.2)	**96.5** (61.8-133)	**172** (140-252)	1317
	01-02	**3.46** (2.95-4.04)	**2.74** (2.03-3.64)	**16.8** (13.7-20.3)	**78.9** (58.2-124)	**281** (143-467)	1654
	03-04	**4.35** (3.96-4.78)	**3.75** (3.23-4.35)	**18.6** (15.7-22.6)	**95.2** (76.5-131)	**228** (192-284)	1511
	05-06	**4.10** (3.51-4.79)	**3.35** (2.57-4.30)	**17.4** (14.0-20.6)	**89.3** (64.5-140)	**197** (160-332)	1484
	07-08	**4.52** (3.82-5.36)	**3.13** (2.55-3.92)	**22.7** (16.1-32.4)	**130** (89.1-183)	**353** (189-641)	1689
	09-10	**4.56** (3.83-5.42)	**3.29** (2.42-4.07)	**21.2** (16.2-26.8)	**139** (95.3-212)	**437** (246-634)	1974
Gender							
Males	99-00	**3.95** (2.79-5.58)	**4.50** (2.88-6.50)	**24.5** (13.8-40.5)	**96.5** (62.4-122)	**210** (125-265)	1087
	01-02	**3.10** (2.48-3.86)	**2.87** (2.00-3.96)	**15.0** (10.4-19.7)	**60.7** (41.5-90.2)	**154** (96.4-301)	1375
	03-04	**3.83** (3.10-4.73)	**3.33** (2.41-4.35)	**15.6** (13.9-18.9)	**76.2** (51.1-99.5)	**193** (124-255)	1240
	05-06	**3.97** (3.33-4.72)	**3.49** (2.73-4.33)	**17.7** (14.1-21.4)	**68.3** (55.8-85.8)	**165** (140-216)	1252
	07-08	**3.79** (3.10-4.63)	**2.79** (2.33-3.49)	**18.2** (12.4-25.7)	**86.7** (59.2-153)	**264** (139-432)	1198
	09-10	**4.02** (3.10-5.19)	**3.19** (2.13-4.58)	**17.3** (12.3-21.7)	**86.2** (59.8-137)	**317** (140-485)	1376
Females	99-00	**4.10** (3.00-5.61)	**4.17** (2.91-6.35)	**20.4** (14.4-27.2)	**86.0** (49.1-145)	**155** (100-205)	1184
	01-02	**4.68** (3.87-5.68)	**3.74** (2.77-4.88)	**26.8** (18.7-34.0)	**111** (70.3-205)	**399** (175-739)	1419
	03-04	**5.45** (4.71-6.30)	**4.82** (4.09-5.92)	**24.3** (19.6-28.9)	**106** (78.5-163)	**255** (193-343)	1341
	05-06	**5.27** (4.56-6.09)	**4.00** (3.07-5.49)	**24.1** (19.8-31.1)	**140** (96.8-166)	**325** (197-613)	1276
	07-08	**5.72** (4.75-6.88)	**4.23** (3.33-5.71)	**29.0** (20.4-43.2)	**164** (105-213)	**394** (212-743)	1226
	09-10	**6.35** (5.34-7.57)	**4.42** (3.46-5.79)	**34.1** (25.4-43.5)	**199** (139-248)	**504** (350-761)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary O-Desmethylangolensin (creatinine corrected) (1999 – 2010)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**2.19** (1.49-3.24)	**1.88** (1.15-3.10)	**16.6** (11.3-25.8)	**71.2** (52.3-113)	**136** (90.5-251)	721
	01-02	**2.30** (1.48-3.57)	**1.45** (.769-3.37)	**11.8** (4.91-23.6)	**46.7** (31.4-87.8)	**108** (54.7-218)	679
	03-04	**2.30** (1.68-3.15)	**1.65** (.845-3.06)	**13.2** (6.63-21.2)	**51.6** (36.9-75.4)	**125** (84.1-165)	652
	05-06	**2.75** (1.92-3.93)	**1.69** (1.04-2.99)	**12.8** (7.27-24.9)	**53.0** (33.3-93.2)	**135** (72.6-204)	634
	07-08	**3.10** (2.26-4.27)	**2.22** (1.42-3.32)	**16.0** (8.84-23.8)	**82.0** (45.8-145)	**215** (98.9-467)	520
	09-10	**3.62** (2.92-4.50)	**2.71** (1.82-4.92)	**13.5** (10.8-19.6)	**76.5** (54.2-128)	**226** (113-461)	604
Non-Hispanic blacks	99-00	**3.65** (2.90-4.60)	**5.22** (3.59-6.75)	**23.8** (17.6-32.1)	**67.1** (52.1-79.7)	**116** (81.9-239)	538
	01-02	**3.75** (2.76-5.10)	**3.57** (2.14-5.48)	**22.8** (14.5-30.4)	**78.5** (46.5-175)	**218** (98.5-339)	706
	03-04	**3.89** (3.03-4.99)	**3.12** (1.96-4.96)	**16.9** (11.3-26.7)	**80.0** (58.6-104)	**159** (120-255)	698
	05-06	**4.09** (3.13-5.34)	**4.22** (2.49-5.71)	**20.1** (13.5-24.5)	**69.9** (44.8-151)	**225** (90.2-369)	662
	07-08	**5.13** (3.47-7.57)	**4.22** (2.84-7.71)	**27.0** (15.6-44.5)	**133** (81.9-182)	**308** (164-485)	562
	09-10	**4.06** (3.11-5.28)	**3.61** (2.41-5.07)	**22.4** (12.9-30.2)	**95.1** (59.2-142)	**208** (133-418)	533
Non-Hispanic whites	99-00	**4.42** (3.12-6.27)	**4.68** (3.05-7.23)	**22.3** (15.3-37.9)	**102** (57.6-148)	**177** (140-215)	826
	01-02	**4.08** (3.41-4.89)	**3.51** (2.45-4.57)	**21.2** (16.3-27.4)	**96.4** (69.8-126)	**300** (153-464)	1222
	03-04	**5.18** (4.70-5.70)	**4.58** (3.89-5.39)	**21.6** (17.4-27.7)	**103** (77.7-149)	**225** (185-271)	1070
	05-06	**4.96** (4.33-5.69)	**3.97** (3.26-4.67)	**21.5** (17.3-26.2)	**101** (74.5-142)	**227** (183-332)	1039
	07-08	**4.86** (4.00-5.91)	**3.85** (3.06-4.57)	**22.2** (15.1-32.4)	**124** (84.2-180)	**355** (175-728)	993
	09-10	**5.55** (4.77-6.47)	**3.88** (3.19-4.87)	**23.8** (19.2-32.5)	**146** (97.6-248)	**461** (330-739)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary 2-Hydroxyfluorene (2003 – 2008)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**304** (262-354)	**280** (242-319)	**679** (561-815)	**1850** (1430-2190)	**2670** (2230-3130)	2521
	05-06	**316** (297-338)	**272** (243-296)	**661** (605-743)	**2060** (1600-2420)	**3150** (2670-3730)	2431
	07-08	**303** (271-338)	**259** (231-293)	**618** (489-817)	**1630** (1340-2020)	**2510** (2100-2890)	2581
Age group							
6-11 years	03-04	**209** (183-239)	**228** (189-259)	**341** (295-411)	**576** (423-728)	**763** (613-827)	338
	05-06	**201** (184-221)	**195** (170-223)	**352** (306-402)	**497** (436-618)	**709** (536-833)	343
	07-08	**233** (205-264)	**239** (194-280)	**400** (326-454)	**620** (484-714)	**851** (695-1000)	382
12-19 years	03-04	**281** (245-321)	**292** (259-323)	**502** (445-601)	**1000** (753-1320)	**1480** (1320-1930)	707
	05-06	**283** (258-311)	**272** (247-300)	**482** (425-540)	**1080** (843-1250)	**1750** (1100-2820)	670
	07-08	**287** (243-339)	**255** (217-293)	**541** (434-631)	**963** (774-1350)	**1510** (1050-2120)	395
20 years and older	03-04	**323** (272-383)	**290** (247-334)	**832** (653-1020)	**2090** (1680-2460)	**2920** (2410-3650)	1476
	05-06	**340** (311-371)	**284** (252-317)	**813** (705-917)	**2410** (1880-2820)	**3460** (2820-4160)	1418
	07-08	**314** (276-357)	**267** (231-306)	**699** (518-1020)	**1790** (1470-2220)	**2700** (2190-3270)	1804
Gender							
Males	03-04	**385** (333-446)	**338** (300-415)	**900** (739-1150)	**2120** (1770-2450)	**2930** (2490-3390)	1213
	05-06	**376** (345-410)	**332** (302-364)	**823** (658-1030)	**2160** (1660-2570)	**3120** (2570-3560)	1213
	07-08	**366** (334-402)	**306** (280-348)	**756** (613-983)	**1740** (1430-2130)	**2650** (2130-3270)	1280
Females	03-04	**243** (204-290)	**226** (184-269)	**490** (405-617)	**1400** (907-1930)	**2310** (1740-3070)	1308
	05-06	**268** (234-307)	**227** (199-270)	**528** (445-638)	**1910** (1020-2830)	**3180** (2180-4590)	1218
	07-08	**252** (219-289)	**216** (192-236)	**505** (387-629)	**1470** (1050-1960)	**2330** (1770-2840)	1301
Race/ethnicity							
Mexican Americans	03-04	**248** (215-286)	**235** (203-293)	**502** (412-580)	**1100** (771-1330)	**1640** (1250-2240)	629
	05-06	**233** (200-271)	**216** (180-247)	**413** (334-488)	**901** (704-1080)	**1360** (1060-1950)	615
	07-08	**248** (226-273)	**240** (215-261)	**418** (355-496)	**801** (643-979)	**1300** (933-1680)	523
Non-Hispanic blacks	03-04	**432** (361-516)	**381** (317-462)	**856** (702-1270)	**2200** (1830-2610)	**2960** (2350-4460)	684
	05-06	**404** (346-471)	**330** (307-377)	**805** (626-1090)	**2190** (1610-2930)	**3160** (2530-4330)	657
	07-08	**387** (333-450)	**325** (281-403)	**879** (724-1040)	**1940** (1500-2550)	**3170** (2290-5120)	590
Non-Hispanic whites	03-04	**308** (255-372)	**280** (233-332)	**728** (554-898)	**1940** (1540-2390)	**2920** (2400-3500)	1045
	05-06	**319** (290-350)	**270** (237-315)	**705** (626-829)	**2180** (1700-2540)	**3390** (2670-4250)	972
	07-08	**307** (261-362)	**257** (221-308)	**629** (452-995)	**1720** (1260-2190)	**2580** (2070-3020)	1070

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 5.0, 5.0, and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyfluorene (2011 - 2012)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**240** (219-263)	**215** (199-231)	**498** (444-576)	**1380** (1110-1570)	**2340** (1920-2620)	2492
Age group							
6-11 years	11-12	**161** (146-177)	**176** (166-194)	**301** (259-332)	**485** (390-595)	**615** (522-736)	397
12-19 years	11-12	**233** (198-274)	**224** (180-275)	**476** (386-567)	**888** (679-1100)	**1370** (1030-1950)	389
20 years and older	11-12	**252** (227-279)	**217** (201-242)	**574** (474-637)	**1530** (1320-1830)	**2420** (2180-2920)	1706
Gender							
Males	11-12	**280** (245-320)	**244** (210-286)	**584** (457-689)	**1460** (1180-1830)	**2390** (2050-3100)	1258
Females	11-12	**207** (182-236)	**180** (157-209)	**425** (360-525)	**1210** (810-1580)	**2260** (1620-2420)	1234
Race/ethnicity							
Mexican Americans	11-12	**238** (184-307)	**220** (180-252)	**475** (306-747)	**1030** (584-1780)	**1510** (829-2920)	317
Non-Hispanic blacks	11-12	**342** (306-381)	**321** (304-349)	**641** (549-734)	**1480** (1150-1890)	**2390** (1970-3040)	664
Non-Hispanic whites	11-12	**227** (210-246)	**199** (173-221)	**480** (386-580)	**1410** (1110-1620)	**2350** (1790-2920)	814
All Hispanics	11-12	**251** (210-301)	**228** (204-260)	**514** (421-646)	**1050** (785-1510)	**1810** (1260-2410)	573
Asians	11-12	**154** (126-190)	**137** (111-175)	**326** (217-408)	**563** (467-903)	**1100** (691-1490)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyfluorene (creatinine corrected) (2003 – 2008)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**286** (256-320)	**221** (200-249)	**495** (429-629)	**1510** (1150-1800)	**2070** (1850-2390)	2521
	05-06	**308** (288-330)	**227** (209-245)	**567** (509-658)	**1730** (1540-1850)	**2450** (2020-2930)	2431
	07-08	**304** (272-339)	**234** (211-260)	**526** (403-711)	**1500** (1140-1780)	**2150** (1850-2500)	2581
Age group							
6-11 years	03-04	**221** (199-246)	**217** (188-238)	**305** (270-356)	**462** (370-535)	**695** (465-807)	338
	05-06	**224** (207-243)	**219** (197-254)	**320** (288-365)	**451** (384-523)	**527** (450-720)	343
	07-08	**287** (255-324)	**262** (240-292)	**407** (355-503)	**721** (555-849)	**864** (757-956)	382
12-19 years	03-04	**213** (189-240)	**189** (172-211)	**310** (275-377)	**649** (512-778)	**937** (762-1320)	707
	05-06	**214** (201-227)	**189** (178-197)	**286** (266-320)	**607** (516-769)	**1190** (803-1430)	670
	07-08	**223** (200-249)	**204** (176-236)	**351** (270-419)	**592** (504-683)	**900** (683-1080)	395
20 years and older	03-04	**310** (274-350)	**233** (203-269)	**659** (494-835)	**1730** (1420-1940)	**2310** (1930-2590)	1476
	05-06	**339** (313-367)	**241** (216-262)	**754** (629-891)	**1870** (1750-2110)	**2830** (2250-3200)	1418
	07-08	**321** (282-365)	**234** (210-269)	**633** (438-873)	**1650** (1360-2060)	**2390** (2090-2690)	1804
Gender							
Males	03-04	**302** (271-337)	**242** (218-272)	**635** (494-758)	**1510** (1200-1700)	**1940** (1700-2310)	1213
	05-06	**302** (278-328)	**233** (212-259)	**610** (510-744)	**1480** (1240-1680)	**1920** (1680-2390)	1213
	07-08	**308** (283-336)	**239** (218-261)	**615** (464-764)	**1480** (1200-1640)	**2120** (1780-2390)	1280
Females	03-04	**271** (235-314)	**208** (183-244)	**415** (352-521)	**1530** (991-1890)	**2220** (1730-2590)	1308
	05-06	**314** (284-347)	**217** (198-247)	**526** (437-622)	**1900** (1680-2240)	**2930** (2310-3280)	1218
	07-08	**300** (257-350)	**225** (201-265)	**461** (347-683)	**1510** (929-2100)	**2250** (1630-2770)	1301
Race/ethnicity							
Mexican Americans	03-04	**224** (197-255)	**198** (178-227)	**370** (306-432)	**745** (562-1030)	**1200** (745-1730)	629
	05-06	**210** (190-232)	**179** (155-205)	**294** (250-368)	**624** (439-834)	**1000** (720-1190)	615
	07-08	**244** (216-275)	**214** (187-238)	**364** (301-438)	**718** (582-824)	**958** (775-1480)	523
Non-Hispanic blacks	03-04	**308** (259-365)	**249** (210-305)	**609** (430-803)	**1430** (939-1870)	**1880** (1430-2500)	684
	05-06	**284** (250-322)	**222** (202-245)	**502** (350-714)	**1230** (941-1760)	**1880** (1510-2440)	657
	07-08	**299** (254-351)	**237** (198-287)	**602** (468-768)	**1370** (1050-1910)	**2220** (1570-2990)	590
Non-Hispanic whites	03-04	**304** (266-349)	**226** (199-261)	**581** (449-796)	**1630** (1410-1940)	**2310** (1940-2540)	1045
	05-06	**335** (307-366)	**242** (216-270)	**687** (561-806)	**1840** (1650-2060)	**2800** (2070-3260)	972
	07-08	**319** (274-372)	**238** (205-290)	**579** (393-841)	**1620** (1180-2090)	**2340** (1940-2640)	1070

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyfluorene (creatinine corrected) (2011 - 2012)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**273** (255-292)	**211** (196-228)	**439** (374-495)	**1340** (1120-1570)	**2110** (1930-2250)	2490
Age group							
6-11 years	11-12	**231** (213-251)	**222** (201-243)	**309** (268-371)	**474** (379-567)	**584** (515-702)	396
12-19 years	11-12	**225** (205-248)	**205** (180-242)	**307** (266-368)	**733** (454-877)	**966** (733-1150)	389
20 years and older	11-12	**286** (266-309)	**211** (195-229)	**484** (420-615)	**1630** (1320-1820)	**2230** (2000-2630)	1705
Gender							
Males	11-12	**262** (233-296)	**201** (183-228)	**439** (342-576)	**1320** (1060-1630)	**2040** (1710-2200)	1257
Females	11-12	**284** (255-316)	**218** (199-242)	**439** (338-527)	**1370** (920-1820)	**2220** (1820-2570)	1233
Race/ethnicity							
Mexican Americans	11-12	**267** (222-322)	**221** (183-264)	**440** (283-647)	**1020** (515-1500)	**1350** (937-2460)	317
Non-Hispanic blacks	11-12	**266** (241-294)	**228** (203-244)	**461** (339-619)	**971** (841-1090)	**1460** (1090-1930)	664
Non-Hispanic whites	11-12	**276** (260-293)	**208** (189-228)	**445** (374-501)	**1600** (1310-1820)	**2220** (1950-2630)	812
All Hispanics	11-12	**281** (248-319)	**225** (199-255)	**445** (337-553)	**1110** (642-1460)	**1550** (1170-2180)	573
Asians	11-12	**207** (174-246)	**185** (156-233)	**299** (262-351)	**532** (401-828)	**996** (643-1420)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyfluorene (2001 – 2008)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**134** (115-155)	**111** (96.0-126)	**253** (207-349)	**959** (666-1300)	**1620** (1390-1900)	2745
	03-04	**126** (108-148)	**103** (90.4-118)	**302** (231-404)	**1090** (934-1270)	**1740** (1400-2070)	2502
	05-06	**124** (115-134)	**99.1** (88.5-110)	**304** (268-365)	**1060** (830-1210)	**1780** (1500-1910)	2398
	07-08	**116** (103-132)	**92.9** (85.7-100)	**258** (203-341)	**821** (681-1050)	**1380** (1170-1630)	2581
Age group							
6-11 years	01-02	**106** (94.8-119)	**106** (91.0-124)	**174** (145-200)	**287** (235-358)	**385** (306-455)	387
	03-04	**89.2** (77.3-103)	**92.3** (79.7-103)	**151** (113-172)	**238** (184-331)	**343** (241-423)	336
	05-06	**81.7** (73.6-90.7)	**80.6** (68.3-98.9)	**140** (122-174)	**235** (189-272)	**287** (242-345)	336
	07-08	**98.0** (85.8-112)	**94.2** (84.3-106)	**178** (149-198)	**302** (239-332)	**458** (247-752)	382
12-19 years	01-02	**129** (103-161)	**113** (97.0-137)	**222** (177-266)	**542** (325-1070)	**1210** (680-2130)	733
	03-04	**116** (100-134)	**114** (94.7-133)	**214** (181-269)	**476** (317-748)	**924** (609-1410)	701
	05-06	**119** (107-133)	**112** (94.4-126)	**212** (181-229)	**588** (436-659)	**986** (609-1800)	661
	07-08	**114** (95.5-136)	**93.7** (77.4-114)	**218** (168-258)	**494** (341-740)	**830** (725-1020)	400
20 years and older	01-02	**138** (119-161)	**111** (94.0-129)	**311** (228-429)	**1130** (823-1400)	**1850** (1470-2080)	1625
	03-04	**134** (112-160)	**105** (86.5-125)	**408** (300-537)	**1240** (1050-1480)	**1910** (1620-2290)	1465
	05-06	**131** (118-145)	**101** (86.2-117)	**394** (308-448)	**1220** (968-1510)	**1900** (1620-2050)	1401
	07-08	**119** (103-138)	**91.4** (83.5-100)	**302** (205-449)	**992** (745-1200)	**1550** (1230-1820)	1799
Gender							
Males	01-02	**163** (137-194)	**134** (115-155)	**352** (242-481)	**1110** (721-1500)	**1850** (1390-2190)	1346
	03-04	**165** (140-194)	**133** (108-162)	**458** (313-681)	**1270** (1030-1530)	**1920** (1580-2120)	1205
	05-06	**155** (138-174)	**127** (118-136)	**420** (304-510)	**1130** (887-1330)	**1810** (1440-2050)	1196
	07-08	**146** (131-162)	**115** (103-132)	**330** (262-450)	**944** (748-1190)	**1530** (1160-1940)	1284
Females	01-02	**111** (95.0-130)	**94.0** (83.0-108)	**204** (169-250)	**796** (498-1040)	**1390** (1250-1670)	1399
	03-04	**98.2** (81.2-119)	**80.5** (66.7-101)	**195** (163-272)	**842** (530-1200)	**1590** (1180-1800)	1297
	05-06	**99.9** (87.0-115)	**78.2** (68.3-88.3)	**225** (176-278)	**961** (558-1390)	**1720** (1300-2020)	1202
	07-08	**93.9** (81.2-109)	**77.2** (70.4-83.8)	**192** (134-276)	**688** (457-1090)	**1280** (1030-1590)	1297
Race/ethnicity							
Mexican Americans	01-02	**108** (87.1-134)	**99.0** (81.0-119)	**190** (144-255)	**476** (302-641)	**718** (476-1140)	662
	03-04	**93.4** (79.6-110)	**83.4** (67.0-96.9)	**190** (150-252)	**520** (388-726)	**1030** (688-1320)	622
	05-06	**82.5** (71.0-95.8)	**71.8** (60.2-83.9)	**143** (116-173)	**435** (265-716)	**763** (565-1020)	596
	07-08	**90.4** (79.6-103)	**81.2** (74.5-92.4)	**160** (136-192)	**363** (259-513)	**674** (454-1180)	529
Non-Hispanic blacks	01-02	**203** (169-244)	**162** (135-188)	**449** (308-830)	**1420** (1130-1780)	**2350** (1520-3000)	692
	03-04	**195** (157-242)	**160** (124-187)	**482** (303-827)	**1460** (1070-1800)	**2110** (1580-2830)	683
	05-06	**170** (143-202)	**134** (121-149)	**345** (246-558)	**1300** (929-1760)	**1880** (1550-2370)	652
	07-08	**164** (142-190)	**133** (112-157)	**393** (303-494)	**1290** (963-1420)	**1770** (1330-2660)	587
Non-Hispanic whites	01-02	**130** (108-157)	**108** (93.0-127)	**246** (202-352)	**948** (621-1320)	**1620** (1320-1990)	1207
	03-04	**129** (106-155)	**105** (87.6-124)	**313** (237-464)	**1200** (1010-1410)	**1870** (1430-2220)	1035
	05-06	**123** (111-137)	**96.8** (85.4-112)	**343** (275-420)	**1060** (760-1260)	**1870** (1390-2050)	966
	07-08	**118** (98.0-141)	**91.6** (81.6-103)	**274** (195-403)	**857** (646-1190)	**1370** (1050-1740)	1066

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 2.0, 5.0, 5.0 and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyfluorene (2011 - 2012)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**93.6** (85.2-103)	**77.0** (70.0-85.0)	**195** (166-226)	**688** (505-851)	**1240** (946-1690)	2488
Age group							
6-11 years	11-12	**69.9** (63.1-77.3)	**77.0** (66.0-91.0)	**132** (118-145)	**203** (178-229)	**244** (224-270)	397
12-19 years	11-12	**91.7** (77.7-108)	**86.0** (73.0-109)	**182** (153-208)	**398** (269-681)	**801** (473-1050)	389
20 years and older	11-12	**97.0** (87.0-108)	**76.0** (67.0-85.0)	**221** (172-271)	**809** (614-968)	**1410** (1090-1810)	1702
Gender							
Males	11-12	**112** (95.1-132)	**92.0** (78.0-108)	**225** (167-302)	**857** (517-1030)	**1630** (969-1990)	1257
Females	11-12	**78.8** (68.1-91.1)	**66.0** (58.0-76.0)	**166** (135-205)	**556** (399-715)	**1030** (804-1340)	1231
Race/ethnicity							
Mexican Americans	11-12	**86.4** (64.9-115)	**75.0** (58.0-95.0)	**176** (114-289)	**426** (229-949)	**835** (311-1640)	315
Non-Hispanic blacks	11-12	**143** (128-159)	**122** (109-137)	**281** (220-335)	**879** (639-1140)	**1600** (1190-1980)	663
Non-Hispanic whites	11-12	**88.9** (82.3-96.0)	**70.0** (63.0-78.0)	**183** (155-223)	**700** (515-837)	**1220** (857-1930)	813
All Hispanics	11-12	**92.6** (75.9-113)	**77.0** (68.0-97.0)	**199** (148-258)	**473** (300-835)	**946** (543-1330)	571
Asians	11-12	**57.8** (47.9-69.8)	**49.0** (41.0-64.0)	**126** (96.0-151)	**230** (184-373)	**555** (295-781)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyfluorene (creatinine corrected) (2001 – 2008)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**125** (108-144)	**94.4** (83.3-106)	**220** (174-303)	**754** (622-873)	**1060** (909-1290)	2745
	03-04	**119** (106-134)	**86.6** (76.8-97.3)	**256** (201-337)	**856** (668-1060)	**1330** (1130-1590)	2502
	05-06	**121** (111-131)	**84.5** (77.5-93.4)	**245** (203-297)	**930** (806-1020)	**1280** (1150-1400)	2398
	07-08	**117** (104-132)	**84.6** (76.8-98.5)	**226** (177-310)	**789** (601-1000)	**1230** (1040-1410)	2581
Age group							
6-11 years	01-02	**119** (103-137)	**110** (96.7-121)	**153** (135-197)	**265** (206-377)	**382** (254-631)	387
	03-04	**94.6** (84.3-106)	**92.4** (83.1-98.5)	**130** (115-154)	**202** (168-282)	**311** (197-435)	336
	05-06	**90.7** (82.6-99.6)	**90.3** (80.1-99.7)	**130** (119-142)	**210** (167-242)	**290** (237-353)	336
	07-08	**120** (105-138)	**108** (92.3-127)	**186** (150-215)	**330** (231-401)	**419** (304-918)	382
12-19 years	01-02	**99.3** (81.6-121)	**81.9** (74.2-92.6)	**144** (109-197)	**390** (214-700)	**711** (372-1380)	733
	03-04	**88.1** (78.0-99.6)	**79.0** (72.5-83.2)	**137** (114-170)	**319** (225-440)	**586** (356-880)	701
	05-06	**90.1** (84.3-96.3)	**73.8** (70.0-81.7)	**133** (112-153)	**381** (323-426)	**618** (437-819)	661
	07-08	**88.5** (78.9-99.2)	**74.8** (65.2-84.6)	**141** (118-185)	**317** (242-449)	**515** (338-656)	400
20 years and older	01-02	**131** (113-151)	**94.4** (81.0-108)	**279** (195-367)	**862** (727-923)	**1210** (1010-1350)	1625
	03-04	**128** (113-146)	**88.2** (76.8-104)	**364** (242-484)	**1020** (828-1240)	**1500** (1290-1710)	1465
	05-06	**131** (119-144)	**85.9** (77.1-98.5)	**334** (251-476)	**1020** (931-1180)	**1380** (1220-1550)	1401
	07-08	**122** (106-142)	**83.9** (76.0-99.9)	**276** (186-389)	**926** (710-1110)	**1320** (1150-1500)	1799
Gender							
Males	01-02	**132** (111-156)	**100** (88.5-117)	**260** (194-361)	**745** (560-914)	**1130** (862-1380)	1346
	03-04	**129** (114-147)	**95.8** (82.5-111)	**338** (226-456)	**833** (672-1010)	**1220** (980-1510)	1205
	05-06	**125** (112-139)	**92.4** (84.3-103)	**272** (215-404)	**784** (660-936)	**1100** (874-1310)	1196
	07-08	**123** (111-136)	**92.3** (80.8-105)	**282** (227-354)	**791** (675-969)	**1110** (989-1330)	1284
Females	01-02	**119** (104-136)	**88.9** (78.6-103)	**179** (156-227)	**777** (604-888)	**1030** (923-1270)	1399
	03-04	**110** (93.4-129)	**81.7** (69.5-91.5)	**183** (132-285)	**920** (488-1270)	**1460** (1130-1750)	1297
	05-06	**117** (105-130)	**77.6** (71.9-90.2)	**203** (160-290)	**1040** (836-1240)	**1400** (1220-1780)	1202
	07-08	**112** (95.7-131)	**82.1** (72.7-96.8)	**180** (132-265)	**789** (450-1140)	**1240** (1050-1500)	1297
Race/ethnicity							
Mexican Americans	01-02	**101** (84.2-121)	**84.0** (74.8-97.2)	**159** (124-214)	**364** (227-598)	**604** (357-1230)	662
	03-04	**84.8** (73.1-98.4)	**68.8** (60.0-80.2)	**170** (119-213)	**353** (319-435)	**668** (353-1050)	622
	05-06	**74.0** (66.0-83.1)	**59.9** (52.5-69.7)	**112** (88.0-136)	**282** (217-410)	**585** (320-763)	596
	07-08	**88.1** (75.3-103)	**72.7** (62.2-84.1)	**141** (107-184)	**366** (232-536)	**568** (397-722)	529
Non-Hispanic blacks	01-02	**143** (118-173)	**110** (90.7-133)	**316** (186-525)	**849** (622-1230)	**1240** (882-1430)	692
	03-04	**139** (113-169)	**106** (93.1-118)	**328** (211-488)	**961** (580-1310)	**1310** (961-1770)	683
	05-06	**119** (103-138)	**87.4** (78.4-97.0)	**214** (154-388)	**711** (523-1000)	**1100** (838-1380)	652
	07-08	**128** (109-150)	**94.1** (82.2-110)	**309** (204-433)	**829** (715-981)	**1310** (981-1640)	587
Non-Hispanic whites	01-02	**128** (108-152)	**94.7** (83.4-109)	**223** (171-323)	**816** (642-914)	**1150** (910-1410)	1207
	03-04	**127** (110-146)	**89.8** (79.1-104)	**311** (212-418)	**980** (768-1180)	**1460** (1270-1700)	1035
	05-06	**130** (117-144)	**91.1** (81.0-104)	**290** (229-426)	**973** (836-1180)	**1380** (1130-1570)	966
	07-08	**122** (103-145)	**89.3** (76.2-108)	**244** (166-377)	**895** (579-1110)	**1250** (1080-1470)	1066

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyfluorene (creatinine corrected) (2011 - 2012)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**107** (99.8-114)	**80.6** (76.7-83.3)	**185** (155-225)	**753** (588-826)	**1170** (1040-1330)	2486
Age group							
6-11 years	11-12	**100** (90.6-111)	**93.3** (86.2-106)	**138** (120-168)	**210** (176-256)	**281** (220-349)	396
12-19 years	11-12	**88.6** (78.9-99.5)	**79.4** (70.0-88.4)	**122** (109-173)	**273** (223-392)	**519** (329-698)	389
20 years and older	11-12	**110** (102-119)	**78.3** (73.1-83.1)	**220** (177-262)	**832** (754-1030)	**1230** (1100-1530)	1701
Gender							
Males	11-12	**105** (90.1-122)	**78.7** (70.5-86.7)	**195** (137-279)	**754** (493-1010)	**1200** (894-1470)	1256
Females	11-12	**108** (94.7-123)	**81.8** (75.0-88.9)	**181** (144-235)	**702** (439-964)	**1130** (960-1380)	1230
Race/ethnicity							
Mexican Americans	11-12	**96.7** (77.8-120)	**78.0** (63.7-91.3)	**149** (121-220)	**535** (219-765)	**765** (510-1110)	315
Non-Hispanic blacks	11-12	**111** (101-121)	**86.8** (81.3-95.1)	**217** (183-267)	**610** (456-758)	**932** (753-1100)	663
Non-Hispanic whites	11-12	**108** (102-114)	**80.0** (75.0-85.4)	**199** (163-230)	**822** (644-1040)	**1230** (1100-1560)	811
All Hispanics	11-12	**103** (89.2-120)	**82.9** (73.1-94.6)	**163** (130-219)	**554** (301-749)	**839** (610-1110)	571
Asians	11-12	**77.5** (65.6-91.5)	**71.0** (60.6-77.8)	**114** (93.8-143)	**236** (178-363)	**474** (317-694)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 9-Hydroxyfluorene (2003 – 2008)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**267** (234-305)	**269** (233-313)	**541** (463-620)	**929** (839-1060)	**1390** (1130-1600)	2504
	05-06	**308** (289-328)	**300** (271-325)	**609** (563-652)	**1270** (1090-1420)	**1820** (1560-2110)	2422
	07-08	**337** (310-367)	**327** (295-367)	**677** (582-769)	**1300** (1060-1490)	**1960** (1670-2420)	2608
Age group							
6-11 years	03-04	**209** (184-238)	**216** (173-240)	**331** (267-458)	**594** (446-809)	**853** (553-1500)	333
	05-06	**184** (162-209)	**190** (153-210)	**324** (261-397)	**657** (448-783)	**823** (671-1220)	342
	07-08	**242** (208-282)	**229** (196-280)	**449** (326-580)	**791** (565-1040)	**1090** (787-1610)	389
12-19 years	03-04	**253** (216-297)	**271** (215-324)	**506** (413-560)	**894** (773-988)	**1210** (929-1510)	698
	05-06	**266** (245-290)	**278** (253-314)	**528** (454-574)	**842** (738-1020)	**1290** (1070-1510)	668
	07-08	**308** (255-371)	**295** (241-374)	**583** (459-736)	**1050** (829-1290)	**1400** (1080-1870)	401
20 years and older	03-04	**277** (240-320)	**279** (237-335)	**583** (476-656)	**979** (842-1140)	**1490** (1140-1770)	1473
	05-06	**335** (309-363)	**323** (292-349)	**653** (593-729)	**1360** (1180-1610)	**1950** (1650-2530)	1412
	07-08	**355** (323-390)	**352** (311-384)	**716** (629-835)	**1410** (1170-1670)	**2160** (1770-2780)	1818
Gender							
Males	03-04	**330** (291-374)	**330** (285-372)	**632** (583-709)	**1090** (898-1370)	**1720** (1360-2250)	1208
	05-06	**355** (325-387)	**334** (296-387)	**693** (608-783)	**1310** (1150-1620)	**2000** (1670-2560)	1208
	07-08	**401** (365-441)	**394** (356-442)	**778** (661-897)	**1420** (1260-1580)	**2120** (1770-2820)	1294
Females	03-04	**218** (188-253)	**226** (191-253)	**439** (357-521)	**833** (697-973)	**1100** (955-1310)	1296
	05-06	**269** (242-299)	**257** (230-297)	**503** (426-580)	**1090** (845-1400)	**1610** (1400-1920)	1214
	07-08	**286** (260-313)	**271** (246-299)	**557** (474-671)	**1110** (914-1400)	**1830** (1400-2400)	1314
Race/ethnicity							
Mexican Americans	03-04	**229** (200-261)	**232** (197-274)	**435** (362-492)	**773** (561-1010)	**1030** (849-1170)	614
	05-06	**232** (204-264)	**221** (186-262)	**407** (361-435)	**738** (596-840)	**1030** (788-1470)	614
	07-08	**267** (246-288)	**259** (236-285)	**476** (430-515)	**859** (732-1100)	**1470** (1070-1980)	532
Non-Hispanic blacks	03-04	**380** (311-465)	**357** (291-475)	**709** (559-825)	**1260** (1080-1600)	**1880** (1560-2330)	679
	05-06	**416** (360-481)	**406** (366-450)	**716** (593-943)	**1430** (1010-2250)	**2310** (1590-3410)	655
	07-08	**426** (376-482)	**423** (356-477)	**817** (693-978)	**1490** (1200-1950)	**2260** (1870-3040)	597
Non-Hispanic whites	03-04	**266** (226-313)	**266** (228-324)	**558** (453-659)	**939** (824-1130)	**1450** (1090-1770)	1048
	05-06	**306** (279-335)	**296** (257-331)	**613** (548-669)	**1290** (1150-1450)	**1730** (1530-2140)	966
	07-08	**345** (302-394)	**338** (286-398)	**700** (564-849)	**1380** (1030-1690)	**2040** (1570-2650)	1080

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 5.0, 5.0, and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 9-Hydroxyfluorene (2011 - 2012)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**245** (226-265)	**244** (226-259)	**501** (447-560)	**1080** (934-1190)	**1550** (1310-1840)	2491
Age group							
6-11 years	11-12	**147** (124-176)	**140** (119-161)	**308** (235-441)	**661** (471-845)	**1030** (684-1350)	397
12-19 years	11-12	**210** (176-249)	**213** (163-270)	**428** (318-576)	**796** (619-961)	**1010** (856-1340)	388
20 years and older	11-12	**265** (244-287)	**257** (236-284)	**537** (472-613)	**1180** (1040-1310)	**1700** (1330-2140)	1706
Gender							
Males	11-12	**278** (254-304)	**270** (248-296)	**566** (481-672)	**1150** (978-1310)	**1650** (1310-2280)	1258
Females	11-12	**217** (193-244)	**212** (187-243)	**438** (386-511)	**966** (786-1220)	**1440** (1140-1860)	1233
Race/ethnicity							
Mexican Americans	11-12	**204** (155-268)	**194** (152-228)	**391** (277-508)	**853** (528-1620)	**1650** (538-14400)	317
Non-Hispanic blacks	11-12	**356** (311-406)	**357** (310-398)	**677** (579-847)	**1350** (1030-1660)	**1940** (1570-2420)	664
Non-Hispanic whites	11-12	**238** (219-260)	**244** (221-262)	**492** (436-564)	**1070** (886-1190)	**1400** (1230-1710)	814
All Hispanics	11-12	**225** (190-267)	**208** (184-239)	**455** (373-528)	**914** (719-1310)	**1560** (940-2090)	572
Asians	11-12	**168** (135-209)	**164** (127-197)	**304** (230-427)	**762** (469-988)	**1200** (790-1820)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 9-Hydroxyfluorene (creatinine corrected) (2003 – 2008)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**252** (230-276)	**233** (205-266)	**412** (371-461)	**729** (609-905)	**1100** (918-1390)	2504
	05-06	**301** (281-322)	**270** (252-290)	**511** (460-575)	**1040** (908-1230)	**1510** (1360-1750)	2422
	07-08	**339** (309-372)	**303** (277-333)	**562** (493-645)	**1110** (908-1300)	**1660** (1430-1960)	2608
Age group							
6-11 years	03-04	**223** (200-247)	**208** (176-264)	**343** (299-389)	**548** (433-689)	**866** (533-958)	333
	05-06	**205** (180-234)	**195** (176-209)	**309** (272-371)	**590** (402-668)	**866** (620-1300)	342
	07-08	**298** (256-346)	**280** (249-331)	**463** (399-576)	**817** (576-1130)	**1130** (862-1230)	389
12-19 years	03-04	**192** (172-215)	**182** (161-200)	**323** (286-360)	**484** (412-696)	**738** (571-1110)	698
	05-06	**201** (183-220)	**194** (173-223)	**325** (283-343)	**511** (397-666)	**848** (521-941)	668
	07-08	**239** (204-280)	**235** (190-283)	**381** (312-462)	**596** (479-722)	**768** (660-1090)	401
20 years and older	03-04	**267** (242-294)	**243** (219-280)	**446** (392-490)	**788** (641-994)	**1280** (991-1560)	1473
	05-06	**336** (314-358)	**304** (284-323)	**573** (506-650)	**1200** (1000-1360)	**1720** (1490-1900)	1412
	07-08	**363** (330-399)	**314** (293-351)	**618** (533-738)	**1200** (1030-1450)	**1770** (1570-2040)	1818
Gender							
Males	03-04	**260** (238-283)	**236** (209-269)	**429** (382-480)	**739** (591-952)	**1300** (916-1800)	1208
	05-06	**286** (266-308)	**258** (235-291)	**498** (422-576)	**993** (858-1180)	**1410** (1240-1730)	1208
	07-08	**338** (308-372)	**303** (269-338)	**575** (516-626)	**1150** (987-1300)	**1690** (1420-1940)	1294
Females	03-04	**244** (217-275)	**227** (198-269)	**396** (342-467)	**717** (569-905)	**1020** (905-1280)	1296
	05-06	**316** (287-348)	**278** (253-303)	**532** (466-623)	**1100** (840-1370)	**1610** (1360-1840)	1214
	07-08	**340** (306-377)	**303** (274-335)	**555** (451-683)	**1030** (852-1330)	**1620** (1330-2040)	1314
Race/ethnicity							
Mexican Americans	03-04	**209** (188-232)	**195** (181-209)	**335** (293-379)	**541** (447-722)	**793** (569-1440)	614
	05-06	**208** (194-224)	**201** (180-220)	**304** (270-342)	**502** (425-584)	**663** (527-919)	614
	07-08	**260** (236-285)	**244** (226-259)	**388** (348-419)	**654** (527-858)	**1160** (775-1640)	532
Non-Hispanic blacks	03-04	**272** (226-326)	**258** (208-307)	**463** (349-568)	**777** (628-920)	**1040** (863-1300)	679
	05-06	**293** (258-332)	**261** (230-297)	**449** (377-554)	**851** (635-1080)	**1480** (925-2070)	655
	07-08	**331** (289-379)	**293** (257-333)	**542** (489-620)	**990** (805-1250)	**1550** (1160-2470)	597
Non-Hispanic whites	03-04	**263** (235-295)	**244** (211-287)	**439** (387-490)	**773** (607-1020)	**1290** (967-1700)	1048
	05-06	**323** (296-353)	**293** (266-322)	**570** (496-650)	**1180** (962-1360)	**1630** (1370-1840)	966
	07-08	**359** (316-407)	**314** (280-366)	**605** (497-750)	**1170** (935-1420)	**1740** (1460-2040)	1080

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 9-Hydroxyfluorene (creatinine corrected) (2011 - 2012)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**279** (261-298)	**248** (229-270)	**490** (431-544)	**934** (875-1010)	**1370** (1140-1660)	2489
Age group							
6-11 years	11-12	**212** (183-247)	**191** (163-225)	**328** (274-365)	**544** (413-928)	**1000** (688-1450)	396
12-19 years	11-12	**203** (182-225)	**188** (173-207)	**323** (273-380)	**538** (430-644)	**804** (595-876)	388
20 years and older	11-12	**301** (279-325)	**271** (244-301)	**561** (480-620)	**1030** (918-1140)	**1480** (1180-2010)	1705
Gender							
Males	11-12	**260** (241-281)	**226** (205-251)	**450** (395-540)	**908** (794-1010)	**1260** (1000-1650)	1257
Females	11-12	**297** (269-329)	**270** (229-322)	**505** (436-581)	**984** (914-1100)	**1480** (1140-1850)	1232
Race/ethnicity							
Mexican Americans	11-12	**229** (186-283)	**187** (162-235)	**376** (311-430)	**750** (430-1630)	**1480** (511-5650)	317
Non-Hispanic blacks	11-12	**277** (244-314)	**256** (231-294)	**447** (399-540)	**823** (640-1040)	**1240** (918-1460)	664
Non-Hispanic whites	11-12	**290** (268-314)	**257** (227-290)	**542** (451-614)	**961** (875-1080)	**1350** (1130-1660)	812
All Hispanics	11-12	**252** (217-293)	**220** (186-267)	**415** (343-492)	**1000** (520-1330)	**1390** (787-3250)	572
Asians	11-12	**224** (188-268)	**200** (166-273)	**381** (310-451)	**647** (500-865)	**914** (697-1430)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxyphenanthrene (2001 – 2008)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**140** (125-158)	**141** (130-154)	**266** (229-312)	**476** (426-539)	**684** (581-763)	2741
	03-04	**156** (140-173)	**166** (150-179)	**287** (263-321)	**464** (423-508)	**625** (538-745)	2496
	05-06	**152** (143-161)	**151** (138-163)	**275** (257-303)	**493** (428-549)	**669** (580-852)	2449
	07-08	**139** (130-149)	**140** (127-154)	**252** (228-272)	**442** (402-481)	**683** (577-760)	2608
Age group							
6-11 years	01-02	**119** (104-137)	**121** (98.0-142)	**228** (182-249)	**357** (265-501)	**501** (367-661)	387
	03-04	**138** (124-154)	**131** (111-161)	**222** (200-275)	**397** (304-500)	**615** (384-916)	328
	05-06	**111** (101-123)	**110** (96.9-121)	**176** (150-240)	**320** (251-375)	**381** (329-540)	345
	07-08	**121** (105-139)	**120** (96.5-154)	**200** (174-235)	**334** (247-401)	**405** (278-557)	389
12-19 years	01-02	**133** (110-162)	**131** (110-153)	**238** (198-303)	**431** (376-546)	**579** (439-820)	733
	03-04	**158** (141-178)	**171** (138-193)	**300** (262-333)	**470** (437-537)	**654** (563-745)	692
	05-06	**144** (132-157)	**154** (130-175)	**260** (236-286)	**425** (383-496)	**666** (496-845)	677
	07-08	**136** (122-152)	**144** (128-164)	**219** (199-283)	**374** (315-415)	**503** (392-607)	401
20 years and older	01-02	**145** (127-164)	**145** (133-164)	**274** (237-329)	**499** (440-565)	**713** (595-819)	1621
	03-04	**157** (141-176)	**167** (152-182)	**296** (264-337)	**469** (430-513)	**625** (534-783)	1476
	05-06	**159** (147-172)	**156** (141-172)	**287** (265-328)	**516** (438-615)	**744** (580-996)	1427
	07-08	**142** (132-153)	**141** (125-158)	**258** (241-280)	**470** (417-531)	**733** (622-856)	1818
Gender							
Males	01-02	**150** (133-169)	**145** (132-164)	**284** (235-348)	**501** (424-593)	**713** (575-845)	1344
	03-04	**176** (161-194)	**182** (167-198)	**321** (283-363)	**492** (459-536)	**662** (541-929)	1196
	05-06	**169** (156-183)	**166** (153-180)	**289** (265-334)	**519** (438-593)	**791** (562-1080)	1222
	07-08	**153** (140-167)	**152** (137-171)	**268** (251-292)	**448** (406-488)	**722** (566-813)	1294
Females	01-02	**132** (115-152)	**137** (121-151)	**254** (221-297)	**464** (390-520)	**654** (538-769)	1397
	03-04	**138** (122-156)	**144** (126-164)	**263** (240-294)	**430** (404-469)	**589** (489-680)	1300
	05-06	**137** (123-152)	**136** (117-153)	**260** (234-297)	**460** (391-553)	**648** (540-809)	1227
	07-08	**128** (120-136)	**128** (117-139)	**230** (205-258)	**432** (373-500)	**663** (527-740)	1314
Race/ethnicity							
Mexican Americans	01-02	**117** (90.8-152)	**116** (88.0-147)	**214** (157-306)	**369** (254-583)	**549** (342-847)	664
	03-04	**138** (120-158)	**152** (129-175)	**246** (213-291)	**413** (311-492)	**518** (352-896)	611
	05-06	**125** (104-151)	**129** (107-151)	**223** (174-276)	**376** (298-460)	**523** (399-617)	621
	07-08	**118** (108-129)	**108** (103-119)	**194** (172-216)	**341** (271-437)	**491** (417-738)	532
Non-Hispanic blacks	01-02	**150** (127-179)	**145** (126-170)	**287** (243-327)	**493** (423-629)	**713** (568-975)	690
	03-04	**182** (152-217)	**178** (149-212)	**346** (274-418)	**552** (459-645)	**797** (606-1050)	679
	05-06	**162** (148-177)	**155** (141-173)	**307** (259-349)	**517** (408-695)	**753** (545-1110)	658
	07-08	**142** (129-158)	**141** (128-163)	**264** (234-302)	**448** (401-511)	**613** (522-722)	597
Non-Hispanic whites	01-02	**144** (125-166)	**144** (131-162)	**276** (241-330)	**489** (436-552)	**661** (550-793)	1204
	03-04	**159** (140-180)	**168** (151-186)	**296** (265-330)	**475** (421-539)	**641** (528-843)	1046
	05-06	**156** (143-170)	**155** (137-173)	**279** (251-322)	**500** (414-606)	**743** (570-1050)	982
	07-08	**146** (133-159)	**149** (132-174)	**261** (235-292)	**453** (405-503)	**725** (590-836)	1080

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 3.5, 5.0, 5.0 and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxyphenanthrene (2011 - 2012)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**126** (117-135)	**126** (115-134)	**240** (219-254)	**426** (365-463)	**565** (493-682)	2492
Age group							
6-11 years	11-12	**98.6** (87.8-111)	**100** (89.0-115)	**199** (144-240)	**323** (270-405)	**473** (327-549)	397
12-19 years	11-12	**119** (103-138)	**132** (108-157)	**219** (192-252)	**332** (284-365)	**438** (344-505)	389
20 years and older	11-12	**130** (121-140)	**128** (119-138)	**248** (221-270)	**450** (372-499)	**589** (495-759)	1706
Gender							
Males	11-12	**133** (121-146)	**132** (115-149)	**246** (221-271)	**434** (365-476)	**589** (466-781)	1258
Females	11-12	**119** (109-131)	**117** (107-128)	**232** (212-249)	**408** (334-471)	**557** (465-682)	1234
Race/ethnicity							
Mexican Americans	11-12	**115** (91.3-146)	**112** (94.0-131)	**214** (156-260)	**371** (260-572)	**572** (284-1390)	317
Non-Hispanic blacks	11-12	**141** (129-155)	**140** (129-156)	**244** (221-268)	**439** (366-503)	**609** (495-849)	664
Non-Hispanic whites	11-12	**126** (117-136)	**128** (114-141)	**245** (219-261)	**428** (352-475)	**557** (456-733)	814
All Hispanics	11-12	**125** (108-146)	**123** (105-138)	**239** (207-260)	**391** (321-502)	**544** (439-826)	573
Asians	11-12	**91.3** (75.3-111)	**88.0** (65.0-114)	**173** (134-238)	**303** (260-387)	**447** (315-597)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxyphenanthrene (creatinine corrected) (2001 – 2008)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**132** (118-147)	**125** (113-141)	**210** (191-231)	**344** (310-385)	**464** (404-539)	2741
	03-04	**146** (138-155)	**141** (133-150)	**222** (205-244)	**352** (330-384)	**487** (416-546)	2496
	05-06	**147** (138-157)	**140** (130-148)	**229** (211-247)	**372** (339-406)	**502** (446-600)	2449
	07-08	**140** (130-151)	**137** (124-151)	**221** (207-236)	**345** (319-372)	**457** (407-522)	2608
Age group							
6-11 years	01-02	**133** (116-153)	**126** (110-147)	**188** (165-225)	**344** (245-437)	**467** (364-598)	387
	03-04	**145** (129-163)	**138** (121-155)	**205** (169-240)	**315** (244-456)	**477** (313-803)	328
	05-06	**124** (114-134)	**115** (103-133)	**191** (162-210)	**275** (230-340)	**368** (321-396)	345
	07-08	**149** (132-169)	**139** (127-158)	**221** (191-264)	**334** (275-410)	**424** (332-796)	389
12-19 years	01-02	**103** (87.9-121)	**97.3** (81.4-117)	**158** (131-192)	**240** (198-322)	**354** (235-531)	733
	03-04	**119** (108-130)	**115** (101-131)	**176** (157-197)	**275** (230-331)	**345** (269-496)	692
	05-06	**108** (97.5-119)	**108** (95.9-116)	**163** (148-180)	**268** (199-330)	**372** (262-609)	677
	07-08	**106** (94.9-117)	**106** (90.0-116)	**158** (147-171)	**243** (197-303)	**324** (250-407)	401
20 years and older	01-02	**137** (122-153)	**132** (117-145)	**223** (200-243)	**351** (319-395)	**476** (421-541)	1621
	03-04	**151** (142-161)	**147** (134-157)	**237** (212-254)	**365** (335-397)	**500** (422-580)	1476
	05-06	**158** (147-170)	**151** (137-163)	**244** (224-265)	**397** (362-420)	**554** (478-666)	1427
	07-08	**145** (135-157)	**142** (127-156)	**229** (214-251)	**354** (336-383)	**495** (420-560)	1818
Gender							
Males	01-02	**122** (108-137)	**116** (104-131)	**194** (173-218)	**321** (262-395)	**455** (348-642)	1344
	03-04	**138** (131-146)	**130** (117-143)	**201** (187-227)	**335** (301-391)	**437** (392-550)	1196
	05-06	**135** (126-145)	**125** (117-132)	**208** (187-229)	**341** (300-385)	**498** (391-634)	1222
	07-08	**129** (117-141)	**126** (112-141)	**207** (191-223)	**327** (290-344)	**410** (354-487)	1294
Females	01-02	**142** (125-160)	**136** (118-156)	**226** (199-256)	**355** (323-399)	**473** (421-541)	1397
	03-04	**154** (142-168)	**150** (138-160)	**241** (212-269)	**364** (323-425)	**505** (418-635)	1300
	05-06	**160** (149-172)	**152** (136-166)	**251** (229-275)	**398** (367-428)	**509** (435-638)	1227
	07-08	**152** (140-165)	**148** (133-162)	**231** (213-262)	**373** (329-411)	**478** (409-577)	1314
Race/ethnicity							
Mexican Americans	01-02	**110** (88.6-136)	**101** (85.5-131)	**162** (138-203)	**275** (187-452)	**400** (268-755)	664
	03-04	**124** (111-140)	**122** (107-136)	**183** (159-242)	**304** (246-392)	**392** (318-437)	611
	05-06	**112** (99.2-126)	**109** (87.1-129)	**170** (145-201)	**259** (228-307)	**353** (297-414)	621
	07-08	**115** (102-129)	**107** (96.7-118)	**159** (143-183)	**287** (218-344)	**424** (324-520)	532
Non-Hispanic blacks	01-02	**106** (88.7-127)	**102** (92.4-111)	**172** (141-203)	**274** (224-356)	**384** (308-598)	690
	03-04	**129** (112-148)	**126** (108-143)	**199** (173-242)	**337** (272-400)	**428** (374-522)	679
	05-06	**114** (106-121)	**107** (98.6-114)	**179** (163-189)	**301** (229-370)	**449** (321-771)	658
	07-08	**111** (98.8-124)	**109** (90.0-126)	**181** (153-201)	**293** (257-338)	**385** (338-446)	597
Non-Hispanic whites	01-02	**142** (126-161)	**137** (119-153)	**228** (206-247)	**363** (321-406)	**476** (411-552)	1204
	03-04	**157** (146-168)	**150** (140-159)	**241** (216-256)	**372** (335-424)	**515** (426-658)	1046
	05-06	**164** (152-176)	**154** (141-165)	**247** (228-268)	**398** (366-428)	**554** (466-739)	982
	07-08	**152** (139-166)	**152** (135-167)	**236** (217-258)	**354** (330-383)	**464** (407-551)	1080

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxyphenanthrene (creatinine corrected) (2011 - 2012)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**143** (134-153)	**134** (126-143)	**218** (200-247)	**357** (320-410)	**519** (473-554)	2490
Age group							
6-11 years	11-12	**142** (131-155)	**137** (123-150)	**206** (175-217)	**292** (255-363)	**450** (272-678)	396
12-19 years	11-12	**115** (101-132)	**117** (87.0-144)	**172** (153-213)	**254** (215-303)	**310** (254-359)	389
20 years and older	11-12	**148** (138-159)	**137** (128-146)	**232** (206-260)	**377** (337-459)	**543** (500-583)	1705
Gender							
Males	11-12	**125** (118-132)	**117** (107-124)	**188** (172-207)	**297** (272-360)	**437** (364-522)	1257
Females	11-12	**163** (148-180)	**152** (138-175)	**250** (217-281)	**406** (340-494)	**549** (500-664)	1233
Race/ethnicity							
Mexican Americans	11-12	**130** (111-152)	**117** (102-133)	**191** (148-235)	**373** (231-676)	**497** (337-837)	317
Non-Hispanic blacks	11-12	**110** (100-121)	**110** (96.1-122)	**168** (147-197)	**273** (238-319)	**387** (322-453)	664
Non-Hispanic whites	11-12	**154** (143-165)	**143** (133-154)	**234** (207-265)	**368** (335-450)	**543** (478-593)	812
All Hispanics	11-12	**140** (125-157)	**128** (117-141)	**214** (184-244)	**357** (274-481)	**504** (383-792)	573
Asians	11-12	**122** (106-141)	**119** (100-136)	**191** (165-222)	**286** (260-341)	**429** (336-571)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyphenanthrene (2001 – 2008)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**54.0** (46.0-63.5)	**58.0** (50.0-68.0)	**117** (102-140)	**240** (201-271)	**332** (299-377)	2742
	03-04	**59.3** (52.5-66.9)	**62.2** (55.4-69.7)	**117** (105-129)	**206** (180-235)	**291** (252-336)	2512
	05-06	**65.3** (60.9-70.0)	**63.3** (58.5-68.6)	**126** (111-139)	**234** (203-254)	**314** (282-383)	2410
	07-08	**63.6** (58.8-68.7)	**62.9** (58.0-68.7)	**117** (104-130)	**204** (184-223)	**300** (256-367)	2572
Age group							
6-11 years	01-02	**40.5** (34.3-47.7)	**46.0** (37.0-57.0)	**87.0** (71.0-101)	**170** (133-207)	**257** (195-320)	387
	03-04	**45.3** (40.0-51.3)	**48.1** (41.9-56.8)	**72.7** (63.2-89.4)	**135** (104-176)	**225** (136-299)	337
	05-06	**42.1** (38.4-46.1)	**40.1** (36.4-47.2)	**70.4** (58.1-83.2)	**110** (89.2-132)	**152** (112-213)	341
	07-08	**48.1** (41.8-55.4)	**46.4** (41.7-54.6)	**80.3** (68.2-95.4)	**144** (98.8-184)	**184** (122-229)	382
12-19 years	01-02	**49.5** (37.3-65.7)	**52.0** (41.0-68.0)	**108** (93.0-122)	**210** (145-270)	**281** (214-524)	733
	03-04	**58.0** (50.7-66.2)	**62.5** (54.5-71.6)	**104** (88.8-132)	**198** (166-215)	**258** (199-318)	707
	05-06	**60.4** (55.4-65.8)	**62.4** (56.3-67.1)	**114** (93.8-133)	**175** (156-195)	**250** (198-291)	664
	07-08	**59.4** (52.9-66.7)	**60.5** (51.5-67.0)	**97.4** (81.2-121)	**160** (133-204)	**223** (175-264)	398
20 years and older	01-02	**56.8** (48.1-66.9)	**60.0** (52.0-73.0)	**126** (104-152)	**249** (207-292)	**342** (308-398)	1622
	03-04	**61.5** (53.7-70.4)	**64.9** (57.2-73.5)	**125** (111-138)	**216** (187-250)	**310** (259-389)	1468
	05-06	**69.6** (63.6-76.2)	**67.3** (61.5-75.3)	**137** (118-154)	**251** (215-280)	**348** (298-446)	1405
	07-08	**66.2** (60.8-72.1)	**65.9** (60.4-71.2)	**123** (109-136)	**218** (195-251)	**334** (272-412)	1792
Gender							
Males	01-02	**62.1** (53.3-72.5)	**67.0** (58.0-80.0)	**136** (109-161)	**274** (245-303)	**367** (329-414)	1345
	03-04	**72.3** (64.4-81.3)	**71.6** (65.8-83.3)	**138** (123-150)	**240** (200-279)	**337** (279-428)	1211
	05-06	**76.5** (70.3-83.3)	**72.9** (67.4-81.3)	**141** (122-156)	**254** (219-296)	**383** (289-555)	1204
	07-08	**75.8** (70.3-81.8)	**73.5** (67.6-81.4)	**136** (126-149)	**229** (199-256)	**354** (276-408)	1277
Females	01-02	**47.4** (39.1-57.5)	**50.0** (41.0-60.0)	**105** (88.0-129)	**200** (171-240)	**294** (236-357)	1397
	03-04	**49.0** (42.4-56.6)	**52.5** (45.3-58.7)	**95.4** (84.1-110)	**166** (146-202)	**247** (202-291)	1301
	05-06	**56.0** (50.2-62.5)	**54.4** (49.5-61.0)	**107** (94.7-125)	**206** (173-245)	**275** (248-343)	1206
	07-08	**53.7** (48.9-59.0)	**53.0** (48.9-59.2)	**97.0** (87.0-111)	**173** (146-207)	**280** (206-327)	1295
Race/ethnicity							
Mexican Americans	01-02	**46.8** (32.7-66.8)	**51.0** (36.0-73.0)	**97.0** (72.0-140)	**191** (122-332)	**303** (187-652)	665
	03-04	**53.9** (46.7-62.1)	**60.1** (50.8-68.6)	**104** (89.5-115)	**164** (144-187)	**200** (187-219)	627
	05-06	**54.6** (45.0-66.3)	**56.2** (47.1-67.7)	**96.2** (84.4-108)	**164** (120-202)	**213** (175-294)	612
	07-08	**58.2** (53.9-62.7)	**59.3** (50.8-63.0)	**98.6** (92.5-113)	**167** (141-193)	**252** (192-395)	528
Non-Hispanic blacks	01-02	**71.1** (58.0-87.1)	**74.0** (66.0-90.0)	**152** (124-182)	**262** (217-311)	**374** (284-560)	690
	03-04	**81.2** (68.1-96.7)	**73.4** (61.8-101)	**158** (125-199)	**280** (219-374)	**390** (289-574)	678
	05-06	**77.3** (69.0-86.6)	**75.3** (65.8-83.5)	**141** (114-172)	**267** (202-340)	**363** (275-546)	641
	07-08	**72.8** (65.2-81.3)	**70.7** (62.6-80.2)	**127** (115-149)	**251** (206-284)	**367** (284-455)	597
Non-Hispanic whites	01-02	**53.1** (43.6-64.6)	**57.0** (48.0-68.0)	**117** (99.0-144)	**242** (199-286)	**333** (303-385)	1204
	03-04	**58.2** (50.1-67.7)	**60.7** (52.5-71.0)	**115** (97.9-133)	**209** (172-255)	**299** (251-351)	1044
	05-06	**65.2** (59.4-71.5)	**63.7** (57.0-70.4)	**130** (109-144)	**244** (206-261)	**343** (282-439)	974
	07-08	**63.3** (56.6-70.8)	**64.0** (56.4-71.1)	**121** (102-135)	**203** (174-234)	**298** (238-410)	1050

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 3.2, 5.0, 5.0 and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyphenanthrene (2011 - 2012)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**60.8** (56.8-65.2)	**60.0** (56.0-65.0)	**113** (105-123)	**214** (187-242)	**288** (263-317)	2489
Age group							
6-11 years	11-12	**39.6** (34.3-45.6)	**39.0** (33.0-46.0)	**78.0** (61.0-96.0)	**133** (109-153)	**173** (133-237)	397
12-19 years	11-12	**56.5** (49.8-64.1)	**62.0** (53.0-70.0)	**105** (88.0-114)	**162** (134-183)	**212** (169-248)	389
20 years and older	11-12	**64.5** (60.0-69.4)	**64.0** (57.0-68.0)	**121** (107-132)	**233** (198-263)	**311** (271-340)	1703
Gender							
Males	11-12	**70.3** (63.9-77.4)	**69.0** (63.0-77.0)	**130** (115-143)	**246** (198-288)	**339** (277-384)	1257
Females	11-12	**53.0** (48.7-57.5)	**52.0** (50.0-56.0)	**100** (89.0-109)	**184** (158-210)	**259** (216-282)	1232
Race/ethnicity							
Mexican Americans	11-12	**56.3** (43.9-72.1)	**56.0** (46.0-69.0)	**97.0** (79.0-140)	**180** (128-276)	**276** (175-508)	317
Non-Hispanic blacks	11-12	**78.9** (72.3-86.2)	**75.0** (68.0-81.0)	**145** (122-166)	**246** (212-297)	**368** (286-436)	663
Non-Hispanic whites	11-12	**58.3** (54.7-62.2)	**58.0** (53.0-64.0)	**109** (100-121)	**204** (169-243)	**282** (247-312)	812
All Hispanics	11-12	**62.2** (52.7-73.4)	**62.0** (53.0-75.0)	**112** (99.0-134)	**202** (175-248)	**268** (214-416)	573
Asians	11-12	**50.3** (40.5-62.4)	**50.0** (39.0-58.0)	**96.0** (78.0-118)	**187** (126-240)	**257** (193-338)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyphenanthrene (creatinine corrected) (2001 – 2008)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**50.6** (43.3-59.2)	**52.5** (46.4-59.6)	**91.4** (78.7-108)	**164** (138-200)	**233** (206-275)	2742
	03-04	**55.4** (51.1-60.0)	**52.3** (48.8-55.8)	**85.8** (79.4-97.0)	**150** (128-174)	**212** (180-252)	2512
	05-06	**63.1** (58.9-67.5)	**57.0** (53.3-61.9)	**101** (92.8-110)	**178** (157-194)	**245** (209-295)	2410
	07-08	**64.0** (58.9-69.4)	**60.3** (55.3-66.5)	**98.2** (87.5-108)	**163** (151-179)	**229** (199-248)	2572
Age group							
6-11 years	01-02	**45.3** (38.8-52.8)	**50.0** (40.0-57.8)	**85.9** (69.6-100)	**144** (105-217)	**234** (138-397)	387
	03-04	**47.9** (43.6-52.7)	**46.6** (41.0-51.4)	**66.3** (60.3-72.8)	**106** (81.0-125)	**183** (108-295)	337
	05-06	**45.9** (42.0-50.1)	**43.6** (38.4-48.7)	**65.8** (56.1-85.2)	**101** (85.4-110)	**116** (101-135)	341
	07-08	**59.7** (51.2-69.4)	**56.5** (49.4-65.2)	**85.1** (73.1-107)	**134** (105-187)	**187** (121-437)	382
12-19 years	01-02	**38.4** (29.6-49.7)	**38.5** (30.6-48.7)	**64.9** (52.4-84.0)	**117** (86.7-167)	**173** (128-305)	733
	03-04	**43.6** (39.3-48.5)	**40.8** (37.7-45.0)	**70.6** (55.8-84.7)	**106** (88.2-123)	**127** (115-176)	707
	05-06	**44.5** (39.9-49.7)	**42.7** (38.9-47.1)	**66.1** (58.0-73.7)	**111** (80.0-129)	**146** (115-232)	664
	07-08	**46.1** (42.0-50.5)	**47.0** (39.7-53.0)	**69.7** (62.0-78.0)	**100** (83.0-113)	**127** (105-188)	398
20 years and older	01-02	**53.7** (46.2-62.4)	**55.6** (49.4-62.7)	**94.6** (84.1-112)	**173** (145-201)	**241** (209-287)	1622
	03-04	**58.7** (53.6-64.2)	**54.8** (50.7-60.9)	**91.6** (83.5-105)	**164** (139-182)	**227** (183-291)	1468
	05-06	**69.1** (64.1-74.6)	**63.6** (58.4-67.8)	**111** (102-123)	**191** (168-216)	**267** (232-316)	1405
	07-08	**67.8** (62.4-73.8)	**64.1** (57.6-71.6)	**105** (95.5-119)	**177** (160-194)	**239** (211-255)	1792
Gender							
Males	01-02	**50.4** (43.3-58.5)	**52.5** (47.2-59.2)	**91.4** (78.6-103)	**176** (140-208)	**245** (206-349)	1345
	03-04	**56.6** (52.5-61.0)	**52.3** (48.1-57.1)	**84.7** (79.2-96.4)	**157** (132-180)	**227** (184-284)	1211
	05-06	**61.2** (56.7-65.9)	**55.7** (50.0-59.3)	**102** (89.3-111)	**161** (137-194)	**244** (190-310)	1204
	07-08	**64.0** (59.3-69.1)	**59.8** (55.3-64.1)	**99.7** (90.5-108)	**172** (152-191)	**229** (211-243)	1277
Females	01-02	**50.9** (42.7-60.7)	**52.8** (45.5-61.0)	**91.6** (75.0-115)	**158** (133-183)	**214** (200-245)	1397
	03-04	**54.3** (48.7-60.5)	**52.3** (47.0-57.2)	**88.1** (76.4-101)	**146** (118-179)	**202** (175-246)	1301
	05-06	**65.0** (60.0-70.3)	**60.5** (55.1-65.3)	**101** (91.6-113)	**184** (165-201)	**256** (224-312)	1206
	07-08	**63.9** (57.8-70.7)	**61.5** (54.0-69.3)	**95.8** (83.7-115)	**159** (140-189)	**229** (186-256)	1295
Race/ethnicity							
Mexican Americans	01-02	**43.7** (31.9-59.8)	**44.0** (34.3-58.8)	**80.8** (59.8-115)	**146** (103-245)	**245** (144-394)	665
	03-04	**48.8** (42.5-55.9)	**50.1** (42.4-58.8)	**79.5** (68.2-86.1)	**124** (96.2-149)	**155** (127-206)	627
	05-06	**48.7** (43.0-55.2)	**46.0** (39.4-56.2)	**75.1** (62.9-85.8)	**111** (94.5-138)	**146** (121-178)	612
	07-08	**56.7** (51.1-62.8)	**55.0** (47.7-62.2)	**83.7** (76.2-90.4)	**133** (107-180)	**198** (145-233)	528
Non-Hispanic blacks	01-02	**50.2** (40.5-62.2)	**49.7** (44.3-56.0)	**87.7** (72.6-103)	**174** (127-224)	**257** (178-459)	690
	03-04	**57.6** (49.8-66.7)	**53.1** (45.7-63.5)	**90.3** (77.9-117)	**152** (128-186)	**218** (173-348)	678
	05-06	**54.3** (49.7-59.3)	**47.7** (45.4-51.3)	**84.8** (71.3-97.8)	**150** (116-192)	**211** (167-298)	641
	07-08	**56.6** (50.4-63.6)	**51.2** (46.6-55.9)	**95.5** (77.7-107)	**154** (136-178)	**212** (188-232)	597
Non-Hispanic whites	01-02	**52.5** (43.8-62.9)	**54.8** (47.7-61.9)	**92.7** (80.5-113)	**170** (140-204)	**233** (202-293)	1204
	03-04	**57.1** (51.7-63.0)	**52.9** (49.1-57.2)	**88.5** (79.2-102)	**159** (128-187)	**237** (180-295)	1044
	05-06	**67.9** (62.6-73.7)	**60.9** (56.5-66.5)	**111** (101-123)	**191** (162-224)	**274** (231-323)	974
	07-08	**65.9** (59.4-73.3)	**62.8** (55.1-72.0)	**100** (87.2-119)	**166** (147-190)	**229** (197-252)	1050

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyphenanthrene (creatinine corrected) (2011 - 2012)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**69.2** (65.5-73.1)	**62.2** (59.1-66.9)	**106** (97.4-116)	**182** (167-202)	**248** (218-293)	2487
Age group							
6-11 years	11-12	**56.8** (50.8-63.6)	**54.7** (48.8-60.0)	**78.9** (68.8-95.3)	**121** (105-148)	**180** (131-200)	396
12-19 years	11-12	**54.6** (49.9-59.6)	**52.4** (44.9-64.0)	**81.4** (70.8-92.6)	**112** (103-147)	**163** (121-203)	389
20 years and older	11-12	**73.3** (69.2-77.7)	**65.3** (60.9-70.0)	**116** (105-127)	**200** (178-215)	**280** (221-336)	1702
Gender							
Males	11-12	**65.9** (61.8-70.3)	**58.2** (54.6-61.2)	**104** (96.9-113)	**181** (159-202)	**248** (192-385)	1256
Females	11-12	**72.5** (66.9-78.6)	**67.9** (62.7-73.4)	**108** (94.7-125)	**187** (165-206)	**248** (213-293)	1231
Race/ethnicity							
Mexican Americans	11-12	**63.3** (53.1-75.4)	**55.2** (47.3-66.7)	**93.2** (78.0-108)	**173** (116-237)	**243** (166-600)	317
Non-Hispanic blacks	11-12	**61.4** (56.1-67.1)	**59.2** (52.6-65.4)	**90.8** (84.4-98.9)	**162** (124-192)	**227** (187-272)	663
Non-Hispanic whites	11-12	**70.9** (67.0-74.9)	**64.0** (59.3-68.8)	**110** (101-120)	**187** (167-203)	**248** (206-293)	810
All Hispanics	11-12	**69.6** (61.1-79.3)	**61.2** (53.1-70.4)	**104** (91.3-123)	**180** (144-237)	**256** (202-455)	573
Asians	11-12	**67.4** (56.5-80.3)	**65.2** (50.0-82.4)	**105** (88.6-130)	**162** (140-200)	**231** (171-313)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyphenanthrene (2001 – 2008)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**105** (92.5-118)	**105** (92.0-118)	**200** (179-225)	**401** (336-480)	**649** (542-747)	2741
	03-04	**115** (104-128)	**118** (107-129)	**219** (201-237)	**424** (351-487)	**647** (509-788)	2426
	05-06	**103** (96.1-109)	**99.8** (90.3-107)	**200** (185-210)	**399** (365-429)	**593** (463-746)	2448
	07-08	**97.6** (91.6-104)	**97.8** (90.9-106)	**178** (164-195)	**319** (283-353)	**490** (426-557)	2601
Age group							
6-11 years	01-02	**105** (91.1-122)	**109** (82.0-138)	**195** (160-231)	**298** (245-346)	**412** (319-545)	387
	03-04	**116** (99.9-134)	**107** (93.0-135)	**205** (170-223)	**333** (241-435)	**472** (322-881)	325
	05-06	**89.6** (79.6-101)	**84.0** (72.6-103)	**154** (123-176)	**245** (193-316)	**316** (245-569)	345
	07-08	**100** (85.9-117)	**102** (83.4-126)	**175** (144-183)	**251** (194-328)	**348** (239-862)	389
12-19 years	01-02	**104** (87.3-125)	**107** (90.0-122)	**201** (165-231)	**329** (255-445)	**459** (331-631)	733
	03-04	**120** (103-141)	**127** (107-149)	**221** (195-262)	**366** (327-424)	**564** (391-730)	677
	05-06	**105** (96.5-113)	**104** (97.3-116)	**193** (166-217)	**323** (275-383)	**453** (377-604)	676
	07-08	**103** (92.9-114)	**103** (89.5-116)	**173** (146-195)	**293** (246-352)	**371** (323-436)	401
20 years and older	01-02	**105** (91.7-119)	**105** (89.0-118)	**201** (180-231)	**433** (366-515)	**683** (597-806)	1621
	03-04	**114** (103-128)	**118** (105-130)	**221** (203-243)	**450** (353-505)	**696** (511-885)	1424
	05-06	**104** (95.3-113)	**101** (89.6-113)	**206** (188-223)	**419** (384-466)	**657** (481-832)	1427
	07-08	**96.5** (89.3-104)	**96.9** (87.3-106)	**183** (163-201)	**331** (285-393)	**535** (432-624)	1811
Gender							
Males	01-02	**122** (107-138)	**117** (106-132)	**224** (188-278)	**474** (372-597)	**734** (597-1010)	1344
	03-04	**137** (122-154)	**135** (119-157)	**251** (221-287)	**487** (398-579)	**754** (606-913)	1167
	05-06	**125** (114-137)	**119** (107-136)	**227** (204-261)	**427** (395-491)	**768** (520-951)	1222
	07-08	**117** (109-127)	**115** (103-130)	**209** (191-229)	**352** (322-390)	**557** (462-674)	1290
Females	01-02	**90.8** (77.7-106)	**93.0** (80.0-108)	**184** (155-207)	**328** (291-399)	**518** (434-649)	1397
	03-04	**97.7** (86.5-110)	**100** (86.6-114)	**193** (170-210)	**351** (287-445)	**531** (447-647)	1259
	05-06	**84.6** (75.6-94.5)	**82.4** (73.1-92.5)	**159** (143-176)	**363** (285-404)	**480** (421-577)	1226
	07-08	**81.9** (76.8-87.3)	**81.7** (74.7-91.0)	**148** (134-173)	**272** (237-326)	**439** (355-501)	1311
Race/ethnicity							
Mexican Americans	01-02	**83.5** (64.1-109)	**84.0** (64.0-111)	**144** (117-198)	**259** (193-430)	**454** (253-1140)	664
	03-04	**92.7** (81.3-106)	**92.8** (84.1-111)	**164** (133-204)	**317** (236-374)	**436** (338-501)	576
	05-06	**77.0** (64.1-92.5)	**74.8** (60.0-90.8)	**138** (110-162)	**260** (191-312)	**366** (299-471)	620
	07-08	**79.1** (71.4-87.7)	**75.3** (66.4-85.2)	**133** (118-154)	**250** (176-330)	**414** (302-511)	529
Non-Hispanic blacks	01-02	**145** (122-172)	**135** (120-163)	**281** (228-346)	**516** (414-684)	**957** (609-1410)	690
	03-04	**166** (141-195)	**159** (137-193)	**313** (249-399)	**542** (458-670)	**798** (579-1200)	686
	05-06	**138** (120-159)	**125** (113-147)	**260** (211-329)	**466** (365-671)	**716** (491-1100)	658
	07-08	**129** (115-145)	**129** (112-148)	**237** (205-266)	**427** (349-514)	**657** (514-839)	596
Non-Hispanic whites	01-02	**104** (90.8-120)	**106** (92.0-120)	**199** (177-224)	**401** (331-495)	**649** (518-747)	1204
	03-04	**114** (100-129)	**117** (104-128)	**220** (201-237)	**440** (332-509)	**702** (505-915)	1010
	05-06	**101** (93.6-110)	**101** (89.3-112)	**200** (181-213)	**402** (368-434)	**657** (449-829)	982
	07-08	**97.0** (87.7-107)	**97.9** (87.3-111)	**179** (155-202)	**315** (270-355)	**468** (371-590)	1077

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 3.6, 5.0, 5.0 and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyphenanthrene (2011 - 2012)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**61.9** (57.2-67.0)	**62.0** (57.0-66.0)	**127** (115-136)	**235** (201-280)	**377** (289-479)	2491
Age group							
6-11 years	11-12	**55.3** (48.4-63.2)	**60.0** (48.0-73.0)	**104** (92.0-122)	**192** (169-248)	**287** (214-413)	397
12-19 years	11-12	**63.6** (55.1-73.5)	**65.0** (57.0-76.0)	**125** (115-144)	**198** (169-235)	**296** (200-389)	389
20 years and older	11-12	**62.4** (57.2-68.1)	**61.0** (54.0-67.0)	**130** (111-144)	**251** (206-296)	**413** (295-499)	1705
Gender							
Males	11-12	**72.3** (63.9-81.7)	**68.0** (60.0-78.0)	**145** (127-168)	**273** (205-392)	**475** (296-651)	1258
Females	11-12	**53.4** (48.3-59.0)	**55.0** (48.0-59.0)	**105** (93.0-126)	**207** (175-235)	**297** (251-364)	1233
Race/ethnicity							
Mexican Americans	11-12	**54.8** (42.1-71.2)	**54.0** (46.0-69.0)	**103** (79.0-139)	**197** (128-364)	**308** (139-1270)	317
Non-Hispanic blacks	11-12	**92.6** (84.3-102)	**98.0** (84.0-105)	**185** (164-202)	**348** (261-441)	**519** (428-611)	664
Non-Hispanic whites	11-12	**58.2** (54.3-62.4)	**58.0** (50.0-64.0)	**119** (102-132)	**221** (184-265)	**325** (265-475)	813
All Hispanics	11-12	**61.3** (51.2-73.3)	**61.0** (54.0-72.0)	**123** (101-149)	**230** (172-308)	**377** (244-452)	573
Asians	11-12	**50.0** (39.8-62.9)	**47.0** (37.0-59.0)	**106** (69.0-141)	**213** (136-278)	**282** (215-400)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyphenanthrene (creatinine corrected) (2001 – 2008)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**98.0** (87.4-110)	**86.5** (78.8-97.1)	**158** (142-174)	**299** (252-342)	**428** (365-621)	2741
	03-04	**108** (101-115)	**99.5** (91.9-106)	**172** (158-189)	**321** (273-363)	**497** (406-566)	2426
	05-06	**99.5** (93.6-106)	**88.1** (83.8-93.5)	**164** (151-175)	**326** (273-364)	**443** (402-525)	2448
	07-08	**98.1** (91.3-106)	**91.3** (81.8-100)	**159** (141-174)	**273** (246-301)	**380** (333-442)	2601
Age group							
6-11 years	01-02	**118** (103-135)	**114** (94.9-131)	**173** (150-201)	**289** (238-368)	**410** (308-544)	387
	03-04	**124** (110-138)	**119** (110-129)	**165** (145-202)	**283** (231-402)	**484** (269-710)	325
	05-06	**99.6** (89.4-111)	**93.5** (85.7-107)	**146** (118-165)	**232** (171-292)	**292** (232-352)	345
	07-08	**123** (107-142)	**120** (105-143)	**183** (159-200)	**230** (201-382)	**382** (222-948)	389
12-19 years	01-02	**81.1** (70.1-93.8)	**78.0** (66.7-89.4)	**116** (96.5-144)	**205** (153-275)	**283** (198-511)	733
	03-04	**90.3** (81.5-100)	**84.9** (76.1-93.9)	**139** (116-160)	**212** (193-231)	**295** (225-429)	677
	05-06	**78.2** (70.9-86.3)	**72.5** (66.7-82.1)	**111** (98.8-121)	**183** (141-262)	**291** (211-465)	676
	07-08	**80.0** (73.6-86.9)	**74.4** (67.0-87.5)	**117** (110-126)	**188** (151-223)	**243** (213-284)	401
20 years and older	01-02	**98.9** (88.3-111)	**85.3** (78.3-96.6)	**164** (147-183)	**320** (273-356)	**488** (379-774)	1621
	03-04	**109** (102-117)	**99.1** (91.7-106)	**180** (161-198)	**343** (282-385)	**523** (417-608)	1424
	05-06	**103** (96.3-111)	**90.3** (84.4-97.8)	**177** (161-200)	**350** (319-387)	**506** (426-538)	1427
	07-08	**98.8** (91.2-107)	**90.3** (80.2-100)	**163** (140-184)	**290** (262-321)	**388** (338-464)	1811
Gender							
Males	01-02	**98.6** (87.7-111)	**87.1** (79.5-98.2)	**159** (138-188)	**310** (245-368)	**505** (356-761)	1344
	03-04	**107** (98.2-116)	**99.2** (87.4-109)	**169** (154-184)	**305** (261-343)	**491** (383-592)	1167
	05-06	**100** (92.6-109)	**89.2** (81.5-97.0)	**166** (147-184)	**326** (260-365)	**430** (364-553)	1222
	07-08	**98.9** (91.2-107)	**91.3** (81.3-101)	**166** (146-184)	**288** (263-310)	**382** (321-449)	1290
Females	01-02	**97.5** (84.9-112)	**86.4** (76.9-100)	**158** (139-178)	**292** (245-333)	**410** (352-583)	1397
	03-04	**109** (99.6-119)	**100** (88.9-110)	**176** (155-202)	**328** (265-398)	**497** (380-594)	1259
	05-06	**98.7** (91.6-106)	**87.3** (80.4-95.1)	**160** (144-177)	**332** (284-375)	**446** (393-518)	1226
	07-08	**97.4** (89.6-106)	**90.9** (79.4-102)	**150** (131-181)	**262** (223-305)	**377** (299-446)	1311
Race/ethnicity							
Mexican Americans	01-02	**78.2** (62.4-98.0)	**70.8** (56.2-87.4)	**130** (92.9-171)	**224** (173-321)	**333** (224-656)	664
	03-04	**83.8** (75.1-93.6)	**79.5** (72.9-87.0)	**137** (111-165)	**224** (188-274)	**305** (247-406)	576
	05-06	**68.8** (61.0-77.7)	**61.3** (51.5-73.2)	**96.9** (82.9-122)	**175** (159-206)	**291** (200-387)	620
	07-08	**77.1** (68.5-86.7)	**71.6** (63.1-78.8)	**113** (99.6-133)	**200** (160-227)	**275** (230-334)	529
Non-Hispanic blacks	01-02	**102** (85.8-122)	**91.9** (79.8-108)	**160** (133-202)	**296** (234-475)	**673** (347-1260)	690
	03-04	**118** (103-135)	**106** (90.5-126)	**186** (156-219)	**357** (257-439)	**505** (384-772)	686
	05-06	**97.0** (86.6-109)	**85.7** (77.3-94.1)	**141** (125-172)	**271** (217-366)	**443** (283-623)	658
	07-08	**101** (88.7-114)	**91.3** (80.9-104)	**176** (143-208)	**297** (238-360)	**411** (344-512)	596
Non-Hispanic whites	01-02	**103** (91.5-117)	**89.4** (80.2-102)	**167** (148-193)	**324** (272-368)	**447** (365-738)	1204
	03-04	**112** (104-121)	**103** (96.9-108)	**183** (160-200)	**346** (278-402)	**544** (417-656)	1010
	05-06	**106** (98.8-114)	**93.6** (86.4-102)	**178** (160-206)	**348** (317-387)	**506** (416-551)	982
	07-08	**101** (91.1-112)	**96.5** (83.5-107)	**163** (137-190)	**280** (243-317)	**378** (316-447)	1077

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyphenanthrene (creatinine corrected) (2011 - 2012)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**70.5** (66.7-74.6)	**62.6** (58.5-67.3)	**118** (104-128)	**226** (201-247)	**325** (271-366)	2489
Age group							
6-11 years	11-12	**79.6** (71.8-88.3)	**73.9** (65.0-84.2)	**116** (100-131)	**170** (140-220)	**238** (168-383)	396
12-19 years	11-12	**61.5** (56.0-67.6)	**55.7** (47.0-69.0)	**89.0** (83.2-101)	**150** (121-196)	**229** (173-243)	389
20 years and older	11-12	**71.0** (66.9-75.4)	**61.6** (58.3-67.0)	**123** (110-139)	**246** (209-258)	**334** (278-409)	1704
Gender							
Males	11-12	**67.8** (61.9-74.2)	**60.4** (52.2-68.5)	**117** (99.1-130)	**222** (188-246)	**320** (243-474)	1257
Females	11-12	**73.2** (67.0-80.0)	**64.2** (59.7-72.1)	**120** (99.2-138)	**238** (187-271)	**325** (276-362)	1232
Race/ethnicity							
Mexican Americans	11-12	**61.6** (50.6-75.0)	**54.2** (44.9-66.7)	**91.4** (75.2-118)	**204** (110-343)	**303** (195-556)	317
Non-Hispanic blacks	11-12	**72.1** (66.5-78.1)	**68.3** (60.5-77.5)	**117** (106-134)	**202** (163-245)	**311** (239-388)	664
Non-Hispanic whites	11-12	**70.8** (66.7-75.2)	**62.0** (56.8-67.4)	**121** (105-131)	**238** (200-254)	**325** (258-383)	811
All Hispanics	11-12	**68.6** (60.2-78.1)	**61.8** (54.3-73.2)	**104** (88.1-126)	**206** (150-291)	**343** (225-500)	573
Asians	11-12	**67.0** (55.6-80.7)	**60.8** (50.5-79.6)	**107** (82.1-144)	**178** (150-206)	**255** (184-354)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 4-Hydroxyphenanthrene (2003 – 2006)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**25.1** (22.6-27.9)	**25.9** (22.5-29.6)	**53.7** (47.4-59.7)	**96.8** (85.0-116)	**152** (118-176)	2443
	05-06	**29.3** (26.7-32.2)	**29.2** (25.1-31.8)	**56.9** (50.1-66.1)	**108** (93.1-124)	**157** (134-176)	2131
Age group							
6-11 years	03-04	**25.2** (22.3-28.4)	**26.3** (22.8-30.0)	**45.7** (38.6-53.3)	**95.5** (61.7-137)	**138** (95.1-202)	321
	05-06	**20.4** (17.7-23.4)	**20.2** (17.6-23.8)	**35.1** (27.4-41.6)	**59.6** (43.3-93.0)	**96.1** (62.2-155)	307
12-19 years	03-04	**23.7** (20.3-27.6)	**25.8** (20.5-31.4)	**49.9** (45.2-53.0)	**77.4** (67.2-95.1)	**123** (94.6-142)	683
	05-06	**26.6** (23.0-30.8)	**27.6** (22.4-31.2)	**50.9** (43.5-56.8)	**79.4** (71.1-89.9)	**108** (89.9-140)	568
20 years and older	03-04	**25.3** (22.4-28.6)	**25.8** (22.4-29.5)	**54.8** (48.6-61.9)	**101** (87.1-120)	**163** (117-197)	1439
	05-06	**31.1** (28.1-34.3)	**30.7** (26.4-33.7)	**62.9** (52.6-75.1)	**119** (97.1-140)	**165** (138-188)	1256
Gender							
Males	03-04	**30.0** (26.5-34.0)	**29.6** (25.5-35.1)	**60.4** (53.4-68.7)	**110** (90.6-130)	**169** (118-211)	1180
	05-06	**31.9** (28.6-35.5)	**30.7** (25.0-36.8)	**60.3** (49.7-72.7)	**111** (92.3-134)	**153** (119-226)	1064
Females	03-04	**21.1** (18.7-23.8)	**21.3** (18.3-25.3)	**46.5** (41.6-53.3)	**88.4** (73.5-103)	**136** (106-157)	1263
	05-06	**27.1** (23.4-31.4)	**26.6** (22.7-31.1)	**54.0** (41.9-66.9)	**107** (82.6-140)	**165** (120-189)	1067
Race/ethnicity							
Mexican Americans	03-04	**23.5** (20.9-26.3)	**24.4** (21.4-29.4)	**46.1** (40.1-53.0)	**80.5** (60.9-94.1)	**99.7** (80.2-154)	607
	05-06	**24.5** (20.3-29.6)	**24.8** (20.2-31.3)	**43.7** (37.2-54.5)	**81.2** (62.8-94.4)	**112** (82.6-134)	466
Non-Hispanic blacks	03-04	**35.4** (29.6-42.3)	**37.1** (29.8-46.1)	**71.4** (60.3-83.3)	**123** (104-145)	**167** (133-215)	657
	05-06	**36.8** (31.8-42.5)	**33.6** (29.7-42.0)	**66.0** (56.0-80.5)	**130** (98.0-168)	**190** (133-276)	612
Non-Hispanic whites	03-04	**24.4** (21.5-27.7)	**25.2** (21.8-29.1)	**51.5** (45.1-58.5)	**97.9** (77.4-127)	**163** (113-202)	1021
	05-06	**28.6** (25.2-32.4)	**28.6** (24.5-31.9)	**55.5** (47.3-69.3)	**108** (90.9-136)	**163** (134-188)	890

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 5.0 and 5.0 respectively.
+Not measured in Survey years 2007-2008 because of potential interferences that would affect the quality of the results.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 4-Hydroxyphenanthrene (2011 - 2012)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**20.5** (19.3-21.8)	**19.0** (18.0-21.0)	**36.0** (34.0-40.0)	**74.0** (62.0-82.0)	**99.0** (88.0-114)	2487
Age group							
6-11 years	11-12	**17.1** (15.6-18.8)	**16.0** (13.0-19.0)	**32.0** (25.0-37.0)	**54.0** (46.0-59.0)	**72.0** (56.0-96.0)	397
12-19 years	11-12	**20.4** (18.1-23.0)	**18.0** (17.0-23.0)	**34.0** (31.0-42.0)	**57.0** (47.0-75.0)	**84.0** (57.0-120)	389
20 years and older	11-12	**21.0** (19.6-22.4)	**20.0** (18.0-21.0)	**38.0** (35.0-42.0)	**78.0** (69.0-87.0)	**101** (89.0-128)	1701
Gender							
Males	11-12	**21.6** (19.8-23.7)	**22.0** (18.0-24.0)	**38.0** (34.0-43.0)	**74.0** (63.0-83.0)	**99.0** (85.0-124)	1255
Females	11-12	**19.5** (18.1-21.1)	**18.0** (16.0-19.0)	**36.0** (33.0-40.0)	**74.0** (59.0-82.0)	**98.0** (87.0-114)	1232
Race/ethnicity							
Mexican Americans	11-12	**19.7** (16.2-24.0)	**18.0** (15.0-22.0)	**34.0** (27.0-45.0)	**65.0** (40.0-96.0)	**91.0** (53.0-130)	317
Non-Hispanic blacks	11-12	**28.4** (26.0-31.0)	**28.0** (25.0-31.0)	**50.0** (44.0-57.0)	**90.0** (75.0-109)	**122** (103-136)	662
Non-Hispanic whites	11-12	**19.4** (18.3-20.5)	**18.0** (16.0-20.0)	**35.0** (32.0-38.0)	**73.0** (57.0-81.0)	**94.0** (82.0-114)	812
All Hispanics	11-12	**21.0** (18.5-23.8)	**20.0** (17.0-23.0)	**38.0** (32.0-46.0)	**68.0** (52.0-88.0)	**91.0** (69.0-122)	573
Asians	11-12	**16.8** (14.7-19.1)	**15.0** (13.0-17.0)	**30.0** (25.0-33.0)	**55.0** (37.0-86.0)	**91.0** (53.0-110)	351

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 4-Hydroxyphenanthrene (creatinine corrected) (2003 – 2006)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**23.3** (21.7-25.0)	**22.7** (20.5-24.9)	**42.0** (38.6-44.6)	**74.3** (66.3-85.4)	**114** (102-130)	2443
	05-06	**28.9** (26.6-31.4)	**26.9** (24.1-29.4)	**48.4** (43.9-53.7)	**88.3** (77.5-102)	**127** (106-145)	2131
Age group							
6-11 years	03-04	**26.3** (23.7-29.2)	**24.8** (21.6-28.6)	**43.3** (35.2-48.8)	**72.9** (56.3-113)	**126** (79.3-173)	321
	05-06	**22.9** (19.8-26.5)	**21.7** (20.0-24.8)	**36.2** (27.8-43.7)	**50.0** (42.7-79.3)	**79.3** (50.0-98.3)	307
12-19 years	03-04	**17.7** (15.9-19.8)	**16.7** (15.7-18.4)	**31.4** (26.0-37.1)	**47.9** (40.7-54.1)	**61.7** (51.7-86.0)	683
	05-06	**20.1** (18.2-22.2)	**19.0** (16.5-22.9)	**30.0** (28.3-33.0)	**48.7** (41.0-63.5)	**79.4** (53.8-98.2)	568
20 years and older	03-04	**24.0** (22.0-26.2)	**23.3** (21.1-25.4)	**43.5** (39.4-48.1)	**79.0** (66.8-100)	**121** (104-138)	1439
	05-06	**31.4** (29.0-34.1)	**29.4** (26.9-32.4)	**54.6** (48.0-61.6)	**102** (86.4-109)	**139** (115-166)	1256
Gender							
Males	03-04	**23.4** (21.6-25.4)	**22.7** (20.3-24.9)	**40.9** (35.9-45.7)	**72.7** (61.5-86.8)	**112** (100-126)	1180
	05-06	**26.1** (23.8-28.7)	**24.1** (22.2-28.2)	**44.3** (40.0-51.1)	**74.3** (61.6-87.7)	**102** (87.3-120)	1064
Females	03-04	**23.2** (21.2-25.5)	**22.8** (19.7-26.0)	**42.5** (38.3-46.2)	**75.1** (63.4-94.0)	**119** (93.1-139)	1263
	05-06	**31.8** (28.7-35.3)	**28.9** (25.8-31.8)	**54.2** (46.0-63.2)	**103** (85.4-127)	**145** (119-174)	1067
Race/ethnicity							
Mexican Americans	03-04	**21.2** (18.8-23.8)	**20.7** (19.1-22.9)	**35.9** (29.8-40.7)	**59.0** (43.3-87.5)	**83.4** (60.9-139)	607
	05-06	**22.5** (20.1-25.3)	**21.6** (18.8-27.1)	**34.7** (31.4-41.5)	**54.5** (48.2-61.6)	**81.3** (59.8-86.1)	466
Non-Hispanic blacks	03-04	**25.0** (21.6-28.9)	**25.3** (23.1-28.8)	**42.0** (37.4-51.4)	**75.0** (61.6-87.9)	**102** (79.2-137)	657
	05-06	**25.8** (23.0-29.0)	**24.5** (22.0-26.8)	**39.4** (36.2-44.7)	**68.5** (59.8-88.6)	**103** (80.0-146)	612
Non-Hispanic whites	03-04	**23.7** (21.5-26.2)	**22.4** (19.4-25.4)	**43.6** (38.8-47.3)	**82.2** (68.5-101)	**126** (103-143)	1021
	05-06	**30.5** (27.3-34.1)	**28.5** (25.0-31.6)	**53.0** (45.5-61.5)	**102** (83.0-115)	**138** (112-174)	890

+ Not measured in Survey years 2007-2008 because of potential interferences that would affect the quality of the results.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 4-Hydroxyphenanthrene (creatinine corrected) (2011 - 2012)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**23.3** (22.4-24.2)	**22.0** (20.9-22.9)	**36.9** (33.8-40.0)	**65.0** (60.0-76.3)	**106** (85.9-121)	2485
Age group							
6-11 years	11-12	**24.4** (22.1-26.9)	**23.7** (21.5-25.9)	**36.2** (31.9-39.1)	**55.0** (47.9-69.7)	**78.9** (57.1-126)	396
12-19 years	11-12	**19.7** (17.7-21.9)	**19.7** (17.2-21.7)	**28.4** (26.3-34.7)	**46.6** (38.5-57.9)	**64.9** (46.1-78.9)	389
20 years and older	11-12	**23.8** (22.6-25.0)	**22.1** (20.9-23.3)	**38.4** (34.2-43.8)	**70.5** (60.0-88.8)	**115** (91.4-136)	1700
Gender							
Males	11-12	**20.3** (19.3-21.4)	**19.4** (18.5-20.6)	**31.4** (28.4-35.4)	**57.7** (53.3-63.8)	**79.6** (63.8-111)	1254
Females	11-12	**26.6** (24.9-28.5)	**24.5** (22.9-26.2)	**41.8** (37.4-46.6)	**78.9** (66.7-88.8)	**117** (95.7-142)	1231
Race/ethnicity							
Mexican Americans	11-12	**22.2** (19.1-25.8)	**20.9** (19.2-23.6)	**35.5** (29.6-42.1)	**59.7** (43.2-67.6)	**67.6** (48.0-183)	317
Non-Hispanic blacks	11-12	**22.1** (20.3-24.0)	**21.3** (19.7-23.4)	**34.9** (30.8-38.8)	**53.5** (49.0-61.3)	**74.5** (63.7-84.7)	662
Non-Hispanic whites	11-12	**23.5** (22.1-24.9)	**22.0** (20.3-23.4)	**37.3** (32.3-43.7)	**70.5** (60.0-81.6)	**111** (88.8-142)	810
All Hispanics	11-12	**23.5** (21.2-25.9)	**22.9** (20.7-25.5)	**37.4** (33.0-41.8)	**60.1** (45.5-79.6)	**90.7** (60.1-133)	573
Asians	11-12	**22.5** (20.2-25.1)	**21.5** (17.9-24.5)	**34.9** (32.3-40.1)	**60.8** (50.5-71.0)	**85.1** (64.2-102)	351

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxypyrene (2003 – 2008)

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**89.2** (79.8-99.7)	**91.3** (83.5-98.8)	**189** (168-208)	**389** (345-459)	**569** (493-676)	2515
	05-06	**98.3** (91.0-106)	**94.0** (85.5-102)	**206** (181-227)	**440** (373-521)	**673** (585-829)	2415
	07-08	**118** (108-129)	**118** (107-133)	**233** (208-263)	**439** (392-487)	**675** (543-844)	2581
Age group							
6-11 years	03-04	**112** (96.9-130)	**119** (99.0-143)	**193** (163-229)	**351** (233-484)	**514** (336-680)	333
	05-06	**103** (91.3-117)	**99.8** (91.7-105)	**170** (139-206)	**342** (222-413)	**469** (353-786)	342
	07-08	**146** (127-168)	**149** (131-171)	**231** (203-288)	**395** (293-557)	**569** (395-1060)	387
12-19 years	03-04	**119** (103-137)	**115** (98.0-145)	**244** (213-274)	**506** (359-608)	**705** (636-788)	705
	05-06	**118** (104-134)	**108** (93.2-132)	**218** (179-266)	**409** (332-557)	**837** (481-992)	667
	07-08	**149** (130-170)	**145** (118-165)	**282** (228-343)	**452** (399-515)	**614** (476-843)	401
20 years and older	03-04	**82.8** (73.0-93.8)	**83.8** (75.6-92.4)	**177** (155-203)	**387** (337-437)	**553** (483-644)	1477
	05-06	**94.9** (86.3-104)	**89.1** (79.8-100)	**208** (173-245)	**476** (368-563)	**677** (563-913)	1406
	07-08	**111** (100-123)	**114** (95.7-129)	**226** (199-258)	**446** (370-506)	**719** (525-904)	1793
Gender							
Males	03-04	**108** (96.0-122)	**111** (98.7-121)	**227** (197-265)	**459** (387-518)	**644** (526-811)	1214
	05-06	**114** (104-125)	**108** (98.4-119)	**235** (196-279)	**465** (386-585)	**793** (634-980)	1208
	07-08	**134** (120-150)	**131** (113-155)	**260** (229-293)	**474** (409-560)	**748** (554-956)	1279
Females	03-04	**74.0** (64.3-85.1)	**75.3** (66.3-83.9)	**158** (143-173)	**334** (258-407)	**502** (389-604)	1301
	05-06	**84.8** (74.5-96.5)	**80.0** (69.8-89.9)	**173** (148-213)	**421** (313-521)	**617** (534-677)	1207
	07-08	**105** (94.7-116)	**111** (92.6-123)	**213** (194-227)	**387** (342-444)	**580** (486-769)	1302
Race/ethnicity							
Mexican Americans	03-04	**89.4** (78.6-102)	**92.4** (79.8-113)	**173** (153-191)	**331** (281-415)	**495** (404-548)	623
	05-06	**95.6** (81.0-113)	**92.3** (80.1-112)	**179** (149-220)	**332** (261-455)	**490** (367-756)	611
	07-08	**119** (110-129)	**117** (104-132)	**196** (170-230)	**380** (289-494)	**593** (485-755)	531
Non-Hispanic blacks	03-04	**128** (105-155)	**126** (108-153)	**296** (226-355)	**553** (400-669)	**699** (564-935)	681
	05-06	**116** (98.5-137)	**108** (91.0-124)	**230** (185-332)	**517** (401-639)	**743** (559-1060)	653
	07-08	**136** (122-153)	**142** (122-160)	**282** (250-320)	**548** (480-610)	**752** (617-871)	592
Non-Hispanic whites	03-04	**84.8** (73.5-97.9)	**85.4** (75.6-97.3)	**182** (156-214)	**386** (336-462)	**566** (470-749)	1050
	05-06	**94.9** (85.4-106)	**91.3** (80.3-104)	**203** (170-235)	**399** (351-538)	**677** (563-899)	968
	07-08	**116** (102-131)	**117** (102-136)	**235** (198-287)	**436** (364-500)	**719** (473-981)	1059

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 5.0, 5.0, and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxypyrene (2011 - 2012)

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**111** (101-123)	**113** (99.0-124)	**217** (196-254)	**437** (373-501)	**635** (538-784)	2487
Age group							
6-11 years	11-12	**130** (111-153)	**127** (107-160)	**252** (202-301)	**386** (362-462)	**521** (431-693)	397
12-19 years	11-12	**131** (110-156)	**141** (117-159)	**247** (199-331)	**451** (331-547)	**555** (454-716)	387
20 years and older	11-12	**107** (96.2-119)	**104** (95.0-118)	**208** (181-244)	**443** (373-504)	**685** (543-882)	1703
Gender							
Males	11-12	**122** (107-139)	**121** (103-131)	**231** (198-276)	**494** (380-606)	**756** (547-1020)	1255
Females	11-12	**102** (92.6-113)	**104** (92.0-117)	**209** (183-243)	**384** (340-447)	**543** (443-652)	1232
Race/ethnicity							
Mexican Americans	11-12	**127** (104-157)	**129** (112-157)	**225** (191-262)	**435** (262-685)	**685** (342-1060)	316
Non-Hispanic blacks	11-12	**140** (123-160)	**138** (117-168)	**292** (246-335)	**476** (384-685)	**779** (596-1070)	662
Non-Hispanic whites	11-12	**104** (94.6-113)	**102** (94.0-116)	**199** (176-231)	**447** (349-513)	**606** (504-803)	812
All Hispanics	11-12	**131** (114-152)	**136** (119-156)	**248** (209-279)	**416** (329-501)	**654** (440-873)	572
Asians	11-12	**85.6** (72.3-101)	**78.0** (65.0-94.0)	**175** (124-218)	**301** (243-359)	**373** (325-571)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxypyrene (creatinine corrected) (2003 – 2008)

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**83.4** (77.4-90.0)	**79.9** (72.6-86.9)	**149** (133-167)	**279** (236-343)	**424** (352-474)	2515
	05-06	**95.1** (89.1-102)	**85.5** (81.0-91.1)	**173** (161-184)	**338** (292-371)	**492** (427-550)	2415
	07-08	**119** (110-129)	**113** (103-127)	**200** (180-224)	**364** (321-411)	**527** (467-587)	2581
Age group							
6-11 years	03-04	**119** (102-138)	**112** (98.2-137)	**185** (156-225)	**336** (227-440)	**475** (336-566)	333
	05-06	**115** (102-128)	**105** (94.7-116)	**181** (145-217)	**285** (242-385)	**407** (308-517)	342
	07-08	**180** (156-206)	**171** (145-197)	**255** (233-316)	**457** (329-593)	**604** (457-1320)	387
12-19 years	03-04	**89.4** (77.7-103)	**81.6** (74.3-93.0)	**146** (123-187)	**269** (196-364)	**364** (251-611)	705
	05-06	**88.7** (78.7-99.9)	**80.9** (73.8-92.3)	**146** (115-176)	**250** (199-358)	**400** (252-682)	667
	07-08	**116** (105-127)	**112** (98.3-127)	**178** (154-202)	**301** (245-349)	**405** (321-558)	401
20 years and older	03-04	**79.1** (73.2-85.4)	**73.5** (66.7-82.3)	**142** (127-160)	**278** (236-331)	**424** (349-472)	1477
	05-06	**94.1** (87.1-102)	**82.5** (75.8-89.3)	**177** (163-194)	**352** (294-397)	**502** (444-558)	1406
	07-08	**114** (105-125)	**106** (95.3-124)	**194** (173-217)	**364** (317-415)	**510** (456-591)	1793
Gender							
Males	03-04	**84.8** (77.3-93.1)	**82.8** (72.7-91.0)	**163** (145-175)	**290** (241-352)	**416** (353-513)	1214
	05-06	**91.6** (84.3-99.6)	**84.6** (76.9-95.5)	**169** (152-182)	**308** (268-364)	**492** (426-589)	1208
	07-08	**113** (102-125)	**109** (94.3-124)	**193** (176-214)	**379** (308-440)	**549** (456-629)	1279
Females	03-04	**82.1** (73.5-91.7)	**78.3** (69.2-86.8)	**137** (119-165)	**274** (215-350)	**440** (313-479)	1301
	05-06	**98.7** (91.7-106)	**86.8** (78.5-92.8)	**175** (156-195)	**345** (295-390)	**482** (395-558)	1207
	07-08	**125** (114-137)	**119** (104-135)	**203** (179-238)	**348** (302-405)	**503** (425-619)	1302
Race/ethnicity							
Mexican Americans	03-04	**81.2** (73.9-89.2)	**80.9** (70.4-91.7)	**146** (122-167)	**247** (221-301)	**372** (321-460)	623
	05-06	**84.9** (76.4-94.2)	**78.4** (67.7-91.2)	**132** (118-145)	**237** (203-287)	**374** (279-482)	611
	07-08	**116** (107-125)	**105** (96.5-116)	**173** (156-188)	**296** (250-367)	**501** (395-629)	531
Non-Hispanic blacks	03-04	**91.0** (77.7-107)	**92.4** (76.6-106)	**173** (145-211)	**315** (227-433)	**451** (301-680)	681
	05-06	**81.2** (70.7-93.2)	**74.9** (65.6-84.8)	**140** (113-173)	**295** (206-403)	**477** (324-643)	653
	07-08	**106** (93.1-121)	**104** (93.4-123)	**201** (162-249)	**352** (302-464)	**537** (384-662)	592
Non-Hispanic whites	03-04	**83.3** (75.4-92.0)	**77.9** (69.1-86.8)	**148** (127-174)	**287** (241-360)	**438** (360-506)	1050
	05-06	**99.3** (91.2-108)	**90.6** (82.2-99.5)	**188** (169-200)	**358** (305-395)	**495** (427-555)	968
	07-08	**120** (108-134)	**113** (97.7-135)	**206** (178-237)	**379** (300-438)	**510** (438-617)	1059

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxypyrene (creatinine corrected) (2011 - 2012)

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**127** (119-137)	**119** (110-128)	**215** (193-241)	**395** (356-449)	**542** (464-703)	2485
Age group							
6-11 years	11-12	**187** (165-212)	**181** (153-213)	**276** (232-317)	**415** (356-477)	**500** (450-671)	396
12-19 years	11-12	**126** (110-144)	**121** (102-143)	**194** (156-256)	**313** (252-396)	**409** (325-480)	387
20 years and older	11-12	**122** (114-131)	**112** (103-122)	**207** (189-227)	**411** (356-464)	**589** (466-793)	1702
Gender							
Males	11-12	**114** (103-127)	**106** (95.0-115)	**196** (170-230)	**378** (296-452)	**506** (394-804)	1254
Females	11-12	**141** (130-154)	**133** (124-143)	**232** (209-262)	**422** (364-464)	**589** (464-748)	1231
Race/ethnicity							
Mexican Americans	11-12	**143** (123-166)	**136** (116-153)	**225** (176-270)	**385** (267-525)	**512** (374-829)	316
Non-Hispanic blacks	11-12	**109** (94.8-126)	**114** (95.2-138)	**191** (166-233)	**330** (276-396)	**453** (411-556)	662
Non-Hispanic whites	11-12	**127** (117-138)	**113** (104-126)	**218** (192-249)	**415** (356-465)	**580** (464-793)	810
All Hispanics	11-12	**147** (133-162)	**144** (127-158)	**244** (200-262)	**395** (295-458)	**525** (436-600)	572
Asians	11-12	**115** (101-130)	**113** (96.3-131)	**173** (156-191)	**263** (228-326)	**437** (303-601)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxynaphthalene (1-Naphthol) (2003 – 2008)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2.68** (2.36-3.05)	**2.26** (1.98-2.65)	**7.66** (6.27-9.42)	**18.5** (15.5-20.9)	**26.1** (23.0-33.6)	2595
	05-06	**2.64** (2.39-2.92)	**1.94** (1.69-2.24)	**8.45** (7.05-9.98)	**29.9** (23.2-37.1)	**48.1** (41.3-65.6)	2385
	07-08	**2.58** (2.19-3.03)	**1.98** (1.75-2.28)	**6.87** (5.00-8.76)	**17.3** (13.0-22.2)	**29.2** (22.2-41.1)	2495
Age group							
6-11 years	03-04	**1.54** (1.36-1.75)	**1.33** (1.11-1.68)	**2.79** (2.18-3.52)	**5.77** (4.11-8.20)	**10.5** (5.87-17.0)	340
	05-06	**1.19** (1.01-1.40)	**1.03** (.775-1.28)	**2.15** (1.69-2.73)	**8.10** (3.87-10.7)	**11.0** (7.29-44.1)	336
	07-08	**1.54** (1.28-1.85)	**1.50** (1.22-1.68)	**3.09** (2.17-3.80)	**5.94** (4.16-9.29)	**9.36** (4.68-14.3)	370
12-19 years	03-04	**1.96** (1.68-2.28)	**1.67** (1.50-1.97)	**4.19** (3.10-5.40)	**10.5** (8.43-14.3)	**20.9** (13.5-26.1)	727
	05-06	**1.71** (1.49-1.96)	**1.36** (1.11-1.70)	**3.76** (3.10-4.37)	**14.1** (9.09-23.5)	**25.8** (12.4-46.2)	655
	07-08	**1.83** (1.49-2.26)	**1.51** (1.19-2.01)	**4.03** (2.55-5.75)	**10.0** (6.70-13.5)	**14.8** (12.0-21.3)	386
20 years and older	03-04	**3.02** (2.58-3.52)	**2.65** (2.20-3.20)	**9.42** (7.32-11.5)	**20.5** (16.5-23.4)	**29.4** (23.4-37.4)	1528
	05-06	**3.10** (2.74-3.51)	**2.33** (2.03-2.82)	**10.5** (8.18-13.3)	**34.5** (26.7-43.4)	**55.1** (42.2-80.4)	1394
	07-08	**2.88** (2.37-3.49)	**2.26** (1.83-2.80)	**8.20** (6.01-10.7)	**19.6** (15.0-25.5)	**33.0** (23.6-54.9)	1739
Gender							
Males	03-04	**3.17** (2.82-3.56)	**2.84** (2.37-3.39)	**8.79** (7.13-11.0)	**19.6** (16.1-22.2)	**25.8** (22.5-30.6)	1243
	05-06	**2.97** (2.62-3.35)	**2.37** (1.98-2.97)	**8.76** (7.14-10.7)	**28.9** (21.7-33.0)	**44.1** (36.0-52.3)	1197
	07-08	**2.94** (2.58-3.36)	**2.37** (2.05-2.93)	**7.75** (5.87-9.83)	**15.9** (13.8-21.3)	**28.2** (21.4-36.8)	1239
Females	03-04	**2.29** (1.94-2.72)	**1.84** (1.50-2.31)	**6.38** (4.45-8.81)	**17.9** (14.0-21.5)	**28.5** (21.5-37.4)	1352
	05-06	**2.36** (2.01-2.77)	**1.59** (1.42-1.82)	**7.35** (5.57-10.2)	**33.6** (21.6-43.9)	**56.8** (41.6-101)	1188
	07-08	**2.27** (1.85-2.79)	**1.58** (1.32-1.97)	**5.31** (4.03-7.76)	**17.7** (11.9-24.8)	**32.0** (21.3-78.9)	1256
Race/ethnicity							
Mexican Americans	03-04	**1.95** (1.72-2.19)	**1.65** (1.37-2.04)	**4.38** (3.52-5.30)	**11.6** (9.04-15.5)	**20.1** (14.9-22.5)	651
	05-06	**1.54** (1.29-1.83)	**1.29** (1.09-1.55)	**3.71** (2.68-4.43)	**11.8** (8.10-15.6)	**22.2** (15.2-34.0)	607
	07-08	**1.61** (1.38-1.89)	**1.48** (1.23-1.66)	**3.38** (2.59-4.04)	**8.75** (6.12-11.9)	**16.1** (8.19-29.4)	505
Non-Hispanic blacks	03-04	**3.34** (2.80-3.99)	**2.65** (2.19-3.46)	**7.84** (6.52-10.8)	**20.8** (17.0-28.6)	**34.7** (25.4-48.9)	695
	05-06	**3.42** (2.83-4.14)	**2.67** (2.20-3.43)	**11.9** (9.12-14.6)	**29.9** (24.4-41.0)	**56.4** (42.8-71.6)	641
	07-08	**2.88** (2.48-3.35)	**2.41** (2.12-2.91)	**8.15** (5.31-10.7)	**19.3** (13.7-27.1)	**31.6** (21.3-42.4)	574
Non-Hispanic whites	03-04	**2.80** (2.41-3.25)	**2.31** (1.93-2.84)	**8.63** (6.82-11.0)	**19.9** (15.9-22.6)	**27.6** (23.4-35.1)	1084
	05-06	**2.72** (2.30-3.21)	**1.98** (1.56-2.43)	**8.66** (6.73-11.3)	**32.5** (22.6-42.2)	**51.3** (41.0-85.5)	952
	07-08	**2.79** (2.23-3.50)	**2.08** (1.74-2.69)	**7.52** (4.97-10.4)	**18.7** (12.6-26.9)	**32.2** (22.5-62.0)	1022

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.047, 0.048, and 0.045 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxynapthalene (1-Naphthol) (2011 - 2012)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.67** (1.52-1.84)	**1.41** (1.26-1.59)	**3.90** (3.25-5.05)	**13.1** (10.9-15.7)	**22.1** (19.0-26.6)	2492
Age group							
6-11 years	11-12	**.960** (.803-1.15)	**.970** (.727-1.20)	**2.01** (1.63-2.51)	**4.02** (3.11-7.07)	**7.99** (5.05-12.6)	397
12-19 years	11-12	**1.16** (.895-1.50)	**1.04** (.843-1.33)	**2.34** (1.77-3.34)	**8.38** (3.43-15.0)	**14.6** (8.38-22.4)	389
20 years and older	11-12	**1.88** (1.71-2.06)	**1.59** (1.40-1.73)	**5.05** (3.98-5.82)	**14.7** (12.4-17.9)	**23.7** (19.8-34.2)	1706
Gender							
Males	11-12	**1.89** (1.66-2.15)	**1.62** (1.36-1.78)	**4.57** (3.25-5.91)	**13.5** (10.6-19.0)	**22.9** (16.7-36.7)	1258
Females	11-12	**1.49** (1.20-1.84)	**1.21** (.997-1.52)	**3.51** (2.67-5.12)	**12.9** (8.54-16.4)	**21.1** (17.7-24.6)	1234
Race/ethnicity							
Mexican Americans	11-12	**1.27** (.962-1.68)	**1.15** (.805-1.46)	**2.92** (1.79-4.58)	**7.97** (4.82-13.3)	**14.2** (7.97-20.2)	317
Non-Hispanic blacks	11-12	**2.14** (1.85-2.47)	**1.78** (1.51-2.01)	**5.17** (3.73-6.71)	**14.9** (11.2-19.5)	**22.8** (16.8-42.9)	664
Non-Hispanic whites	11-12	**1.70** (1.53-1.90)	**1.47** (1.28-1.65)	**4.20** (3.15-5.43)	**13.6** (10.9-17.4)	**22.4** (17.7-33.4)	814
All Hispanics	11-12	**1.35** (1.12-1.64)	**1.13** (.896-1.41)	**3.17** (2.39-4.46)	**9.30** (6.34-11.6)	**16.1** (11.3-20.9)	573
Asians	11-12	**1.29** (1.01-1.66)	**1.16** (.885-1.50)	**3.00** (2.02-4.61)	**8.61** (5.33-11.5)	**15.5** (10.6-21.9)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.044.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxynaphthalene (1-Naphthol) (creatinine corrected) (2003 – 2008)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2.52** (2.28-2790)	**2.10** (1.87-2.40)	**6.56** (5.43-8.18)	**15.1** (13.50-17.4)	**21.8** (18.2-25.4)	2595
	05-06	**2.56** (2.29-2860)	**1.79** (1.57-2.06)	**7.57** (5.89-9.40)	**24.7** (20.40-31.0)	**39.6** (34.1-53.0)	2385
	07-08	**2.59** (2.19-3060)	**1.98** (1.66-2.40)	**6.25** (4.69-8.22)	**16.1** (13.60-18.8)	**25.3** (20.9-32.8)	2495
Age group							
6-11 years	03-04	**1.63** (1.43-1.86)	**1.36** (1.18-1.74)	**2.77** (2.26-3.20)	**5.69** (3.99-8.95)	**10.2** (5.69-16.4)	340
	05-06	**1.30** (1.09-1.55)	**1.09** (.938-1.33)	**2.21** (1.99-2.81)	**6.15** (3.33-10.3)	**10.3** (6.82-28.0)	336
	07-08	**1.87** (1.56-2.24)	**1.67** (1.35-2.15)	**3.31** (2.61-4.65)	**7.36** (5.13-8.83)	**9.99** (8.06-11.3)	370
12-19 years	03-04	**1.47** (1.26-1.71)	**1.20** (1.02-1.39)	**2.84** (2.49-4.08)	**7.56** (5.47-9.12)	**10.8** (9.12-13.4)	727
	05-06	**1.29** (1.14-1.45)	**.995** (.854-1.10)	**2.70** (2.27-3.35)	**8.76** (5.83-10.8)	**12.5** (9.37-19.6)	655
	07-08	**1.39** (1.18-1.64)	**1.13** (.833-1.58)	**3.21** (2.02-3.63)	**6.95** (4.79-8.41)	**9.93** (7.84-11.9)	386
20 years and older	03-04	**2.90** (2.59-3.25)	**2.52** (2.12-3.06)	**8.21** (6.45-9.81)	**16.9** (14.4-19.8)	**24.2** (20.0-27.2)	1528
	05-06	**3.08** (2.72-3.50)	**2.32** (1.91-2.72)	**10.1** (7.67-13.9)	**29.8** (23.9-34.1)	**46.4** (39.1-57.3)	1394
	07-08	**2.96** (2.43-3.60)	**2.36** (1.88-2.77)	**7.42** (5.75-10.2)	**18.5** (14.9-22.6)	**27.9** (22.3-45.0)	1739
Gender							
Males	03-04	**2.49** (2.25-2.75)	**2.14** (1.86-2.59)	**6.56** (5.50-8.01)	**13.5** (12.3-14.4)	**18.3** (16.6-20.7)	1243
	05-06	**2.38** (2.11-2.68)	**1.89** (1.59-2.21)	**6.45** (4.94-9.21)	**19.2** (16.1-22.4)	**31.7** (22.1-38.4)	1197
	07-08	**2.48** (2.21-2.77)	**2.07** (1.74-2.39)	**6.17** (5.07-7.52)	**13.8** (11.9-16.0)	**20.7** (16.7-24.0)	1239
Females	03-04	**2.56** (2.22-2.95)	**2.04** (1.73-2.44)	**6.68** (5.00-8.85)	**17.5** (13.5-21.7)	**24.7** (19.8-30.6)	1352
	05-06	**2.75** (2.37-3.19)	**1.75** (1.46-2.06)	**8.05** (6.08-11.8)	**31.5** (24.7-39.5)	**54.1** (40.8-64.5)	1188
	07-08	**2.70** (2.13-3.43)	**1.94** (1.58-2.50)	**6.31** (4.29-9.33)	**18.9** (13.8-23.7)	**32.8** (22.3-104)	1256
Race/ethnicity							
Mexican Americans	03-04	**1.75** (1.59-1.93)	**1.50** (1.26-1.69)	**3.24** (2.90-4.25)	**8.55** (7.15-12.0)	**17.5** (13.5-21.4)	651
	05-06	**1.37** (1.15-1.64)	**1.08** (.940-1.38)	**2.83** (2.13-3.82)	**9.50** (5.95-12.6)	**18.8** (12.0-21.6)	607
	07-08	**1.59** (1.29-1.95)	**1.29** (1.03-1.62)	**3.10** (2.24-5.05)	**7.58** (5.42-10.6)	**11.8** (7.86-26.1)	505
Non-Hispanic blacks	03-04	**2.37** (2.02-2.78)	**2.00** (1.56-2.42)	**5.90** (4.44-7.07)	**13.8** (8.93-18.7)	**21.1** (17.1-27.8)	695
	05-06	**2.40** (1.99-2.89)	**1.98** (1.52-2.51)	**7.17** (5.28-8.85)	**20.6** (15.4-29.2)	**39.2** (29.2-54.3)	641
	07-08	**2.22** (1.87-2.64)	**1.87** (1.47-2.41)	**6.05** (4.34-7.94)	**13.6** (10.6-17.0)	**21.3** (14.1-31.8)	574
Non-Hispanic whites	03-04	**2.77** (2.46-3.12)	**2.35** (1.94-2.90)	**8.03** (6.33-9.26)	**16.6** (14.4-18.5)	**23.6** (20.0-26.6)	1084
	05-06	**2.84** (2.40-3.36)	**1.99** (1.60-2.54)	**8.65** (5.94-12.6)	**28.2** (20.8-35.0)	**43.1** (38.4-59.0)	952
	07-08	**2.90** (2.33-3.61)	**2.16** (1.71-2.78)	**7.30** (5.00-10.2)	**18.4** (14.8-22.3)	**27.3** (22.3-50.8)	1022

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxynapthalene (1-Naphthol) (creatinine corrected) (2011 - 2012)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**1.90** (1.73-2.10)	**1.51** (1.35-1.67)	**4.15** (3.49-5.23)	**13.4** (10.4-15.6)	**20.4** (15.8-26.7)	2490
Age group							
6-11 years	11-12	**1.38** (1.18-1.61)	**1.21** (.971-1.58)	**2.36** (1.96-2.83)	**4.78** (3.72-6.59)	**8.90** (5.68-10.0)	396
12-19 years	11-12	**1.12** (.927-1.35)	**.936** (.729-1.21)	**2.02** (1.43-3.03)	**5.22** (3.42-7.72)	**8.11** (5.61-17.2)	389
20 years and older	11-12	**2.14** (1.93-2.36)	**1.69** (1.49-1.87)	**5.35** (4.44-6.53)	**15.3** (13.0-17.5)	**22.4** (16.4-38.0)	1705
Gender							
Males	11-12	**1.77** (1.53-2.05)	**1.43** (1.16-1.69)	**3.80** (2.92-5.93)	**12.2** (9.34-14.7)	**18.8** (14.2-25.5)	1257
Females	11-12	**2.04** (1.68-2.47)	**1.62** (1.30-1.90)	**4.42** (3.31-6.05)	**15.3** (12.4-18.0)	**21.6** (18.0-30.0)	1233
Race/ethnicity							
Mexican Americans	11-12	**1.43** (1.14-1.80)	**1.18** (.841-1.71)	**3.03** (1.94-4.75)	**7.88** (5.68-10.6)	**11.8** (8.45-18.9)	317
Non-Hispanic blacks	11-12	**1.66** (1.46-1.90)	**1.29** (1.11-1.47)	**4.01** (3.05-5.22)	**10.5** (8.56-12.7)	**16.4** (12.2-25.5)	664
Non-Hispanic whites	11-12	**2.07** (1.87-2.30)	**1.66** (1.47-1.81)	**4.97** (3.58-6.10)	**15.0** (12.7-17.5)	**22.4** (15.8-39.3)	812
All Hispanics	11-12	**1.51** (1.27-1.81)	**1.21** (.961-1.59)	**3.35** (2.33-4.61)	**9.08** (6.82-11.3)	**15.1** (10.7-20.1)	573
Asians	11-12	**1.73** (1.37-2.20)	**1.31** (1.00-1.72)	**3.74** (2.64-4.72)	**8.92** (6.47-14.1)	**22.8** (9.03-56.6)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxynaphthalene (2-Naphthol) (2001 – 2008)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.47** (2.11-2.89)	**2.28** (1.93-2.67)	**5.68** (4.58-6.83)	**14.7** (12.8-19.5)	**26.0** (22.5-29.7)	2748
	03-04	**3.18** (2.76-3.67)	**2.96** (2.50-3.50)	**7.50** (6.19-9.69)	**17.3** (14.5-22.1)	**25.8** (22.6-27.7)	2575
	05-06	**3.63** (3.35-3.92)	**3.44** (3.11-3.80)	**8.55** (7.84-9.42)	**20.2** (17.0-24.1)	**33.1** (28.6-38.2)	2446
	07-08	**3.83** (3.37-4.36)	**3.66** (3.24-4.12)	**8.46** (6.67-10.3)	**17.3** (14.8-21.9)	**26.7** (23.1-30.8)	2530
Age group							
6-11 years	01-02	**1.69** (1.56-1.84)	**1.70** (1.40-1.95)	**3.01** (2.58-3.47)	**5.41** (3.89-6.70)	**7.72** (6.30-9.54)	387
	03-04	**2.11** (1.80-2.47)	**2.14** (1.79-2.59)	**3.57** (3.14-4.38)	**5.58** (5.05-6.38)	**9.71** (5.23-20.0)	339
	05-06	**2.16** (1.94-2.41)	**2.09** (1.95-2.33)	**3.96** (3.09-4.46)	**5.64** (5.00-9.68)	**10.6** (7.20-13.3)	345
	07-08	**2.70** (2.38-3.06)	**2.59** (2.14-2.95)	**4.66** (4.05-5.23)	**8.72** (5.91-10.7)	**11.5** (9.16-14.8)	375
12-19 years	01-02	**2.22** (1.70-2.90)	**2.15** (1.74-2.53)	**4.39** (3.15-6.11)	**11.0** (6.99-20.4)	**22.5** (13.9-28.4)	735
	03-04	**3.04** (2.68-3.46)	**2.91** (2.51-3.50)	**5.29** (4.67-6.59)	**12.4** (8.53-16.8)	**17.6** (15.1-25.9)	721
	05-06	**3.46** (3.03-3.95)	**3.29** (2.86-3.78)	**6.75** (5.87-7.49)	**14.5** (10.3-20.8)	**23.9** (14.7-33.1)	677
	07-08	**4.29** (3.48-5.28)	**4.34** (3.73-5.31)	**8.74** (6.57-10.8)	**17.1** (13.0-22.5)	**24.0** (19.6-29.7)	387
20 years and older	01-02	**2.62** (2.22-3.10)	**2.44** (1.94-2.95)	**6.38** (5.11-8.11)	**17.6** (14.0-21.1)	**28.1** (23.3-33.7)	1626
	03-04	**3.36** (2.86-3.96)	**3.18** (2.59-3.96)	**8.77** (7.21-11.3)	**19.2** (16.0-23.2)	**26.6** (23.4-28.8)	1515
	05-06	**3.88** (3.51-4.29)	**3.77** (3.25-4.33)	**9.58** (8.77-10.6)	**23.0** (18.6-28.8)	**37.0** (29.2-39.5)	1424
	07-08	**3.91** (3.41-4.50)	**3.68** (3.20-4.32)	**9.17** (6.82-11.0)	**18.5** (15.1-23.6)	**28.6** (23.8-33.5)	1768
Gender							
Males	01-02	**2.75** (2.36-3.21)	**2.51** (2.09-2.97)	**6.06** (4.82-7.81)	**16.9** (11.9-23.0)	**28.1** (20.8-35.6)	1349
	03-04	**3.52** (3.09-4.01)	**3.37** (2.91-3.88)	**8.52** (6.96-10.5)	**18.4** (15.3-22.6)	**26.1** (22.2-27.9)	1233
	05-06	**4.02** (3.65-4.44)	**3.85** (3.25-4.34)	**9.49** (7.84-11.3)	**19.7** (16.7-23.1)	**32.9** (25.5-38.2)	1221
	07-08	**4.25** (3.77-4.78)	**4.20** (3.74-4.52)	**9.30** (7.35-10.8)	**17.5** (14.5-22.7)	**26.0** (20.9-32.6)	1256
Females	01-02	**2.22** (1.86-2.66)	**2.06** (1.65-2.48)	**5.24** (3.89-6.44)	**13.9** (12.3-17.7)	**25.3** (19.7-28.3)	1399
	03-04	**2.89** (2.42-3.45)	**2.60** (2.14-3.16)	**6.80** (5.14-9.21)	**16.6** (12.7-21.3)	**23.9** (22.1-27.6)	1342
	05-06	**3.28** (2.83-3.80)	**3.18** (2.64-3.60)	**7.83** (6.77-9.00)	**21.3** (14.5-29.2)	**35.0** (26.7-39.6)	1225
	07-08	**3.47** (2.99-4.03)	**3.18** (2.65-3.74)	**7.63** (5.97-10.0)	**17.1** (13.6-21.9)	**26.7** (21.6-30.8)	1274
Race/ethnicity							
Mexican Americans	01-02	**2.70** (2.36-3.08)	**2.71** (2.35-3.26)	**5.14** (4.36-6.15)	**9.64** (8.15-10.6)	**14.3** (10.4-18.7)	665
	03-04	**3.13** (2.71-3.63)	**3.11** (2.57-3.85)	**6.74** (5.60-8.28)	**14.5** (10.4-15.6)	**18.0** (15.5-20.5)	648
	05-06	**4.52** (4.12-4.96)	**4.79** (4.13-5.43)	**8.96** (7.84-9.81)	**17.3** (12.4-23.3)	**28.7** (20.0-32.6)	621
	07-08	**4.69** (4.07-5.41)	**4.50** (3.93-5.58)	**8.60** (6.77-11.3)	**16.4** (12.6-20.9)	**24.0** (19.1-29.7)	515
Non-Hispanic blacks	01-02	**3.97** (3.47-4.54)	**3.46** (3.10-4.02)	**9.29** (6.82-13.2)	**22.8** (16.0-29.1)	**33.0** (25.9-38.7)	692
	03-04	**4.69** (3.83-5.75)	**4.29** (3.25-5.54)	**10.3** (7.67-13.1)	**21.2** (17.3-26.1)	**30.1** (22.3-40.6)	690
	05-06	**4.99** (4.41-5.65)	**4.63** (3.93-5.62)	**11.6** (9.37-14.3)	**22.6** (20.0-26.9)	**31.9** (27.6-38.5)	657
	07-08	**4.90** (4.42-5.44)	**4.81** (4.33-5.19)	**10.1** (8.05-12.3)	**22.1** (17.2-26.3)	**28.6** (25.0-36.6)	587
Non-Hispanic whites	01-02	**2.19** (1.76-2.72)	**1.91** (1.61-2.42)	**4.97** (3.71-6.78)	**14.1** (10.7-20.2)	**25.9** (20.7-30.0)	1207
	03-04	**3.08** (2.58-3.67)	**2.66** (2.20-3.53)	**7.64** (5.89-10.4)	**18.0** (14.6-22.9)	**26.1** (22.9-27.9)	1072
	05-06	**3.25** (2.90-3.64)	**2.98** (2.71-3.33)	**7.90** (6.69-9.36)	**19.3** (15.8-24.7)	**34.0** (25.5-38.3)	980
	07-08	**3.60** (2.98-4.35)	**3.34** (2.62-4.17)	**8.04** (5.73-10.7)	**17.1** (11.8-23.8)	**26.4** (20.4-35.6)	1043

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 0.002, 0.031, 0.013 and 0.042 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxynapthalene (2-Naphthol) (2011 - 2012)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**4.14** (3.73-4.61)	**4.18** (3.83-4.76)	**9.74** (8.22-10.8)	**19.7** (17.7-21.2)	**28.1** (24.1-30.3)	2492
Age group							
6-11 years	11-12	**3.13** (2.66-3.69)	**3.34** (2.75-4.53)	**6.49** (5.77-8.10)	**11.9** (11.1-16.5)	**20.3** (14.8-26.5)	397
12-19 years	11-12	**4.33** (3.47-5.40)	**4.03** (3.18-5.36)	**9.34** (7.14-11.7)	**20.8** (14.7-26.6)	**27.3** (20.8-61.5)	389
20 years and older	11-12	**4.25** (3.78-4.77)	**4.26** (3.84-4.96)	**10.4** (8.45-11.4)	**20.0** (17.7-22.2)	**28.5** (23.6-31.2)	1706
Gender							
Males	11-12	**4.26** (3.82-4.76)	**4.20** (3.62-5.09)	**8.93** (7.61-10.7)	**18.3** (14.7-22.4)	**27.7** (21.0-32.9)	1258
Females	11-12	**4.03** (3.50-4.65)	**4.16** (3.72-4.83)	**10.4** (8.56-11.9)	**20.5** (17.8-23.0)	**28.3** (24.1-31.2)	1234
Race/ethnicity							
Mexican Americans	11-12	**5.86** (5.13-6.70)	**5.41** (4.82-6.55)	**12.7** (9.57-16.6)	**22.5** (17.5-25.1)	**27.5** (22.7-37.3)	317
Non-Hispanic blacks	11-12	**6.65** (5.66-7.80)	**6.87** (5.70-8.56)	**14.0** (11.8-15.1)	**23.6** (20.3-28.4)	**37.0** (25.4-47.1)	664
Non-Hispanic whites	11-12	**3.54** (3.17-3.96)	**3.59** (3.09-4.06)	**7.55** (6.80-9.06)	**17.8** (13.4-20.5)	**26.2** (20.5-29.2)	814
All Hispanics	11-12	**5.69** (4.90-6.61)	**5.49** (4.60-6.61)	**12.6** (10.1-15.7)	**22.8** (18.4-24.7)	**27.9** (23.0-42.3)	573
Asians	11-12	**2.91** (2.37-3.56)	**2.97** (2.06-3.86)	**6.33** (5.29-8.33)	**13.5** (10.8-17.0)	**20.6** (14.2-26.6)	352

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.042.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxynaphthalene (2-Naphthol) (creatinine corrected) (2001 – 2008)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.31** (1.98-2.68)	**1.94** (1.67-2.30)	**4.73** (3.82-5.86)	**11.5** (9.98-13.1)	**16.7** (14.1-19.2)	2748
	03-04	**2.99** (2.67-3.34)	**2.56** (2.20-2.97)	**6.34** (5.01-7.87)	**14.1** (11.8-16.3)	**19.9** (16.0-23.8)	2575
	05-06	**3.52** (3.29-3.77)	**3.08** (2.67-3.40)	**7.24** (6.45-8.27)	**17.0** (14.8-18.8)	**23.9** (21.9-27.2)	2446
	07-08	**3.86** (3.44-4.33)	**3.44** (3.04-3.91)	**7.10** (6.01-8.63)	**15.3** (12.9-18.3)	**20.7** (18.8-23.9)	2530
Age group							
6-11 years	01-02	**1.89** (1.74-2.07)	**1.83** (1.72-1.94)	**3.11** (2.51-3.47)	**5.04** (4.38-5.54)	**6.49** (5.27-12.4)	387
	03-04	**2.24** (1.89-2.65)	**2.04** (1.66-2.44)	**3.54** (2.84-3.91)	**5.95** (4.14-8.51)	**8.72** (7.56-12.0)	339
	05-06	**2.40** (2.10-2.75)	**2.27** (2.00-2.58)	**3.68** (3.15-4.43)	**6.10** (4.84-7.04)	**7.82** (6.31-13.8)	345
	07-08	**3.33** (2.98-3.73)	**3.38** (2.90-3.71)	**5.23** (4.32-6.78)	**8.00** (6.79-9.92)	**10.5** (8.00-14.5)	375
12-19 years	01-02	**1.72** (1.35-2.19)	**1.51** (1.34-1.83)	**2.75** (2.08-4.07)	**7.18** (4.07-10.9)	**11.1** (7.86-17.4)	735
	03-04	**2.28** (2.06-2.52)	**2.03** (1.77-2.35)	**3.78** (3.20-4.47)	**7.84** (6.13-9.11)	**10.5** (9.10-12.5)	721
	05-06	**2.59** (2.37-2.84)	**2.31** (2.03-2.62)	**4.58** (3.99-5.02)	**8.47** (6.98-10.5)	**11.9** (10.1-15.2)	677
	07-08	**3.30** (2.74-3.96)	**3.13** (2.43-4.08)	**5.73** (4.88-6.79)	**9.85** (7.56-12.0)	**12.5** (9.91-18.6)	387
20 years and older	01-02	**2.48** (2.13-2.88)	**2.08** (1.68-2.60)	**5.63** (4.46-6.94)	**12.4** (10.9-13.9)	**17.7** (15.2-20.6)	1626
	03-04	**3.23** (2.87-3.64)	**2.91** (2.36-3.41)	**7.54** (6.20-9.10)	**15.6** (13.1-17.9)	**21.8** (17.2-24.0)	1515
	05-06	**3.87** (3.59-4.17)	**3.40** (3.08-3.75)	**9.20** (7.93-10.5)	**19.0** (17.4-21.2)	**27.2** (22.3-29.7)	1424
	07-08	**4.02** (3.55-4.55)	**3.47** (3.07-4.04)	**7.75** (6.17-9.83)	**17.5** (13.9-19.8)	**22.7** (20.2-25.5)	1768
Gender							
Males	01-02	**2.23** (1.90-2.61)	**1.86** (1.63-2.10)	**4.79** (3.51-6.12)	**11.4** (8.95-14.3)	**15.8** (13.1-19.2)	1349
	03-04	**2.77** (2.50-3.06)	**2.36** (2.13-2.81)	**6.30** (5.08-7.36)	**12.8** (11.3-14.6)	**16.4** (14.6-18.3)	1233
	05-06	**3.23** (3.00-3.48)	**2.83** (2.53-3.14)	**6.75** (5.62-8.10)	**13.8** (12.3-16.2)	**18.9** (17.4-21.2)	1221
	07-08	**3.58** (3.24-3.95)	**3.13** (2.70-3.57)	**6.79** (5.79-8.10)	**14.4** (12.2-17.2)	**19.6** (18.3-20.9)	1256
Females	01-02	**2.38** (2.05-2.77)	**1.99** (1.66-2.56)	**4.73** (3.79-6.00)	**11.5** (10.3-12.8)	**17.4** (13.7-21.5)	1399
	03-04	**3.21** (2.76-3.73)	**2.68** (2.20-3.26)	**6.43** (4.74-8.58)	**16.0** (11.5-19.9)	**22.5** (18.1-25.0)	1342
	05-06	**3.83** (3.39-4.33)	**3.21** (2.72-3.76)	**8.08** (6.43-9.74)	**20.8** (17.0-24.7)	**29.0** (24.9-34.2)	1225
	07-08	**4.15** (3.57-4.83)	**3.59** (3.19-4.18)	**7.40** (5.88-9.63)	**16.8** (12.9-20.0)	**22.7** (20.0-25.5)	1274
Race/ethnicity							
Mexican Americans	01-02	**2.52** (2.23-2.85)	**2.35** (2.01-2.95)	**4.65** (3.97-5.21)	**7.32** (6.05-8.09)	**12.0** (7.82-15.3)	665
	03-04	**2.83** (2.44-3.28)	**2.57** (2.20-3.23)	**5.00** (4.10-5.94)	**10.3** (6.79-13.0)	**13.3** (11.0-15.5)	648
	05-06	**4.05** (3.77-4.35)	**4.03** (3.65-4.36)	**7.05** (6.30-8.05)	**12.6** (9.53-15.1)	**17.4** (13.4-20.6)	621
	07-08	**4.58** (3.97-5.28)	**4.37** (3.55-5.02)	**7.59** (6.30-9.38)	**14.2** (11.6-16.4)	**19.1** (16.0-24.7)	515
Non-Hispanic blacks	01-02	**2.79** (2.39-3.27)	**2.41** (2.04-2.77)	**5.98** (4.84-6.98)	**11.6** (9.09-15.3)	**17.4** (12.2-23.4)	692
	03-04	**3.32** (2.70-4.09)	**3.06** (2.31-3.86)	**7.05** (5.14-9.41)	**12.8** (10.2-16.5)	**19.0** (15.7-23.4)	690
	05-06	**3.51** (3.16-3.89)	**3.10** (2.59-3.53)	**6.71** (5.33-8.04)	**12.3** (10.3-16.1)	**19.7** (16.1-25.0)	657
	07-08	**3.80** (3.47-4.15)	**3.45** (3.08-3.90)	**6.73** (5.56-8.41)	**13.1** (11.3-14.9)	**19.2** (14.8-26.5)	587
Non-Hispanic whites	01-02	**2.16** (1.78-2.62)	**1.74** (1.44-2.18)	**4.34** (3.32-6.09)	**11.9** (9.93-14.3)	**16.9** (13.8-20.6)	1207
	03-04	**3.04** (2.66-3.46)	**2.48** (2.11-3.02)	**7.17** (5.10-8.95)	**15.5** (13.3-17.6)	**21.8** (17.1-24.0)	1072
	05-06	**3.40** (3.08-3.76)	**2.73** (2.39-3.26)	**7.45** (6.10-9.65)	**17.9** (15.3-20.7)	**24.9** (21.2-29.0)	980
	07-08	**3.75** (3.18-4.43)	**3.28** (2.60-4.08)	**6.91** (5.53-9.51)	**16.8** (12.8-19.8)	**22.2** (19.4-25.5)	1043

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxynapthalene (2-Naphthol) (creatinine corrected) (2011 - 2012)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**4.72** (4.39-5.08)	**4.32** (4.00-4.78)	**9.30** (8.40-10.1)	**17.6** (15.5-18.7)	**23.4** (20.2-25.9)	2490
Age group							
6-11 years	11-12	**4.50** (3.93-5.16)	**4.18** (3.68-4.96)	**7.81** (6.44-9.37)	**14.6** (11.2-17.1)	**19.2** (15.3-22.6)	396
12-19 years	11-12	**4.19** (3.61-4.86)	**3.82** (3.26-4.63)	**6.97** (5.26-8.92)	**12.9** (9.70-14.9)	**20.5** (12.9-32.1)	389
20 years and older	11-12	**4.84** (4.48-5.22)	**4.50** (4.07-4.98)	**9.88** (9.07-11.0)	**18.1** (16.4-19.4)	**24.0** (20.8-26.7)	1705
Gender							
Males	11-12	**4.01** (3.61-4.44)	**3.71** (3.23-4.19)	**7.61** (6.50-8.89)	**14.2** (12.1-15.8)	**19.6** (17.4-22.3)	1257
Females	11-12	**5.53** (5.01-6.11)	**5.22** (4.62-5.94)	**11.4** (9.85-12.8)	**19.1** (17.4-22.6)	**25.9** (21.6-31.0)	1233
Race/ethnicity							
Mexican Americans	11-12	**6.59** (5.61-7.75)	**6.22** (5.54-7.60)	**11.6** (9.38-14.3)	**20.1** (14.3-26.3)	**26.3** (18.5-44.9)	317
Non-Hispanic blacks	11-12	**5.17** (4.58-5.85)	**5.26** (4.59-6.16)	**9.33** (8.09-10.7)	**15.3** (13.5-17.3)	**19.6** (17.9-22.0)	664
Non-Hispanic whites	11-12	**4.32** (3.96-4.70)	**3.81** (3.40-4.21)	**8.89** (7.40-10.0)	**17.6** (14.5-18.7)	**21.9** (18.7-27.7)	812
All Hispanics	11-12	**6.37** (5.80-7.00)	**6.04** (5.65-6.77)	**11.6** (9.85-13.3)	**19.2** (15.8-23.8)	**25.9** (21.9-30.4)	573
Asians	11-12	**3.89** (3.22-4.71)	**3.91** (3.08-4.86)	**6.94** (5.70-8.22)	**12.9** (8.67-19.0)	**19.1** (13.7-23.1)	352

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Blood 1,1,1-Trichloroethane (Methyl chloroform) (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1345
	05-06	*	< LOD	< LOD	< LOD	< LOD	3085
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	911
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1345
	05-06	*	< LOD	< LOD	< LOD	< LOD	1524
60 years and older	05-06	*	< LOD	< LOD	< LOD	**.014** (<LOD-.021)	650
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	660
	05-06	*	< LOD	< LOD	< LOD	< LOD	1464
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	685
	05-06	*	< LOD	< LOD	< LOD	< LOD	1621
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	762
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	289
	05-06	*	< LOD	< LOD	< LOD	< LOD	791
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	688
	05-06	*	< LOD	< LOD	< LOD	< LOD	1303

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.048 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,1,2,2-Tetrachloroethane (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1235
	05-06	*	< LOD	< LOD	< LOD	< LOD	3131
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	924
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1235
	05-06	*	< LOD	< LOD	< LOD	< LOD	1542
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	665
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	613
	05-06	*	< LOD	< LOD	< LOD	< LOD	1484
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	622
	05-06	*	< LOD	< LOD	< LOD	< LOD	1647
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	250
	05-06	*	< LOD	< LOD	< LOD	< LOD	753
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	282
	05-06	*	< LOD	< LOD	< LOD	< LOD	823
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	606
	05-06	*	< LOD	< LOD	< LOD	< LOD	1323

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,1,2-Trichloroethane (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1354
	05-06	*	< LOD	< LOD	< LOD	< LOD	3165
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	936
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1354
	05-06	*	< LOD	< LOD	< LOD	< LOD	1556
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	673
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	664
	05-06	*	< LOD	< LOD	< LOD	< LOD	1499
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	690
	05-06	*	< LOD	< LOD	< LOD	< LOD	1666
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	777
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	297
	05-06	*	< LOD	< LOD	< LOD	< LOD	824
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	686
	05-06	*	< LOD	< LOD	< LOD	< LOD	1331

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,1-Dichloroethane (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	3193
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	941
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	1569
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	683
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	1510
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1683
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	778
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	832
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	695
	05-06	*	< LOD	< LOD	< LOD	< LOD	1347

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,1-Dichloroethene (Vinylidene chloride) (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	3163
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	931
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	1555
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	677
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	1502
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1661
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	774
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	823
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	695
	05-06	*	< LOD	< LOD	< LOD	< LOD	1332

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.009 and 0.009 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,2-Dibromo-3-chloropropane (DBCP) (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1170
	05-06	*	< LOD	< LOD	< LOD	< LOD	2998
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	875
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1170
	05-06	*	< LOD	< LOD	< LOD	< LOD	1485
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	638
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	568
	05-06	*	< LOD	< LOD	< LOD	< LOD	1409
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	602
	05-06	*	< LOD	< LOD	< LOD	< LOD	1589
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	234
	05-06	*	< LOD	< LOD	< LOD	< LOD	752
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	239
	05-06	*	< LOD	< LOD	< LOD	< LOD	737
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	603
	05-06	*	< LOD	< LOD	< LOD	< LOD	1287

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBCP_BiomonitoringSummary.html

Blood 1,2-Dichlorobenzene (*o*-Dichlorobenzene) (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1327
	05-06	*	< LOD	< LOD	< LOD	< LOD	3083
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	921
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1327
	05-06	*	< LOD	< LOD	< LOD	< LOD	1523
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	639
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	647
	05-06	*	< LOD	< LOD	< LOD	< LOD	1457
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	680
	05-06	*	< LOD	< LOD	< LOD	< LOD	1626
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	250
	05-06	*	< LOD	< LOD	< LOD	< LOD	766
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	801
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	682
	05-06	*	< LOD	< LOD	< LOD	< LOD	1288

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorobenzenes_BiomonitoringSummary.html

Blood 1,2-Dichloroethane (Ethylene dichloride) (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1346
	05-06	*	< LOD	< LOD	< LOD	< LOD	3082
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	906
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1346
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	656
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	661
	05-06	*	< LOD	< LOD	< LOD	< LOD	1452
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	685
	05-06	*	< LOD	< LOD	< LOD	< LOD	1630
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	763
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	289
	05-06	*	< LOD	< LOD	< LOD	< LOD	795
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	689
	05-06	*	< LOD	< LOD	< LOD	< LOD	1297

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood *cis*-1,2-Dichloroethene (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	3140
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	924
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	1539
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	677
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	669
	05-06	*	< LOD	< LOD	< LOD	< LOD	1481
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1659
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	757
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	822
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	1329

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood *trans*-1,2-Dichloroethene (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	3193
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	941
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	1569
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	683
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	1511
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1682
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	779
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	832
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	695
	05-06	*	< LOD	< LOD	< LOD	< LOD	1346

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,2-Dichloropropane (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1364
	05-06	*	< LOD	< LOD	< LOD	< LOD	3120
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	918
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1364
	05-06	*	< LOD	< LOD	< LOD	< LOD	1536
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	666
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	667
	05-06	*	< LOD	< LOD	< LOD	< LOD	1478
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1642
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	755
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	811
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	692
	05-06	*	< LOD	< LOD	< LOD	< LOD	1322

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.008 and 0.008 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,3-Dichlorobenzene (*m*-Dichlorobenzene) (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1334
	05-06	*	< LOD	< LOD	< LOD	< LOD	3148
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	928
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1334
	05-06	*	< LOD	< LOD	< LOD	< LOD	1545
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	675
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	659
	05-06	*	< LOD	< LOD	< LOD	< LOD	1491
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	675
	05-06	*	< LOD	< LOD	< LOD	< LOD	1657
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	266
	05-06	*	< LOD	< LOD	< LOD	< LOD	774
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	279
	05-06	*	< LOD	< LOD	< LOD	< LOD	809
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	686
	05-06	*	< LOD	< LOD	< LOD	< LOD	1330

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.05 and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorobenzenes_BiomonitoringSummary.html

Blood 1,4-Dichlorobenzene (Paradichlorobenzene) (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.300** (.190-.550)	**1.19** (.610-2.90)	**4.10** (1.40-7.60)	807
	03-04	*	**< LOD**	**.320** (.250-.400)	**1.10** (.710-1.60)	**3.30** (1.70-5.10)	1322
	05-06	*	**.085** (.085-.085)	**.218** (.180-.260)	**.917** (.643-1.31)	**3.59** (1.80-5.50)	3126
Age group							
12-19 years	05-06	*	**.085** (.085-.085)	**.220** (.160-.280)	**.960** (.560-2.00)	**4.27** (2.37-6.10)	926
20-59 years	01-02	*	**< LOD**	**.300** (.190-.550)	**1.19** (.610-2.90)	**4.10** (1.40-7.60)	807
	03-04	*	**< LOD**	**.320** (.250-.400)	**1.10** (.710-1.60)	**3.30** (1.70-5.10)	1322
	05-06	*	**.085** (.085-.085)	**.220** (.170-.260)	**.910** (.540-1.50)	**3.77** (1.50-7.33)	1537
60 years and older	05-06	*	**.085** (.085-.085)	**.207** (.158-.313)	**.877** (.525-1.80)	**3.06** (1.50-4.20)	663
Gender							
Males	01-02	*	**< LOD**	**.270** (.180-.530)	**.900** (.570-2.90)	**3.60** (1.10-7.20)	390
	03-04	*	**< LOD**	**.320** (.250-.380)	**.770** (.580-1.20)	**1.90** (1.20-4.00)	651
	05-06	*	**.085** (.085-.085)	**.230** (.188-.290)	**.950** (.603-1.50)	**3.50** (1.50-7.20)	1479
Females	01-02	*	**< LOD**	**.360** (.190-.620)	**1.20** (.620-3.90)	**4.10** (1.68-8.30)	417
	03-04	*	**< LOD**	**.350** (.220-.450)	**1.40** (.810-2.10)	**4.10** (2.20-5.90)	671
	05-06	*	**.085** (.085-.085)	**.180** (.140-.240)	**.865** (.522-1.70)	**3.59** (2.10-5.18)	1647
Race/ethnicity							
Mexican Americans	01-02	**.331** (.246-.446)	**.180** (<LOD-.260)	**.790** (.400-1.30)	**6.00** (1.30-16.0)	**16.0** (6.20-33.0)	217
	03-04	**.381** (.256-.566)	**.210** (.140-.400)	**.730** (.370-2.90)	**6.20** (2.90-9.30)	**10.0** (6.30-19.0)	262
	05-06	**.412** (.309-.549)	**.210** (.150-.290)	**1.20** (.680-2.97)	**8.80** (3.80-16.0)	**16.0** (8.10-33.0)	772
Non-Hispanic blacks	01-02	**.558** (.376-.827)	**.360** (.260-.560)	**1.80** (.710-3.90)	**6.30** (1.40-29.0)	**15.0** (3.60-51.0)	136
	03-04	**.423** (.292-.613)	**.340** (.200-.480)	**.980** (.550-1.50)	**4.10** (1.60-9.20)	**11.0** (2.50-19.0)	297
	05-06	**.381** (.272-.532)	**.230** (.160-.330)	**.860** (.500-1.70)	**5.24** (2.00-11.5)	**12.7** (8.41-21.0)	805
Non-Hispanic whites	01-02	*	**< LOD**	**.200** (<LOD-.380)	**.570** (.300-1.20)	**1.19** (.570-3.70)	396
	03-04	*	**< LOD**	**.200** (.160-.260)	**.490** (.370-.720)	**.940** (.690-2.00)	658
	05-06	*	**.085** (.085-.085)	**.134** (.085-.180)	**.438** (.260-.670)	**1.16** (.520-2.30)	1319

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.12, 0.12, and 0.011 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorobenzenes_BiomonitoringSummary.html

Blood 2,5-Dimethylfuran (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**.016** (<LOD-.032)	**.100** (.083-.110)	**.140** (.120-.180)	1213
	05-06	*	**< LOD**	**< LOD**	**.100** (.069-.120)	**.160** (.130-.180)	3160
Age group							
12-19 years	05-06	*	**< LOD**	**< LOD**	**.013** (<LOD-.029)	**.049** (.020-.069)	930
20-59 years	03-04	*	**< LOD**	**.016** (<LOD-.032)	**.100** (.083-.110)	**.140** (.120-.180)	1213
	05-06	*	**< LOD**	**.013** (<LOD-.035)	**.120** (.097-.144)	**.170** (.140-.210)	1553
60 years and older	05-06	*	**< LOD**	**< LOD**	**.069** (.027-.100)	**.140** (.106-.160)	677
Gender							
Males	03-04	*	**< LOD**	**.019** (<LOD-.034)	**.094** (.071-.110)	**.130** (.110-.190)	598
	05-06	*	**< LOD**	**< LOD**	**.110** (.079-.130)	**.160** (.130-.190)	1490
Females	03-04	*	**< LOD**	**.012** (<LOD-.048)	**.110** (.071-.120)	**.150** (.120-.210)	615
	05-06	*	**< LOD**	**< LOD**	**.094** (.062-.120)	**.158** (.120-.180)	1670
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**.012** (<LOD-.020)	**.038** (.013-.054)	237
	05-06	*	**< LOD**	**< LOD**	**.015** (<LOD-.029)	**.033** (.020-.055)	778
Non-Hispanic blacks	03-04	*	**< LOD**	**.042** (.019-.063)	**.110** (.079-.170)	**.170** (.099-.220)	258
	05-06	*	**< LOD**	**.012** (<LOD-.030)	**.085** (.058-.110)	**.130** (.095-.180)	825
Non-Hispanic whites	03-04	*	**< LOD**	**.021** (<LOD-.043)	**.110** (.087-.120)	**.150** (.120-.200)	624
	05-06	*	**< LOD**	**< LOD**	**.118** (.091-.140)	**.170** (.140-.230)	1325

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.012 and 0.011 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,5-Dimethylfuran_BiomonitoringSummary.html

Blood Benzene (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**.030** (<LOD-.050)	**.100** (.060-.140)	**.190** (.140-.290)	**.320** (.190-.480)	837
	03-04	*	**.027** (.025-.031)	**.064** (.050-.084)	**.170** (.150-.190)	**.260** (.210-.320)	1345
	05-06	*	**.026** (<LOD-.030)	**.056** (.047-.072)	**.220** (.157-.260)	**.310** (.264-.370)	3091
Age group							
12-19 years	05-06	*	**.024** (<LOD-.028)	**.039** (.031-.056)	**.089** (.066-.110)	**.120** (.092-.180)	912
20-59 years	01-02	*	**.030** (<LOD-.050)	**.100** (.060-.140)	**.190** (.140-.290)	**.320** (.190-.480)	837
	03-04	*	**.027** (.025-.031)	**.064** (.050-.084)	**.170** (.150-.190)	**.260** (.210-.320)	1345
	05-06	*	**.028** (.025-.032)	**.072** (.053-.100)	**.240** (.200-.290)	**.340** (.300-.390)	1513
60 years and older	05-06	*	**< LOD**	**.042** (.036-.048)	**.180** (.100-.230)	**.270** (.200-.340)	666
Gender							
Males	01-02	*	**.030** (<LOD-.050)	**.110** (.060-.160)	**.230** (.150-.370)	**.370** (.210-.510)	403
	03-04	**.039** (.035-.043)	**.030** (.027-.035)	**.069** (.053-.084)	**.160** (.140-.180)	**.240** (.190-.320)	654
	05-06	*	**.028** (.025-.032)	**.066** (.051-.083)	**.230** (.165-.280)	**.330** (.260-.440)	1459
Females	01-02	*	**.030** (<LOD-.050)	**.100** (.060-.130)	**.180** (.120-.240)	**.250** (.170-.330)	434
	03-04	*	**.025** (<LOD-.029)	**.057** (.040-.090)	**.180** (.150-.220)	**.290** (.220-.420)	691
	05-06	*	**.024** (<LOD-.028)	**.049** (.040-.067)	**.200** (.150-.230)	**.290** (.250-.340)	1632
Race/ethnicity							
Mexican Americans	01-02	*	**.030** (<LOD-.070)	**.070** (.030-.170)	**.140** (.060-.360)	**.230** (.130-.370)	227
	03-04	*	**.027** (<LOD-.035)	**.041** (.034-.057)	**.077** (.058-.110)	**.130** (.084-.320)	254
	05-06	*	**< LOD**	**.036** (.031-.045)	**.060** (.048-.086)	**.096** (.072-.140)	744
Non-Hispanic blacks	01-02	*	**< LOD**	**.060** (<LOD-.160)	**.180** (.090-.300)	**.250** (.160-.480)	137
	03-04	**.043** (.033-.058)	**.029** (<LOD-.054)	**.092** (.055-.140)	**.210** (.140-.290)	**.320** (.240-.460)	302
	05-06	*	**.026** (<LOD-.034)	**.077** (.051-.110)	**.180** (.150-.221)	**.280** (.220-.360)	812
Non-Hispanic whites	01-02	*	**.030** (<LOD-.060)	**.110** (.070-.160)	**.210** (.140-.340)	**.330** (.190-.510)	411
	03-04	*	**.028** (.025-.033)	**.068** (.053-.088)	**.180** (.150-.200)	**.280** (.210-.330)	687
	05-06	*	**.027** (<LOD-.031)	**.069** (.049-.091)	**.240** (.190-.280)	**.330** (.270-.390)	1309

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.024, 0.024, and 0.024 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html

Blood Chlorobenzene (Monochlorobenzene) (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	3072
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	910
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	1495
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	667
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	669
	05-06	*	< LOD	< LOD	< LOD	< LOD	1453
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1619
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	740
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	817
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	1287

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.011 and 0.011 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorobenzenes_BiomonitoringSummary.html

Blood Dibromomethane (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	3152
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	929
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1554
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	669
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	666
	05-06	*	< LOD	< LOD	< LOD	< LOD	1494
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	689
	05-06	*	< LOD	< LOD	< LOD	< LOD	1658
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	778
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	816
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	693
	05-06	*	< LOD	< LOD	< LOD	< LOD	1324

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.03 and 0.03 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood Dichloromethane (Methylene chloride) (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1165
	05-06	*	< LOD	< LOD	< LOD	< LOD	2852
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	837
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1165
	05-06	*	< LOD	< LOD	< LOD	< LOD	1400
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	615
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	568
	05-06	*	< LOD	< LOD	< LOD	< LOD	1338
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	597
	05-06	*	< LOD	< LOD	< LOD	< LOD	1514
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	225
	05-06	*	< LOD	< LOD	< LOD	< LOD	731
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	245
	05-06	*	< LOD	< LOD	< LOD	< LOD	729
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	607
	05-06	*	< LOD	< LOD	< LOD	< LOD	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.07 and 0.25 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Blood Ethylbenzene (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**.034** (.029-.039)	**.030** (.030-.040)	**.050** (.050-.070)	**.090** (.070-.120)	**.140** (.090-.180)	879
	03-04	**.035** (.033-.037)	**.032** (.030-.036)	**.053** (.048-.057)	**.083** (.077-.088)	**.110** (.098-.120)	1299
	05-06	**.038** (.036-.041)	**.035** (.033-.037)	**.059** (.052-.067)	**.100** (.093-.114)	**.140** (.122-.160)	3119
Age group							
12-19 years	05-06	**.032** (.030-.034)	**.031** (.029-.033)	**.046** (.042-.049)	**.070** (.058-.085)	**.096** (.075-.120)	909
20-59 years	01-02	**.034** (.029-.039)	**.030** (.030-.040)	**.050** (.050-.070)	**.090** (.070-.120)	**.140** (.090-.180)	879
	03-04	**.035** (.033-.037)	**.032** (.030-.036)	**.053** (.048-.057)	**.083** (.077-.088)	**.110** (.098-.120)	1299
	05-06	**.040** (.037-.043)	**.037** (.034-.039)	**.062** (.054-.073)	**.110** (.098-.126)	**.150** (.130-.180)	1539
60 years and older	05-06	**.037** (.033-.040)	**.033** (.030-.036)	**.056** (.046-.068)	**.098** (.090-.110)	**.130** (.110-.160)	671
Gender							
Males	01-02	**.035** (.029-.041)	**.030** (<LOD-.040)	**.060** (.040-.070)	**.100** (.070-.150)	**.150** (.090-.220)	419
	03-04	**.037** (.034-.041)	**.036** (.031-.040)	**.057** (.051-.065)	**.086** (.078-.099)	**.110** (.094-.130)	625
	05-06	**.042** (.039-.044)	**.038** (.036-.041)	**.067** (.057-.074)	**.114** (.099-.131)	**.160** (.136-.180)	1474
Females	01-02	**.033** (.028-.038)	**.030** (.030-.040)	**.050** (.040-.060)	**.080** (.060-.120)	**.130** (.070-.180)	460
	03-04	**.032** (.030-.034)	**.030** (.027-.033)	**.048** (.041-.053)	**.081** (.071-.089)	**.100** (.091-.120)	674
	05-06	**.035** (.032-.038)	**.032** (.029-.035)	**.052** (.047-.061)	**.093** (.081-.103)	**.120** (.106-.150)	1645
Race/ethnicity							
Mexican Americans	01-02	*	**.030** (<LOD-.040)	**.040** (.040-.060)	**.070** (.050-.110)	**.120** (.070-.210)	220
	03-04	**.031** (.027-.036)	**.029** (<LOD-.035)	**.044** (.035-.048)	**.064** (.051-.074)	**.091** (.066-.170)	253
	05-06	**.032** (.028-.036)	**.030** (.026-.036)	**.047** (.039-.057)	**.072** (.051-.093)	**.086** (.073-.120)	752
Non-Hispanic blacks	01-02	**.032** (.027-.038)	**.030** (<LOD-.040)	**.050** (.030-.070)	**.080** (.060-.130)	**.130** (.070-.240)	159
	03-04	**.032** (.027-.038)	**.030** (<LOD-.037)	**.050** (.037-.066)	**.079** (.065-.100)	**.110** (.084-.130)	281
	05-06	**.037** (.035-.040)	**.034** (.030-.038)	**.057** (.052-.064)	**.095** (.085-.100)	**.120** (.104-.140)	809
Non-Hispanic whites	01-02	**.035** (.029-.043)	**.030** (<LOD-.040)	**.060** (.050-.070)	**.090** (.070-.140)	**.150** (.090-.190)	432
	03-04	**.036** (.034-.038)	**.034** (.030-.038)	**.055** (.050-.061)	**.087** (.081-.092)	**.110** (.098-.130)	669
	05-06	**.039** (.037-.042)	**.036** (.033-.038)	**.061** (.053-.072)	**.110** (.095-.120)	**.150** (.125-.180)	1326

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.024, 0.024, and 0.024 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Ethylbenzene_BiomonitoringSummary.html

Blood Hexachloroethane (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	3155
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	930
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	1547
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	678
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	669
	05-06	*	< LOD	< LOD	< LOD	< LOD	1495
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1660
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	758
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	830
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	1335

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.011 and 0.011 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Hexachloroethane_BiomonitoringSummary.html

Blood Methyl-*tert*-butyl ether (MTBE) (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**16.4** (4.77-56.7)	**27.7** (7.29-64.9)	**73.8** (35.5-127)	**132** (64.0-278)	**188** (109-339)	672
	03-04	**11.0** (5.98-20.1)	**10.0** (4.60-25.1)	**45.0** (16.0-98.0)	**110** (70.0-180)	**170** (110-340)	1307
	05-06	**6.16** (2.94-12.9)	**4.60** (1.80-15.0)	**20.0** (5.20-73.0)	**75.0** (22.0-140)	**110** (49.0-250)	3080
Age group							
12-19 years	05-06	**5.85** (2.61-13.1)	**4.20** (1.40-18.0)	**18.0** (4.60-75.0)	**70.0** (18.0-140)	**110** (62.0-180)	911
20-59 years	01-02	**16.4** (4.77-56.7)	**27.7** (7.29-64.9)	**73.8** (35.5-127)	**132** (64.0-278)	**188** (109-339)	672
	03-04	**11.0** (5.98-20.1)	**10.0** (4.60-25.1)	**45.0** (16.0-98.0)	**110** (70.0-180)	**170** (110-340)	1307
	05-06	**6.26** (3.05-12.9)	**4.80** (2.00-14.0)	**20.0** (5.50-70.0)	**71.0** (21.0-150)	**110** (46.0-250)	1512
60 years and older	05-06	**6.00** (2.67-13.5)	**3.80** (1.60-14.0)	**22.0** (4.00-94.0)	**86.0** (19.0-180)	**120** (55.0-290)	657
Gender							
Males	01-02	**16.9** (4.96-57.7)	**27.9** (6.82-64.6)	**75.0** (35.5-131)	**132** (54.9-307)	**167** (109-417)	334
	03-04	**12.2** (6.29-23.6)	**11.0** (4.80-29.0)	**55.0** (18.0-110)	**130** (79.0-200)	**200** (110-470)	641
	05-06	**6.24** (3.07-12.7)	**4.60** (1.90-15.0)	**20.0** (5.90-69.0)	**73.0** (25.0-120)	**110** (52.0-230)	1462
Females	01-02	**16.0** (4.12-61.8)	**26.6** (5.93-74.6)	**72.7** (32.6-132)	**142** (73.5-255)	**194** (92.3-336)	338
	03-04	**9.88** (5.62-17.4)	**8.90** (4.30-23.0)	**38.0** (14.0-85.0)	**94.0** (58.0-160)	**140** (90.0-250)	666
	05-06	**6.08** (2.81-13.1)	**4.50** (1.70-14.0)	**19.0** (4.90-79.0)	**76.0** (20.0-160)	**110** (48.0-250)	1618
Race/ethnicity							
Mexican Americans	01-02	**23.3** (4.96-110)	**33.4** (2.92-187)	**91.3** (26.1-255)	**225** (80.6-339)	**273** (182-358)	166
	03-04	**11.6** (5.35-25.3)	**12.0** (3.80-29.0)	**32.0** (14.0-80.0)	**80.0** (38.0-190)	**160** (74.0-220)	245
	05-06	**7.61** (2.99-19.3)	**5.40** (2.00-33.0)	**30.0** (4.60-90.0)	**67.0** (26.0-190)	**100** (45.0-330)	735
Non-Hispanic blacks	01-02	**14.9** (6.11-36.4)	**26.4** (3.11-55.6)	**52.6** (30.0-86.8)	**87.4** (38.6-155)	**120** (70.0-155)	119
	03-04	**9.63** (4.83-19.2)	**10.0** (3.50-28.0)	**32.8** (11.0-85.0)	**77.0** (36.0-160)	**140** (61.0-210)	285
	05-06	**9.14** (3.16-26.5)	**5.70** (1.80-50.0)	**48.0** (5.00-150)	**120** (46.0-280)	**180** (88.0-460)	820
Non-Hispanic whites	01-02	**16.0** (4.13-62.4)	**27.9** (4.71-74.6)	**72.7** (33.3-132)	**132** (59.6-249)	**165** (92.8-366)	333
	03-04	**11.5** (5.51-23.8)	**11.0** (4.00-33.5)	**59.0** (14.0-120)	**120** (73.0-230)	**180** (110-430)	673
	05-06	**5.55** (2.47-12.5)	**4.00** (<LOD-15.0)	**16.0** (4.30-75.0)	**70.0** (15.0-150)	**110** (40.0-250)	1291

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.232, 2.0, and 1.4 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/MTBE_BiomonitoringSummary.html

Blood Nitrobenzene (2003 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1066
	05-06	*	< LOD	< LOD	< LOD	< LOD	3144
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	926
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1066
	05-06	*	< LOD	< LOD	< LOD	< LOD	1549
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	669
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	529
	05-06	*	< LOD	< LOD	< LOD	< LOD	1491
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	537
	05-06	*	< LOD	< LOD	< LOD	< LOD	1653
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	206
	05-06	*	< LOD	< LOD	< LOD	< LOD	773
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	205
	05-06	*	< LOD	< LOD	< LOD	< LOD	816
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	564
	05-06	*	< LOD	< LOD	< LOD	< LOD	1322

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.3 and 0.3 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Nitrobenzene_BiomonitoringSummary.html

Blood Styrene (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.080** (.050-.100)	**.130** (.090-.200)	**.200** (.140-.260)	950
	03-04	*	**< LOD**	**.050** (.044-.061)	**.089** (.081-.097)	**.120** (.110-.130)	1245
	05-06	*	**< LOD**	**.047** (.042-.056)	**.099** (.086-.113)	**.135** (.120-.160)	2808
Age group							
12-19 years	05-06	*	**< LOD**	**.039** (.031-.049)	**.058** (.050-.071)	**.072** (.059-.089)	827
20-59 years	01-02	*	**< LOD**	**.080** (.050-.100)	**.130** (.090-.200)	**.200** (.140-.260)	950
	03-04	*	**< LOD**	**.050** (.044-.061)	**.089** (.081-.097)	**.120** (.110-.130)	1245
	05-06	*	**< LOD**	**.051** (.044-.065)	**.110** (.094-.120)	**.150** (.120-.180)	1380
60 years and older	05-06	*	**< LOD**	**.041** (.033-.055)	**.083** (.072-.110)	**.130** (.100-.150)	601
Gender							
Males	01-02	*	**< LOD**	**.080** (.050-.110)	**.140** (.100-.230)	**.220** (.140-.340)	445
	03-04	*	**< LOD**	**.056** (.045-.068)	**.089** (.081-.100)	**.120** (.095-.150)	608
	05-06	*	**< LOD**	**.052** (.043-.067)	**.110** (.096-.120)	**.142** (.120-.170)	1326
Females	01-02	*	**< LOD**	**.070** (.050-.100)	**.120** (.090-.180)	**.180** (.120-.260)	505
	03-04	*	**< LOD**	**.048** (.040-.060)	**.090** (.074-.100)	**.110** (.097-.140)	637
	05-06	*	**< LOD**	**.045** (.038-.052)	**.087** (.077-.100)	**.129** (.107-.150)	1482
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**.050** (.030-.070)	**.090** (.070-.110)	**.120** (.090-.470)	225
	03-04	*	**< LOD**	**< LOD**	**.049** (.033-.066)	**.062** (.048-.100)	241
	05-06	*	**< LOD**	**.035** (<LOD-.047)	**.060** (.042-.092)	**.092** (.064-.110)	603
Non-Hispanic blacks	01-02	*	**.040** (<LOD-.080)	**.100** (.040-.180)	**.180** (.110-.350)	**.300** (.170-1.00)	192
	03-04	*	**< LOD**	**.060** (.047-.077)	**.100** (.077-.130)	**.130** (.110-.160)	264
	05-06	*	**< LOD**	**.056** (.047-.064)	**.100** (.079-.120)	**.145** (.115-.180)	781
Non-Hispanic whites	01-02	*	**.030** (<LOD-.050)	**.080** (.050-.110)	**.130** (.090-.210)	**.200** (.130-.260)	462
	03-04	*	**< LOD**	**.056** (.046-.067)	**.096** (.083-.110)	**.130** (.110-.140)	646
	05-06	*	**< LOD**	**.049** (.043-.058)	**.103** (.087-.120)	**.140** (.120-.174)	1217

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.03, 0.03, and 0.03 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html

Blood Tetrachloroethene (Perchloroethylene) (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.050** (<LOD-.060)	**.100** (.070-.150)	**.190** (.130-.260)	978
	03-04	*	**< LOD**	**< LOD**	**.076** (.060-.097)	**.140** (.091-.300)	1317
	05-06	*	**< LOD**	**< LOD**	**.070** (.056-.088)	**.126** (.098-.170)	2940
Age group							
12-19 years	05-06	*	**< LOD**	**< LOD**	**.049** (<LOD-.062)	**.079** (.057-.106)	865
20-59 years	01-02	*	**< LOD**	**.050** (<LOD-.060)	**.100** (.070-.150)	**.190** (.130-.260)	978
	03-04	*	**< LOD**	**< LOD**	**.076** (.060-.097)	**.140** (.091-.300)	1317
	05-06	*	**< LOD**	**< LOD**	**.074** (.056-.100)	**.130** (.098-.199)	1458
60 years and older	05-06	*	**< LOD**	**< LOD**	**.071** (.054-.092)	**.113** (.092-.190)	617
Gender							
Males	01-02	*	**< LOD**	**.050** (<LOD-.060)	**.110** (.070-.170)	**.210** (.170-.340)	457
	03-04	*	**< LOD**	**< LOD**	**.082** (.060-.140)	**.230** (.097-.410)	639
	05-06	*	**< LOD**	**< LOD**	**.085** (.062-.126)	**.172** (.113-.300)	1404
Females	01-02	*	**< LOD**	**.050** (<LOD-.060)	**.100** (.070-.140)	**.150** (.100-.220)	521
	03-04	*	**< LOD**	**< LOD**	**.069** (.050-.091)	**.120** (.085-.180)	678
	05-06	*	**< LOD**	**< LOD**	**.056** (.049-.071)	**.090** (.070-.130)	1536
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**< LOD**	**.060** (<LOD-.070)	**.070** (.060-.230)	226
	03-04	*	**< LOD**	**< LOD**	**.049** (<LOD-.097)	**.100** (.054-.180)	248
	05-06	*	**< LOD**	**< LOD**	**.069** (.056-.074)	**.130** (.073-.284)	713
Non-Hispanic blacks	01-02	*	**< LOD**	**< LOD**	**.070** (.050-.110)	**.110** (.060-.190)	195
	03-04	*	**< LOD**	**< LOD**	**.086** (.050-.220)	**.220** (.082-.360)	284
	05-06	*	**< LOD**	**< LOD**	**.074** (.057-.112)	**.120** (.069-.280)	776
Non-Hispanic whites	01-02	*	**< LOD**	**.050** (<LOD-.070)	**.110** (.090-.170)	**.210** (.150-.260)	487
	03-04	*	**< LOD**	**< LOD**	**.072** (.060-.091)	**.140** (.085-.330)	686
	05-06	*	**< LOD**	**< LOD**	**.070** (.053-.090)	**.130** (.092-.180)	1229

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.048, 0.048, and 0.048 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Blood Tetrachloromethane (Carbon tetrachloride) (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.140)	**.020** (.010-.050)	742
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1362
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2979
Age group							
12-19 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	882
20-59 years	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.140)	**.020** (.010-.050)	742
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1362
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1476
60 years and older	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	621
Gender							
Males	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.140)	**.010** (.010-.040)	364
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	667
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1419
Females	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.090)	**.040** (.010-.080)	378
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	695
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1560
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**< LOD**	**.010** (<LOD-.750)	**.020** (.010-.050)	193
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	266
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	740
Non-Hispanic blacks	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.020)	**.010** (<LOD-.020)	132
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	299
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	779
Non-Hispanic whites	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.140)	**.030** (.010-.080)	366
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	692
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1237

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.01, 0.005, and 0.005 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood Toluene (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**.156** (.122-.198)	**.160** (.120-.220)	**.340** (.260-.430)	**.670** (.480-.950)	**1.06** (.700-1.43)	954
	03-04	**.114** (.100-.129)	**.096** (.087-.110)	**.220** (.180-.260)	**.430** (.380-.550)	**.680** (.560-.880)	1336
	05-06	**.137** (.123-.152)	**.120** (.110-.130)	**.230** (.200-.262)	**.550** (.481-.640)	**.814** (.702-.937)	3050
Age group							
12-19 years	05-06	**.110** (.098-.122)	**.100** (.094-.120)	**.170** (.150-.180)	**.280** (.240-.310)	**.400** (.300-.610)	907
20-59 years	01-02	**.156** (.122-.198)	**.160** (.120-.220)	**.340** (.260-.430)	**.670** (.480-.950)	**1.06** (.700-1.43)	954
	03-04	**.114** (.100-.129)	**.096** (.087-.110)	**.220** (.180-.260)	**.430** (.380-.550)	**.680** (.560-.880)	1336
	05-06	**.147** (.133-.163)	**.120** (.110-.137)	**.260** (.210-.340)	**.594** (.505-.720)	**.900** (.730-1.10)	1505
60 years and older	05-06	**.124** (.100-.154)	**.114** (.097-.138)	**.190** (.167-.230)	**.520** (.370-.600)	**.720** (.600-.814)	638
Gender							
Males	01-02	**.165** (.130-.209)	**.170** (.120-.230)	**.360** (.260-.520)	**.780** (.580-1.06)	**1.22** (.850-1.43)	450
	03-04	**.128** (.112-.148)	**.110** (.096-.130)	**.250** (.190-.310)	**.500** (.380-.660)	**.730** (.590-1.10)	647
	05-06	**.152** (.139-.166)	**.130** (.120-.140)	**.280** (.240-.330)	**.640** (.550-.720)	**.920** (.790-1.10)	1441
Females	01-02	**.147** (.114-.190)	**.150** (.110-.220)	**.320** (.240-.390)	**.550** (.400-.740)	**.810** (.530-1.63)	504
	03-04	**.101** (.086-.118)	**.085** (.070-.100)	**.190** (.150-.230)	**.410** (.340-.500)	**.580** (.480-.750)	689
	05-06	**.124** (.107-.144)	**.110** (.097-.130)	**.190** (.170-.230)	**.470** (.380-.550)	**.690** (.550-.880)	1609
Race/ethnicity							
Mexican Americans	01-02	**.136** (.106-.176)	**.140** (.080-.210)	**.270** (.210-.340)	**.550** (.400-.980)	**.990** (.500-1.30)	219
	03-04	**.084** (.074-.096)	**.076** (.064-.091)	**.120** (.100-.170)	**.280** (.170-.410)	**.400** (.310-.620)	253
	05-06	**.110** (.097-.125)	**.110** (.096-.120)	**.160** (.140-.170)	**.240** (.220-.290)	**.340** (.290-.460)	737
Non-Hispanic blacks	01-02	**.137** (.089-.210)	**.150** (.070-.200)	**.310** (.200-.460)	**.690** (.390-1.19)	**1.15** (.660-1.69)	194
	03-04	**.105** (.077-.144)	**.095** (.070-.130)	**.200** (.130-.330)	**.440** (.290-.620)	**.620** (.480-.710)	297
	05-06	**.139** (.120-.161)	**.120** (.099-.140)	**.230** (.190-.290)	**.450** (.370-.550)	**.670** (.550-.830)	796
Non-Hispanic whites	01-02	**.165** (.125-.217)	**.170** (.120-.240)	**.350** (.270-.450)	**.710** (.450-1.12)	**1.14** (.710-1.63)	467
	03-04	**.123** (.110-.139)	**.100** (.092-.120)	**.240** (.210-.280)	**.500** (.400-.590)	**.750** (.590-.940)	685
	05-06	**.144** (.125-.166)	**.130** (.110-.140)	**.260** (.210-.330)	**.600** (.510-.710)	**.880** (.760-.990)	1291

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.025, 0.025, and 0.025 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Toluene_BiomonitoringSummary.html

Blood Trichloroethene (Trichloroethylene) (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	922
	03-04	*	< LOD	< LOD	< LOD	< LOD	1228
	05-06	*	< LOD	< LOD	< LOD	< LOD	3178
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	937
20-59 years	01-02	*	< LOD	< LOD	< LOD	< LOD	922
	03-04	*	< LOD	< LOD	< LOD	< LOD	1228
	05-06	*	< LOD	< LOD	< LOD	< LOD	1562
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	679
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	434
	03-04	*	< LOD	< LOD	< LOD	< LOD	604
	05-06	*	< LOD	< LOD	< LOD	< LOD	1504
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	488
	03-04	*	< LOD	< LOD	< LOD	< LOD	624
	05-06	*	< LOD	< LOD	< LOD	< LOD	1674
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	228
	03-04	*	< LOD	< LOD	< LOD	< LOD	224
	05-06	*	< LOD	< LOD	< LOD	< LOD	773
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	191
	03-04	*	< LOD	< LOD	< LOD	< LOD	266
	05-06	*	< LOD	< LOD	< LOD	< LOD	828
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	441
	03-04	*	< LOD	< LOD	< LOD	< LOD	644
	05-06	*	< LOD	< LOD	< LOD	< LOD	1341

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.012, 0.012, and 0.012 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Blood *m*- and *p*-Xylene (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**.156** (.124-.198)	**.150** (.110-.200)	**.280** (.190-.430)	**.500** (.370-.690)	**.670** (.500-.890)	962
	03-04	**.136** (.123-.150)	**.130** (.120-.150)	**.200** (.190-.210)	**.280** (.260-.300)	**.340** (.310-.400)	1346
	05-06	**.132** (.122-.143)	**.120** (.110-.130)	**.190** (.170-.210)	**.301** (.270-.330)	**.410** (.360-.450)	3133
Age group							
12-19 years	05-06	**.118** (.106-.130)	**.120** (.110-.120)	**.160** (.150-.170)	**.220** (.190-.270)	**.330** (.240-.380)	923
20-59 years	01-02	**.156** (.124-.198)	**.150** (.110-.200)	**.280** (.190-.430)	**.500** (.370-.690)	**.670** (.500-.890)	962
	03-04	**.136** (.123-.150)	**.130** (.120-.150)	**.200** (.190-.210)	**.280** (.260-.300)	**.340** (.310-.400)	1346
	05-06	**.137** (.127-.147)	**.130** (.120-.140)	**.200** (.180-.220)	**.320** (.280-.350)	**.430** (.360-.480)	1542
60 years and older	05-06	**.126** (.112-.142)	**.120** (.100-.130)	**.184** (.150-.220)	**.303** (.240-.360)	**.400** (.335-.463)	668
Gender							
Males	01-02	**.155** (.121-.200)	**.140** (.110-.190)	**.280** (.180-.440)	**.510** (.350-.700)	**.700** (.500-.890)	455
	03-04	**.149** (.134-.166)	**.140** (.130-.170)	**.220** (.200-.230)	**.290** (.270-.320)	**.380** (.300-.490)	654
	05-06	**.145** (.135-.157)	**.130** (.130-.147)	**.220** (.190-.240)	**.340** (.310-.370)	**.460** (.430-.490)	1480
Females	01-02	**.157** (.124-.199)	**.150** (.110-.220)	**.270** (.190-.410)	**.480** (.360-.650)	**.650** (.460-.890)	507
	03-04	**.124** (.112-.138)	**.130** (.110-.140)	**.180** (.160-.200)	**.270** (.240-.300)	**.340** (.290-.390)	692
	05-06	**.120** (.109-.132)	**.110** (.100-.123)	**.170** (.151-.197)	**.260** (.220-.320)	**.340** (.300-.420)	1653
Race/ethnicity							
Mexican Americans	01-02	**.134** (.097-.184)	**.130** (.090-.180)	**.240** (.150-.370)	**.400** (.290-.540)	**.540** (.380-1.10)	223
	03-04	**.132** (.109-.160)	**.120** (.110-.150)	**.180** (.140-.230)	**.250** (.220-.320)	**.360** (.260-.490)	257
	05-06	**.108** (.093-.125)	**.110** (.098-.120)	**.150** (.130-.170)	**.220** (.170-.290)	**.270** (.220-.370)	755
Non-Hispanic blacks	01-02	**.147** (.107-.202)	**.140** (.090-.220)	**.280** (.160-.460)	**.470** (.330-.850)	**.590** (.420-1.08)	198
	03-04	**.117** (.094-.146)	**.120** (.099-.140)	**.170** (.140-.220)	**.270** (.210-.330)	**.330** (.260-.450)	297
	05-06	**.131** (.120-.144)	**.120** (.110-.140)	**.190** (.170-.210)	**.280** (.250-.320)	**.350** (.320-.392)	823
Non-Hispanic whites	01-02	**.163** (.124-.214)	**.160** (.110-.220)	**.300** (.190-.480)	**.520** (.370-.740)	**.700** (.510-.960)	468
	03-04	**.141** (.128-.155)	**.140** (.130-.150)	**.210** (.190-.220)	**.290** (.270-.310)	**.350** (.330-.400)	690
	05-06	**.136** (.125-.147)	**.130** (.120-.140)	**.200** (.180-.220)	**.324** (.280-.350)	**.430** (.368-.480)	1323

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.034, 0.034, and 0.034 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Blood *o*-Xylene (2001 – 2006)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.070** (.050-.080)	**.100** (.080-.130)	**.130** (.110-.180)	981
	03-04	*	**< LOD**	**.051** (<LOD-.057)	**.072** (.066-.079)	**.090** (.081-.097)	1365
	05-06	**.037** (.034-.040)	**.035** (.032-.039)	**.053** (.047-.061)	**.083** (.072-.094)	**.110** (.094-.120)	3153
Age group							
12-19 years	05-06	**.032** (.030-.034)	**.031** (.029-.034)	**.044** (.040-.049)	**.062** (.053-.075)	**.088** (.072-.100)	929
20-59 years	01-02	*	**< LOD**	**.070** (.050-.080)	**.100** (.080-.130)	**.130** (.110-.180)	981
	03-04	*	**< LOD**	**.051** (<LOD-.057)	**.072** (.066-.079)	**.090** (.081-.097)	1365
	05-06	**.038** (.034-.041)	**.036** (.032-.039)	**.055** (.048-.062)	**.083** (.073-.094)	**.110** (.093-.120)	1547
60 years and older	05-06	**.038** (.033-.044)	**.036** (.032-.042)	**.054** (.046-.065)	**.092** (.065-.115)	**.115** (.094-.150)	677
Gender							
Males	01-02	*	**< LOD**	**.070** (.050-.090)	**.110** (.080-.140)	**.150** (.110-.180)	465
	03-04	*	**< LOD**	**.057** (.050-.060)	**.074** (.068-.084)	**.096** (.084-.110)	667
	05-06	**.040** (.036-.045)	**.038** (.033-.041)	**.058** (.050-.070)	**.092** (.082-.100)	**.120** (.100-.140)	1487
Females	01-02	*	**< LOD**	**.060** (.050-.080)	**.100** (.070-.130)	**.120** (.100-.180)	516
	03-04	*	**< LOD**	**< LOD**	**.067** (.059-.076)	**.085** (.074-.095)	698
	05-06	**.034** (.032-.037)	**.034** (.031-.036)	**.049** (.044-.054)	**.072** (.060-.086)	**.094** (.078-.110)	1666
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**.060** (<LOD-.080)	**.090** (.080-.110)	**.120** (.090-.270)	227
	03-04	*	**< LOD**	**.052** (<LOD-.067)	**.074** (.067-.080)	**.100** (.075-.130)	265
	05-06	**.030** (.027-.033)	**.029** (.026-.031)	**.040** (.036-.045)	**.057** (.050-.069)	**.079** (.062-.097)	777
Non-Hispanic blacks	01-02	*	**< LOD**	**.050** (<LOD-.070)	**.100** (.080-.110)	**.110** (.100-.160)	197
	03-04	*	**< LOD**	**< LOD**	**.065** (.055-.078)	**.084** (.068-.100)	301
	05-06	**.035** (.033-.038)	**.034** (.031-.038)	**.049** (.045-.054)	**.073** (.064-.077)	**.088** (.078-.100)	824
Non-Hispanic whites	01-02	*	**< LOD**	**.070** (.050-.090)	**.110** (.080-.140)	**.140** (.110-.180)	483
	03-04	*	**< LOD**	**.052** (<LOD-.058)	**.073** (.066-.082)	**.090** (.081-.100)	694
	05-06	**.039** (.035-.043)	**.037** (.033-.041)	**.056** (.049-.064)	**.087** (.074-.100)	**.110** (.096-.130)	1319

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.049, 0.049, and 0.024 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary N-Acetyl-S-(benzyl)-L-cysteine (2005 - 2006)

Metabolite of Toluene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**6.80** (6.43-7.20)	**6.81** (6.14-7.39)	**12.8** (11.8-13.8)	**24.0** (22.5-26.4)	**39.8** (36.6-42.0)	3347
12-19 years	05-06	**7.54** (6.60-8.62)	**7.70** (6.87-8.94)	**13.5** (11.8-15.3)	**23.9** (19.7-30.8)	**38.9** (28.3-50.0)	1032
20 years and older	05-06	**6.69** (6.34-7.06)	**6.67** (5.95-7.30)	**12.6** (11.5-13.7)	**24.0** (22.6-26.3)	**40.1** (35.5-43.0)	2309
Males	05-06	**7.10** (6.63-7.61)	**6.93** (6.16-7.59)	**12.7** (11.5-14.0)	**23.8** (21.5-26.9)	**38.7** (31.1-43.0)	1589
Females	05-06	**6.53** (6.02-7.08)	**6.66** (5.83-7.33)	**12.8** (11.7-13.8)	**24.3** (21.2-27.8)	**41.3** (34.0-47.7)	1753
Mexican Americans	05-06	**7.59** (6.72-8.57)	**7.69** (6.61-8.53)	**13.9** (12.1-15.9)	**23.8** (21.0-29.3)	**38.7** (29.9-50.7)	820
Non-Hispanic blacks	05-06	**11.3** (10.2-12.6)	**11.4** (10.2-12.8)	**22.7** (19.9-24.1)	**41.8** (36.7-48.1)	**64.6** (50.9-76.4)	899
Non-Hispanic whites	05-06	**6.15** (5.79-6.53)	**6.05** (5.55-6.71)	**11.4** (10.7-12.3)	**20.0** (18.3-22.9)	**34.0** (28.2-39.8)	1369

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.5.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Toluene_BiomonitoringSummary.html

Urinary N-Acetyl-S-(benzyl)-L-cysteine (2011 - 2012)

Metabolite of Toluene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**6.47** (6.12-6.83)	**6.45** (6.01-6.88)	**12.3** (10.9-13.7)	**23.6** (20.4-27.2)	**37.9** (32.1-45.9)	2466
Age group							
6-11 years	11-12	**6.11** (5.37-6.96)	**6.63** (5.60-7.34)	**11.4** (9.82-14.2)	**23.1** (16.9-25.3)	**29.7** (24.9-48.2)	394
12-19 years	11-12	**6.51** (5.53-7.65)	**6.66** (5.73-7.56)	**12.8** (10.1-16.9)	**23.2** (17.8-33.4)	**36.5** (23.9-66.0)	384
20 years and older	11-12	**6.50** (6.02-7.02)	**6.31** (5.84-7.01)	**12.3** (10.5-14.7)	**23.7** (20.1-28.4)	**38.7** (31.9-53.9)	1688
Gender							
Males	11-12	**6.81** (6.34-7.31)	**6.83** (6.09-7.65)	**12.5** (11.1-14.0)	**23.6** (19.3-29.8)	**39.7** (29.9-62.7)	1251
Females	11-12	**6.15** (5.56-6.82)	**6.15** (5.77-6.64)	**12.1** (9.98-14.5)	**23.2** (19.5-28.7)	**35.4** (29.7-53.9)	1215
Race/ethnicity							
Mexican Americans	11-12	**5.76** (4.82-6.87)	**5.87** (5.02-6.50)	**9.68** (7.99-12.3)	**19.1** (15.9-23.6)	**29.9** (19.1-42.8)	313
Non-Hispanic blacks	11-12	**11.0** (10.1-11.9)	**10.6** (9.57-11.9)	**21.6** (17.8-24.8)	**39.7** (34.2-45.5)	**68.3** (52.3-95.4)	662
Non-Hispanic whites	11-12	**5.90** (5.57-6.25)	**5.92** (5.35-6.47)	**10.9** (10.0-12.1)	**19.5** (17.7-23.2)	**32.1** (25.3-39.3)	810
All Hispanics	11-12	**6.52** (5.53-7.70)	**6.17** (5.50-7.39)	**12.2** (9.53-15.4)	**23.2** (18.3-31.6)	**39.1** (24.7-56.9)	566
Asians	11-12	**5.25** (4.39-6.28)	**5.30** (4.17-6.82)	**10.8** (8.50-12.9)	**20.5** (16.9-26.1)	**35.8** (23.1-51.5)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Toluene_BiomonitoringSummary.html

Urinary N-Acetyl-S-(benzyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Toluene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**6.81** (6.10-7.60)	**6.39** (5.76-7.04)	**10.0** (8.98-11.0)	**16.1** (14.0-19.7)	**26.1** (19.4-36.6)	557
12-19 years	05-06	**5.71** (5.07-6.43)	**5.76** (4.26-6.68)	**8.90** (7.59-11.0)	**12.2** (10.3-15.5)	**16.1** (12.2-22.8)	175
20 years and older	05-06	**7.01** (6.20-7.93)	**6.57** (5.94-7.14)	**10.2** (8.98-11.6)	**18.1** (14.1-23.1)	**27.5** (19.3-43.1)	382
Males	05-06	**5.87** (5.30-6.50)	**5.75** (4.93-6.59)	**9.05** (7.78-10.0)	**12.9** (10.5-15.9)	**18.8** (13.8-22.1)	274
Females	05-06	**7.81** (6.67-9.14)	**7.00** (6.29-7.76)	**11.3** (8.98-13.5)	**23.1** (14.8-33.7)	**38.4** (19.5-89.6)	283
Mexican Americans	05-06	**6.90** (5.79-8.23)	**6.26** (5.20-6.80)	**10.2** (7.04-13.3)	**16.5** (11.4-22.8)	**22.1** (13.3-122)	118
Non-Hispanic blacks	05-06	**7.93** (7.07-8.90)	**7.55** (5.96-9.18)	**13.4** (10.6-19.1)	**23.1** (19.1-33.7)	**37.9** (23.1-68.8)	156
Non-Hispanic whites	05-06	**6.36** (5.63-7.17)	**6.05** (5.29-7.18)	**9.17** (8.25-10.4)	**14.0** (10.7-19.4)	**23.3** (14.8-33.7)	242

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Toluene_BiomonitoringSummary.html

Urinary N-Acetyl-S-(benzyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Toluene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**7.39** (7.07-7.72)	**6.68** (6.36-7.00)	**12.2** (11.1-13.1)	**21.0** (19.3-23.9)	**36.4** (29.2-44.7)	2464
Age group							
6-11 years	11-12	**8.78** (8.11-9.50)	**7.88** (7.00-8.46)	**12.8** (11.8-14.1)	**24.5** (18.2-29.5)	**33.1** (23.7-56.4)	393
12-19 years	11-12	**6.34** (5.51-7.29)	**5.73** (4.72-6.94)	**10.0** (8.30-12.3)	**17.4** (13.3-20.2)	**25.7** (17.7-32.4)	384
20 years and older	11-12	**7.42** (6.98-7.89)	**6.70** (6.23-7.24)	**12.5** (11.1-13.7)	**21.9** (19.1-25.1)	**39.4** (30.1-49.1)	1687
Gender							
Males	11-12	**6.40** (6.04-6.78)	**5.78** (5.41-6.09)	**9.52** (8.74-10.5)	**17.7** (15.3-21.7)	**29.5** (21.3-39.6)	1250
Females	11-12	**8.49** (7.86-9.17)	**7.62** (7.11-8.30)	**14.2** (12.7-15.5)	**24.7** (22.2-27.0)	**40.4** (31.4-49.1)	1214
Race/ethnicity							
Mexican Americans	11-12	**6.50** (5.31-7.96)	**5.99** (4.63-8.22)	**10.4** (8.29-12.9)	**17.9** (12.9-23.5)	**24.1** (20.0-30.6)	313
Non-Hispanic blacks	11-12	**8.56** (7.91-9.26)	**7.73** (6.92-8.43)	**14.4** (13.0-15.8)	**26.0** (22.5-31.9)	**46.9** (31.9-63.2)	662
Non-Hispanic whites	11-12	**7.21** (6.86-7.58)	**6.49** (5.91-6.98)	**11.8** (10.0-13.1)	**19.7** (17.3-24.5)	**37.9** (25.7-50.1)	808
All Hispanics	11-12	**7.30** (6.38-8.36)	**6.67** (5.87-7.70)	**11.4** (10.2-12.9)	**21.9** (19.1-24.4)	**30.4** (24.6-35.3)	566
Asians	11-12	**7.02** (6.14-8.04)	**6.59** (5.74-7.97)	**11.9** (10.3-13.8)	**24.6** (17.9-30.1)	**35.5** (27.0-63.6)	341

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Toluene_BiomonitoringSummary.html

Urinary N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine (2005 - 2006)

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**20.9** (19.5-22.5)	**21.5** (18.9-24.1)	**43.0** (40.1-45.6)	**74.0** (66.2-84.1)	**103** (94.2-111)	3348
12-19 years	05-06	**23.7** (20.5-27.5)	**26.1** (20.7-31.4)	**47.2** (40.5-54.3)	**73.0** (63.4-85.2)	**96.8** (78.3-131)	1034
20 years and older	05-06	**20.5** (19.1-22.1)	**20.5** (18.5-23.0)	**42.6** (39.6-45.0)	**74.5** (67.3-85.3)	**104** (94.2-113)	2312
Males	05-06	**24.3** (22.5-26.2)	**26.4** (23.7-28.7)	**48.4** (44.4-56.1)	**82.5** (73.6-92.2)	**113** (96.9-140)	1590
Females	05-06	**18.2** (16.7-19.8)	**17.5** (14.5-20.4)	**36.9** (32.6-40.6)	**64.0** (55.0-77.1)	**95.9** (77.1-106)	1756
Mexican Americans	05-06	**19.5** (17.5-21.7)	**20.5** (17.9-24.0)	**37.8** (32.2-45.9)	**70.8** (60.2-78.5)	**89.4** (76.5-103)	820
Non-Hispanic blacks	05-06	**26.2** (23.8-28.9)	**28.8** (24.8-33.3)	**52.9** (46.3-59.3)	**88.8** (74.5-104)	**116** (103-134)	901
Non-Hispanic whites	05-06	**20.8** (18.9-22.8)	**21.5** (18.5-24.2)	**42.9** (39.4-45.9)	**73.6** (64.6-85.3)	**99.1** (87.7-115)	1368

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 9.4.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine (2011 - 2012)

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**15.4** (14.5-16.3)	**14.7** (13.7-15.6)	**24.6** (22.5-26.9)	**44.2** (41.8-48.0)	**64.1** (54.1-78.0)	2466
Age group							
6-11 years	11-12	**15.3** (14.0-16.6)	**15.9** (13.9-18.2)	**23.9** (21.8-26.3)	**38.1** (31.0-45.1)	**50.9** (36.5-60.8)	394
12-19 years	11-12	**16.6** (14.5-19.0)	**16.4** (12.0-20.4)	**27.8** (22.9-35.5)	**49.0** (38.5-65.4)	**68.0** (52.0-85.0)	384
20 years and older	11-12	**15.2** (14.3-16.3)	**14.3** (13.0-15.7)	**24.1** (21.8-26.7)	**43.5** (39.7-49.0)	**64.5** (52.2-85.2)	1688
Gender							
Males	11-12	**16.6** (15.3-18.0)	**16.1** (14.5-17.7)	**26.3** (24.1-29.7)	**43.6** (39.7-48.8)	**63.4** (52.5-74.8)	1251
Females	11-12	**14.3** (13.3-15.3)	**12.8** (11.5-14.4)	**22.4** (21.0-25.4)	**44.8** (36.6-50.6)	**66.5** (50.7-88.9)	1215
Race/ethnicity							
Mexican Americans	11-12	**15.9** (14.2-17.9)	**16.5** (15.1-17.9)	**25.2** (21.9-30.2)	**38.7** (30.2-51.9)	**51.9** (38.7-71.5)	313
Non-Hispanic blacks	11-12	**17.6** (16.0-19.4)	**16.8** (15.2-19.6)	**29.2** (24.5-34.7)	**53.0** (45.4-62.6)	**74.8** (64.0-90.8)	662
Non-Hispanic whites	11-12	**15.5** (14.2-16.8)	**14.5** (13.0-16.4)	**25.0** (21.7-28.8)	**44.9** (40.9-49.0)	**66.3** (50.6-91.7)	810
All Hispanics	11-12	**14.8** (13.4-16.3)	**15.0** (12.9-15.9)	**23.4** (20.8-26.5)	**37.9** (30.2-50.1)	**51.9** (41.2-64.2)	566
Asians	11-12	*	**< LOD**	**17.2** (14.5-19.0)	**24.1** (22.4-26.8)	**29.9** (25.5-41.7)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 9.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**21.0** (18.5-23.8)	**21.7** (19.2-23.8)	**36.4** (32.4-40.1)	**57.7** (49.8-64.1)	**71.4** (61.9-78.3)	557
12-19 years	05-06	**17.0** (13.6-21.1)	**18.7** (14.0-21.7)	**25.7** (19.6-33.7)	**36.5** (27.6-45.9)	**45.9** (32.6-86.4)	175
20 years and older	05-06	**21.8** (19.2-24.6)	**22.2** (20.2-24.3)	**39.1** (35.0-43.1)	**61.9** (51.3-69.0)	**72.3** (63.2-78.3)	382
Males	05-06	**20.0** (17.2-23.3)	**20.2** (18.3-23.0)	**30.8** (25.7-37.8)	**50.0** (39.1-63.2)	**63.2** (48.3-69.4)	274
Females	05-06	**22.0** (19.0-25.3)	**22.5** (19.2-27.2)	**40.3** (35.8-46.1)	**63.2** (51.2-74.3)	**75.1** (64.1-89.5)	283
Mexican Americans	05-06	**17.5** (13.8-22.2)	**17.7** (15.6-19.6)	**28.5** (19.5-38.4)	**44.8** (30.2-66.7)	**63.2** (34.6-73.3)	118
Non-Hispanic blacks	05-06	**17.9** (15.2-21.1)	**17.5** (13.6-21.4)	**31.0** (25.7-37.2)	**50.0** (37.2-56.1)	**56.0** (43.1-80.4)	156
Non-Hispanic whites	05-06	**22.6** (18.8-27.1)	**23.0** (19.6-27.4)	**39.1** (30.8-47.5)	**61.6** (51.2-69.4)	**72.9** (61.9-80.5)	242

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**17.6** (16.6-18.6)	**16.6** (15.9-17.5)	**26.6** (24.6-27.7)	**39.3** (36.6-44.3)	**59.8** (50.0-66.5)	2464
Age group							
6-11 years	11-12	**21.8** (20.1-23.7)	**20.1** (19.0-21.5)	**29.5** (27.6-32.2)	**42.3** (36.6-52.6)	**57.6** (40.0-76.1)	393
12-19 years	11-12	**16.2** (14.2-18.4)	**14.8** (13.2-16.2)	**21.9** (19.0-26.6)	**39.7** (29.6-67.7)	**69.5** (37.5-95.0)	384
20 years and older	11-12	**17.4** (16.4-18.4)	**16.6** (15.6-17.5)	**26.6** (24.6-27.7)	**39.1** (36.5-44.1)	**59.1** (44.6-66.7)	1687
Gender							
Males	11-12	**15.6** (14.7-16.5)	**14.8** (14.1-15.5)	**22.9** (20.7-24.9)	**36.0** (33.3-38.5)	**46.0** (39.1-55.4)	1250
Females	11-12	**19.7** (18.3-21.2)	**19.0** (17.5-20.3)	**28.8** (27.0-31.6)	**47.5** (38.9-59.5)	**66.7** (58.2-73.9)	1214
Race/ethnicity							
Mexican Americans	11-12	**18.0** (15.5-20.8)	**17.5** (14.9-20.3)	**24.9** (21.3-30.2)	**35.1** (28.9-45.5)	**48.4** (33.4-62.0)	313
Non-Hispanic blacks	11-12	**13.7** (12.6-15.0)	**13.5** (12.1-14.6)	**21.0** (18.9-23.8)	**34.0** (29.3-37.4)	**42.1** (38.9-44.3)	662
Non-Hispanic whites	11-12	**18.9** (17.7-20.2)	**17.7** (16.6-19.0)	**27.7** (26.6-28.9)	**41.6** (36.9-54.1)	**63.9** (55.6-70.0)	808
All Hispanics	11-12	**16.5** (14.8-18.5)	**16.0** (13.9-18.5)	**23.5** (20.4-27.7)	**35.0** (30.6-39.8)	**44.3** (35.1-55.4)	566
Asians	11-12	*	**< LOD**	**22.0** (18.8-24.1)	**31.7** (27.0-37.3)	**44.3** (31.8-51.2)	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carbamoylethyl)-L-cysteine (2005 - 2006)

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**56.6** (52.3-61.2)	**58.6** (53.9-64.7)	**113** (105-123)	**209** (182-247)	**313** (266-343)	3343
12-19 years	05-06	**68.7** (61.5-76.8)	**72.0** (63.1-83.1)	**126** (108-156)	**211** (176-239)	**295** (235-334)	1030
20 years and older	05-06	**54.9** (50.6-59.5)	**56.8** (51.8-62.4)	**110** (102-120)	**208** (179-248)	**313** (265-345)	2310
Males	05-06	**69.7** (64.9-74.9)	**70.1** (65.3-76.0)	**133** (117-148)	**253** (202-305)	**363** (305-413)	1587
Females	05-06	**46.3** (42.3-50.7)	**48.8** (43.5-53.6)	**93.0** (84.5-106)	**175** (148-200)	**242** (196-314)	1752
Mexican Americans	05-06	**59.8** (53.8-66.5)	**69.8** (61.7-75.9)	**112** (102-130)	**178** (164-193)	**231** (196-299)	821
Non-Hispanic blacks	05-06	**75.8** (67.1-85.6)	**80.1** (68.9-91.2)	**138** (119-155)	**259** (206-331)	**366** (292-442)	897
Non-Hispanic whites	05-06	**55.4** (50.8-60.5)	**56.8** (52.1-61.6)	**112** (102-121)	**219** (176-260)	**314** (260-345)	1368

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 2.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carbamoylethyl)-L-cysteine (2011 - 2012)

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**46.6** (43.6-49.9)	**45.9** (43.1-48.9)	**88.4** (82.8-95.9)	**170** (155-195)	**276** (211-370)	2466
Age group							
6-11 years	11-12	**39.6** (36.0-43.5)	**44.5** (40.0-51.5)	**69.8** (60.5-82.2)	**111** (96.8-126)	**139** (122-187)	394
12-19 years	11-12	**53.5** (45.2-63.4)	**49.8** (41.9-66.3)	**119** (95.2-142)	**168** (158-202)	**279** (168-439)	384
20 years and older	11-12	**46.5** (42.6-50.7)	**45.2** (42.4-49.0)	**85.8** (79.9-97.4)	**181** (154-208)	**285** (221-384)	1688
Gender							
Males	11-12	**55.6** (50.8-60.9)	**53.4** (48.8-59.8)	**101** (84.9-116)	**177** (157-215)	**276** (220-382)	1251
Females	11-12	**39.3** (35.4-43.7)	**38.7** (34.9-42.8)	**75.3** (67.1-84.6)	**158** (127-195)	**272** (193-382)	1215
Race/ethnicity							
Mexican Americans	11-12	**48.6** (41.6-56.9)	**51.5** (42.7-59.8)	**87.7** (75.1-108)	**143** (108-195)	**195** (143-274)	313
Non-Hispanic blacks	11-12	**59.3** (54.0-65.0)	**55.8** (49.9-62.2)	**115** (93.8-141)	**234** (178-276)	**349** (293-419)	662
Non-Hispanic whites	11-12	**46.4** (42.0-51.3)	**45.1** (41.4-49.6)	**87.6** (78.5-101)	**168** (151-202)	**285** (195-420)	810
All Hispanics	11-12	**43.4** (37.3-50.5)	**45.6** (38.7-52.2)	**80.0** (69.1-91.1)	**143** (112-186)	**192** (163-264)	566
Asians	11-12	**31.8** (27.6-36.6)	**33.3** (29.0-39.7)	**58.4** (50.1-71.9)	**109** (78.3-145)	**153** (131-200)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.2.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carbamoylethyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**56.6** (52.1-61.4)	**50.7** (47.1-57.8)	**92.7** (78.1-101)	**172** (127-202)	**243** (196-293)	557
12-19 years	05-06	**53.5** (47.1-60.8)	**50.1** (46.9-56.2)	**78.3** (61.9-85.8)	**107** (85.8-162)	**162** (98.9-364)	175
20 years and older	05-06	**57.1** (52.2-62.4)	**50.7** (46.1-60.9)	**98.2** (77.8-113)	**184** (127-221)	**249** (197-304)	382
Males	05-06	**58.4** (51.7-66.0)	**49.8** (47.1-58.8)	**86.4** (66.1-111)	**165** (98.8-253)	**249** (151-377)	274
Females	05-06	**54.9** (48.3-62.4)	**51.7** (43.0-62.3)	**98.2** (77.0-113)	**172** (113-263)	**243** (162-334)	283
Mexican Americans	05-06	**49.4** (35.4-69.1)	**50.8** (39.2-67.5)	**86.3** (57.7-132)	**134** (82.2-287)	**167** (123-287)	118
Non-Hispanic blacks	05-06	**52.5** (42.3-65.1)	**43.9** (34.2-69.8)	**92.9** (78.0-117)	**160** (116-253)	**243** (125-339)	156
Non-Hispanic whites	05-06	**60.5** (54.0-67.8)	**52.6** (47.7-62.5)	**98.2** (77.0-113)	**184** (126-234)	**243** (187-304)	242

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carbamoylethyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**53.3** (50.3-56.4)	**49.5** (47.4-51.7)	**82.0** (76.6-89.4)	**146** (127-168)	**199** (167-237)	2464
Age group							
6-11 years	11-12	**56.8** (53.5-60.4)	**52.8** (50.9-56.2)	**77.9** (70.3-84.6)	**119** (105-143)	**173** (121-202)	393
12-19 years	11-12	**52.1** (46.3-58.7)	**48.2** (42.5-53.3)	**81.1** (66.5-94.7)	**133** (105-203)	**203** (128-366)	384
20 years and older	11-12	**53.1** (49.7-56.6)	**49.0** (46.0-52.0)	**83.1** (76.6-91.5)	**150** (129-173)	**199** (162-262)	1687
Gender							
Males	11-12	**52.3** (49.0-55.8)	**48.4** (43.4-54.6)	**82.5** (73.5-92.8)	**145** (124-159)	**187** (159-230)	1250
Females	11-12	**54.3** (49.5-59.6)	**50.3** (46.8-53.7)	**82.0** (73.7-93.9)	**155** (127-175)	**210** (170-283)	1214
Race/ethnicity							
Mexican Americans	11-12	**54.9** (45.6-66.1)	**53.2** (45.3-61.0)	**86.8** (69.9-104)	**137** (104-183)	**183** (135-215)	313
Non-Hispanic blacks	11-12	**46.2** (42.7-50.0)	**43.2** (41.0-46.4)	**74.7** (66.4-80.8)	**134** (110-156)	**175** (148-210)	662
Non-Hispanic whites	11-12	**56.8** (52.7-61.2)	**51.7** (48.5-55.3)	**88.1** (79.3-98.1)	**159** (129-186)	**215** (170-306)	808
All Hispanics	11-12	**48.6** (41.8-56.3)	**46.4** (42.0-50.7)	**76.5** (65.7-87.6)	**122** (101-143)	**173** (127-215)	566
Asians	11-12	**42.5** (38.4-47.0)	**40.9** (35.5-45.1)	**69.0** (58.1-79.3)	**106** (94.3-126)	**154** (124-166)	341

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carboxyethyl)-L-cysteine (2005 - 2006)

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**95.8** (88.9-103)	**102** (91.6-114)	**195** (180-213)	**342** (317-383)	**530** (478-557)	3345
12-19 years	05-06	**99.4** (83.5-118)	**115** (92.1-137)	**186** (170-213)	**296** (269-347)	**399** (347-459)	1031
20 years and older	05-06	**95.2** (88.2-103)	**100** (89.5-112)	**197** (179-214)	**356** (319-392)	**539** (482-575)	2311
Males	05-06	**117** (109-125)	**125** (113-138)	**214** (192-241)	**385** (319-473)	**557** (482-624)	1588
Females	05-06	**79.4** (71.3-88.4)	**82.6** (73.6-93.1)	**173** (159-189)	**311** (281-367)	**474** (386-539)	1752
Mexican Americans	05-06	**85.5** (76.2-95.8)	**92.3** (82.5-106)	**167** (141-191)	**263** (237-291)	**342** (280-439)	819
Non-Hispanic blacks	05-06	**151** (137-166)	**156** (139-178)	**288** (248-318)	**474** (419-547)	**637** (512-746)	898
Non-Hispanic whites	05-06	**91.0** (82.9-99.9)	**93.2** (82.7-104)	**189** (169-210)	**333** (300-381)	**519** (437-570)	1369

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 8.0.

Urinary N-Acetyl-S-(2-carboxyethyl)-L-cysteine (2011 - 2012)

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**96.5** (88.6-105)	**100** (93.6-109)	**195** (179-215)	**354** (320-405)	**494** (432-603)	2466
Age group							
6-11 years	11-12	**77.5** (68.2-87.9)	**79.2** (62.6-98.4)	**158** (136-181)	**257** (217-330)	**358** (267-528)	394
12-19 years	11-12	**81.8** (64.8-103)	**94.2** (70.7-109)	**159** (122-205)	**279** (217-322)	**414** (315-473)	384
20 years and older	11-12	**101** (92.3-111)	**104** (94.6-118)	**205** (184-228)	**377** (324-432)	**527** (445-685)	1688
Gender							
Males	11-12	**116** (106-128)	**118** (107-126)	**216** (191-252)	**381** (343-448)	**528** (474-620)	1251
Females	11-12	**80.5** (71.5-90.7)	**82.3** (71.2-94.6)	**178** (156-195)	**321** (262-386)	**447** (371-654)	1215
Race/ethnicity							
Mexican Americans	11-12	**90.3** (77.9-105)	**88.2** (82.2-101)	**158** (130-187)	**270** (199-343)	**399** (270-615)	313
Non-Hispanic blacks	11-12	**142** (129-156)	**150** (135-163)	**260** (238-288)	**404** (350-468)	**581** (491-665)	662
Non-Hispanic whites	11-12	**93.0** (82.6-105)	**96.7** (87.5-109)	**193** (166-222)	**367** (310-416)	**494** (431-642)	810
All Hispanics	11-12	**88.6** (76.2-103)	**91.4** (77.7-109)	**161** (130-190)	**291** (228-341)	**411** (325-512)	566
Asians	11-12	**73.2** (66.7-80.2)	**77.6** (67.6-86.3)	**135** (123-161)	**257** (198-314)	**366** (286-476)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 8.0.

Urinary N-Acetyl-S-(2-carboxyethyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**98.2** (90.0-107)	**94.8** (82.1-103)	**159** (138-188)	**282** (240-357)	**397** (324-457)	557
12-19 years	05-06	**78.7** (66.8-92.8)	**75.0** (61.3-94.8)	**118** (93.4-159)	**185** (135-250)	**226** (159-623)	175
20 years and older	05-06	**102** (92.2-113)	**99.0** (82.1-114)	**175** (138-207)	**298** (257-379)	**398** (324-498)	382
Males	05-06	**92.9** (82.7-104)	**90.6** (78.0-102)	**144** (121-182)	**257** (182-318)	**324** (257-397)	274
Females	05-06	**103** (88.1-121)	**96.7** (80.0-118)	**176** (134-212)	**357** (230-498)	**498** (298-588)	283
Mexican Americans	05-06	**74.3** (60.7-91.0)	**80.3** (69.5-103)	**123** (101-156)	**182** (122-240)	**209** (144-250)	118
Non-Hispanic blacks	05-06	**99.7** (80.8-123)	**95.9** (78.2-111)	**164** (114-236)	**269** (177-464)	**416** (194-623)	156
Non-Hispanic whites	05-06	**99.0** (88.8-110)	**94.8** (81.5-107)	**159** (138-203)	**298** (245-379)	**397** (318-506)	242

Urinary N-Acetyl-S-(2-carboxyethyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**110** (103-118)	**103** (96.3-107)	**176** (162-190)	**311** (266-359)	**454** (369-538)	2464
Age group							
6-11 years	11-12	**111** (102-120)	**108** (98.5-119)	**176** (163-191)	**248** (226-295)	**338** (253-357)	393
12-19 years	11-12	**79.6** (71.0-89.3)	**75.3** (66.5-83.5)	**116** (95.6-138)	**175** (141-249)	**249** (163-345)	384
20 years and older	11-12	**116** (107-125)	**107** (102-113)	**185** (172-196)	**346** (284-404)	**509** (409-633)	1687
Gender							
Males	11-12	**109** (102-117)	**98.1** (88.7-110)	**172** (153-190)	**309** (262-361)	**434** (359-531)	1250
Females	11-12	**111** (100-123)	**105** (98.3-112)	**180** (166-194)	**320** (253-407)	**493** (353-744)	1214
Race/ethnicity							
Mexican Americans	11-12	**102** (88.4-118)	**96.0** (85.2-109)	**153** (129-184)	**232** (185-330)	**337** (221-512)	313
Non-Hispanic blacks	11-12	**111** (103-118)	**108** (102-114)	**173** (154-187)	**267** (231-297)	**352** (284-428)	662
Non-Hispanic whites	11-12	**114** (104-125)	**105** (95.4-112)	**187** (165-207)	**351** (289-410)	**531** (423-629)	808
All Hispanics	11-12	**99.1** (89.2-110)	**95.0** (85.8-103)	**151** (138-163)	**231** (206-272)	**324** (235-397)	566
Asians	11-12	**97.9** (91.4-105)	**97.6** (88.2-103)	**145** (132-161)	**225** (196-270)	**335** (264-445)	341

Urinary N-Acetyl-S-(3-hydroxypropyl)-L-cysteine (2005 - 2006)

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**320** (293-351)	**323** (291-358)	**686** (615-771)	**1560** (1370-1840)	**2700** (2220-3100)	3349
12-19 years	05-06	**299** (260-344)	**308** (266-378)	**566** (497-658)	**1000** (823-1180)	**1400** (1080-1920)	1035
20 years and older	05-06	**324** (294-357)	**326** (292-363)	**713** (636-814)	**1700** (1470-1940)	**2980** (2560-3150)	2313
Males	05-06	**406** (375-439)	**409** (363-440)	**774** (675-913)	**1860** (1430-2200)	**2990** (2560-3130)	1591
Females	05-06	**255** (228-286)	**249** (225-279)	**583** (510-686)	**1400** (1080-1700)	**2150** (1830-3140)	1756
Mexican Americans	05-06	**312** (282-345)	**324** (288-364)	**628** (580-712)	**1090** (958-1210)	**1490** (1260-1860)	822
Non-Hispanic blacks	05-06	**426** (377-481)	**412** (369-445)	**872** (730-999)	**1780** (1440-2460)	**2810** (2290-3140)	900
Non-Hispanic whites	05-06	**307** (273-346)	**303** (271-342)	**676** (590-802)	**1700** (1400-1990)	**3040** (2450-3510)	1368

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 13.0.

Urinary N-Acetyl-S-(3-hydroxypropyl)-L-cysteine (2011 - 2012)

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**296** (273-321)	**277** (251-306)	**575** (509-652)	**1270** (1110-1490)	**2080** (1790-2630)	2466
Age group							
6-11 years	11-12	**222** (199-248)	**224** (194-270)	**452** (378-518)	**697** (600-808)	**894** (795-1090)	394
12-19 years	11-12	**252** (203-313)	**249** (190-338)	**499** (391-620)	**900** (653-1160)	**1470** (876-1970)	384
20 years and older	11-12	**313** (289-339)	**290** (265-321)	**616** (555-702)	**1430** (1250-1620)	**2440** (2040-2900)	1688
Gender							
Males	11-12	**355** (327-386)	**330** (297-355)	**622** (548-724)	**1300** (1110-1740)	**2170** (1880-3170)	1251
Females	11-12	**248** (220-280)	**217** (195-250)	**524** (450-615)	**1200** (976-1610)	**1940** (1690-2630)	1215
Race/ethnicity							
Mexican Americans	11-12	**290** (243-346)	**294** (241-374)	**549** (458-620)	**952** (742-1110)	**1380** (952-1930)	313
Non-Hispanic blacks	11-12	**372** (326-425)	**353** (315-391)	**727** (592-841)	**1440** (1140-1820)	**2210** (1820-2670)	662
Non-Hispanic whites	11-12	**281** (251-314)	**256** (228-290)	**558** (482-648)	**1300** (1030-1640)	**2300** (1770-2900)	810
All Hispanics	11-12	**280** (245-321)	**280** (225-345)	**523** (469-581)	**969** (768-1140)	**1400** (975-2020)	566
Asians	11-12	**329** (303-357)	**316** (264-394)	**731** (577-852)	**1220** (976-1490)	**1690** (1350-2560)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 13.0.

Urinary N-Acetyl-S-(3-hydroxypropyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**320** (274-374)	**264** (223-311)	**592** (459-770)	**1630** (1170-1960)	**2720** (1960-3570)	557
12-19 years	05-06	**217** (181-260)	**209** (160-261)	**315** (253-441)	**516** (359-751)	**770** (479-2660)	175
20 years and older	05-06	**342** (283-412)	**290** (219-351)	**649** (514-847)	**1740** (1210-2270)	**2950** (1960-4280)	382
Males	05-06	**285** (240-340)	**246** (211-297)	**460** (341-649)	**929** (585-1650)	**1630** (920-2720)	274
Females	05-06	**356** (280-452)	**281** (213-418)	**730** (548-1020)	**2270** (1020-3640)	**3570** (1960-5800)	283
Mexican Americans	05-06	**275** (218-347)	**232** (206-284)	**404** (279-795)	**843** (390-1680)	**1190** (708-1980)	118
Non-Hispanic blacks	05-06	**264** (197-354)	**224** (190-244)	**477** (307-739)	**1150** (585-2390)	**2300** (840-3430)	156
Non-Hispanic whites	05-06	**325** (264-402)	**274** (211-324)	**626** (453-834)	**1760** (1040-2690)	**2950** (1760-4460)	242

Urinary N-Acetyl-S-(3-hydroxypropyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**338** (314-363)	**276** (259-297)	**545** (501-590)	**1220** (1030-1410)	**2190** (1800-2730)	2464
Age group							
6-11 years	11-12	**316** (295-339)	**304** (273-329)	**478** (415-519)	**706** (573-826)	**1020** (737-1240)	393
12-19 years	11-12	**246** (213-284)	**222** (186-273)	**361** (302-452)	**584** (466-816)	**868** (584-1220)	384
20 years and older	11-12	**357** (333-383)	**286** (263-307)	**612** (563-664)	**1450** (1190-1750)	**2690** (2110-3030)	1687
Gender							
Males	11-12	**334** (309-360)	**271** (256-296)	**521** (462-589)	**1090** (884-1370)	**1870** (1490-2600)	1250
Females	11-12	**342** (306-381)	**284** (250-318)	**564** (501-622)	**1380** (1040-1750)	**2440** (1910-2990)	1214
Race/ethnicity							
Mexican Americans	11-12	**327** (277-386)	**294** (255-347)	**482** (421-578)	**816** (651-1000)	**1090** (815-1840)	313
Non-Hispanic blacks	11-12	**290** (264-318)	**241** (219-284)	**434** (395-517)	**923** (772-1130)	**1370** (1110-1790)	662
Non-Hispanic whites	11-12	**343** (312-378)	**272** (253-296)	**551** (492-622)	**1450** (1090-1800)	**2690** (1920-3060)	808
All Hispanics	11-12	**314** (282-349)	**286** (251-313)	**484** (446-533)	**850** (754-967)	**1150** (947-1600)	566
Asians	11-12	**440** (400-484)	**407** (350-463)	**742** (618-840)	**1300** (1000-1550)	**1840** (1370-3240)	341

Urinary N-Acetyl-S-(2-cyanoethyl)-L-cysteine (2005 - 2006)

Metabolite of Acrylonitrile

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**4.03** (3.37-4.83)	**1.92** (1.72-2.09)	**13.1** (6.17-31.1)	**170** (143-200)	**293** (242-349)	3345
12-19 years	05-06	**2.93** (2.35-3.64)	**1.98** (1.68-2.30)	**4.37** (3.26-6.02)	**48.1** (17.7-86.6)	**139** (81.0-183)	1030
20 years and older	05-06	**4.24** (3.48-5.17)	**1.92** (1.67-2.14)	**20.5** (6.97-49.5)	**189** (157-223)	**316** (255-366)	2312
Males	05-06	**5.54** (4.45-6.89)	**2.33** (1.97-2.76)	**44.6** (12.8-71.4)	**196** (160-231)	**319** (259-362)	1587
Females	05-06	**2.98** (2.49-3.56)	**1.53** (1.32-1.78)	**5.15** (3.37-9.01)	**139** (90.9-176)	**268** (192-363)	1754
Mexican Americans	05-06	**2.60** (2.24-3.03)	**1.68** (1.58-1.79)	**3.84** (3.24-4.99)	**45.5** (17.1-85.4)	**126** (70.6-172)	818
Non-Hispanic blacks	05-06	**6.95** (5.55-8.69)	**2.87** (2.45-3.78)	**48.4** (17.4-79.0)	**220** (169-286)	**387** (252-481)	900
Non-Hispanic whites	05-06	**4.04** (3.18-5.13)	**1.78** (1.62-2.01)	**19.2** (5.56-49.8)	**176** (146-223)	**311** (249-355)	1367

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.5.

Urinary N-Acetyl-S-(2-cyanoethyl)-L-cysteine (2011 - 2012)

Metabolite of Acrylonitrile

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**3.40** (2.97-3.90)	**1.71** (1.61-1.86)	**5.42** (4.03-8.55)	**136** (100-172)	**276** (238-323)	2466
Age group							
6-11 years	11-12	**1.47** (1.35-1.60)	**1.38** (1.30-1.58)	**2.44** (2.18-2.90)	**4.27** (3.15-5.40)	**6.71** (4.26-9.62)	394
12-19 years	11-12	**2.65** (2.07-3.39)	**1.68** (1.36-2.13)	**3.79** (2.90-5.85)	**40.6** (9.71-88.9)	**135** (43.9-276)	384
20 years and older	11-12	**3.87** (3.32-4.52)	**1.78** (1.61-1.98)	**10.3** (5.71-19.9)	**164** (131-203)	**310** (239-385)	1688
Gender							
Males	11-12	**4.27** (3.60-5.06)	**2.14** (1.92-2.35)	**9.79** (5.39-17.1)	**166** (117-207)	**294** (217-439)	1251
Females	11-12	**2.73** (2.16-3.46)	**1.42** (1.26-1.61)	**3.72** (2.83-5.55)	**118** (74.4-142)	**260** (142-310)	1215
Race/ethnicity							
Mexican Americans	11-12	**2.51** (1.88-3.36)	**1.61** (1.31-1.87)	**3.50** (2.74-6.61)	**51.6** (12.6-105)	**105** (38.8-174)	313
Non-Hispanic blacks	11-12	**5.02** (3.99-6.32)	**2.63** (2.16-3.11)	**9.18** (5.27-24.4)	**166** (123-228)	**339** (234-429)	662
Non-Hispanic whites	11-12	**3.46** (2.95-4.07)	**1.63** (1.47-1.82)	**6.33** (3.97-12.6)	**146** (117-203)	**280** (228-350)	810
All Hispanics	11-12	**2.57** (2.01-3.28)	**1.57** (1.41-1.79)	**3.49** (2.78-5.42)	**58.5** (17.3-105)	**158** (74.3-253)	566
Asians	11-12	**1.90** (1.65-2.21)	**1.40** (1.24-1.65)	**2.73** (2.18-3.10)	**12.3** (4.53-48.4)	**91.4** (24.4-133)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.

Urinary N-Acetyl-S-(2-cyanoethyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Acrylonitrile

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**4.10** (3.39-4.97)	**1.70** (1.51-1.91)	**6.89** (3.91-25.2)	**196** (156-242)	**323** (225-399)	558
12-19 years	05-06	**2.02** (1.44-2.84)	**1.16** (.952-1.52)	**3.24** (1.55-10.8)	**13.9** (4.35-82.8)	**70.0** (11.4-243)	175
20 years and older	05-06	**4.62** (3.79-5.63)	**1.74** (1.54-2.03)	**13.3** (3.93-63.0)	**225** (182-259)	**332** (206-517)	383
Males	05-06	**3.74** (2.66-5.27)	**1.63** (1.38-2.03)	**6.76** (2.56-40.2)	**134** (53.0-225)	**225** (129-259)	274
Females	05-06	**4.47** (3.24-6.17)	**1.71** (1.54-1.91)	**8.68** (3.22-94.8)	**252** (104-386)	**386** (194-637)	284
Mexican Americans	05-06	**2.41** (1.59-3.66)	**1.53** (1.23-1.76)	**2.94** (1.76-12.0)	**25.8** (2.80-103)	**73.6** (7.14-209)	118
Non-Hispanic blacks	05-06	**5.19** (3.38-7.99)	**2.11** (1.46-3.04)	**53.0** (3.50-124)	**153** (77.8-296)	**296** (128-380)	156
Non-Hispanic whites	05-06	**4.34** (3.16-5.94)	**1.63** (1.42-2.08)	**6.76** (2.79-63.0)	**225** (153-284)	**347** (193-520)	243

Urinary N-Acetyl-S-(2-cyanoethyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Acrylonitrile

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**3.89** (3.44-4.40)	**1.83** (1.73-1.93)	**5.28** (4.08-7.59)	**157** (119-194)	**256** (224-300)	2464
Age group							
6-11 years	11-12	**2.11** (1.91-2.33)	**2.00** (1.81-2.22)	**2.95** (2.53-3.59)	**5.00** (3.92-5.78)	**6.31** (5.74-7.95)	393
12-19 years	11-12	**2.58** (2.10-3.18)	**1.73** (1.51-1.88)	**3.28** (2.35-5.84)	**19.3** (7.61-58.9)	**157** (17.6-228)	384
20 years and older	11-12	**4.43** (3.85-5.09)	**1.82** (1.66-2.00)	**8.86** (5.46-20.6)	**188** (151-224)	**292** (238-339)	1687
Gender							
Males	11-12	**4.02** (3.34-4.83)	**1.76** (1.61-1.93)	**7.71** (4.18-20.2)	**153** (116-220)	**238** (220-278)	1250
Females	11-12	**3.77** (3.01-4.73)	**1.87** (1.71-2.09)	**4.37** (3.22-6.59)	**158** (86.4-228)	**292** (229-315)	1214
Race/ethnicity							
Mexican Americans	11-12	**2.84** (2.20-3.66)	**1.65** (1.49-1.86)	**3.52** (2.40-7.27)	**41.8** (20.0-93.2)	**128** (39.4-345)	313
Non-Hispanic blacks	11-12	**3.91** (3.18-4.81)	**1.92** (1.74-2.10)	**7.14** (3.58-33.5)	**120** (92.2-139)	**199** (145-241)	662
Non-Hispanic whites	11-12	**4.25** (3.67-4.92)	**1.85** (1.74-1.97)	**6.40** (4.02-13.7)	**200** (157-230)	**292** (238-342)	808
All Hispanics	11-12	**2.88** (2.37-3.49)	**1.62** (1.53-1.78)	**3.38** (2.65-4.56)	**54.1** (31.6-91.7)	**146** (67.8-230)	566
Asians	11-12	**2.55** (2.26-2.87)	**1.76** (1.61-2.15)	**3.50** (2.89-4.18)	**13.0** (5.64-37.8)	**68.0** (26.8-98.5)	341

Urinary N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine (2005 - 2006)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	3349
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	1036
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	2313
Gender							
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	1592
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	1757
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	822
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	902
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	1371

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 12.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine (2011 - 2012)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2466
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	394
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1688
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1251
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1215
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	810
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 12.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	559
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	175
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	383
Gender							
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	274
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	285
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	118
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	156
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	243

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2464
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	393
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1687
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1250
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1214
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	808
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine (2005 - 2006)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	3349
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	1036
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	2313
Gender							
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	1592
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	1757
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	822
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	902
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	1371

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 6.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine (2011 - 2012)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2466
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	394
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1688
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1251
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1215
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	810
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 6.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	559
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	175
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	383
Gender							
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	274
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	285
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	118
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	156
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	243

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2464
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	393
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1687
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1250
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1214
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	808
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(dimethylphenyl)-L-cysteine (2005 - 2006)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	3349
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	1036
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	2313
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	1592
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	1757
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	822
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	902
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	1371

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary N-Acetyl-S-(dimethylphenyl)-L-cysteine (2011 - 2012)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2466
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	394
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1688
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1251
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1215
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	810
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary N-Acetyl-S-(dimethylphenyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	559
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	175
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	383
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	274
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	285
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	118
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	156
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	243

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary N-Acetyl-S-(dimethylphenyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2464
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	393
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1687
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1250
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1214
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	808
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine (2005 - 2006)

Metabolite of N,N-Dimethylformamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**121** (111-132)	**123** (110-139)	**268** (235-296)	**534** (494-593)	**787** (689-915)	3344
12-19 years	05-06	**84.8** (74.7-96.3)	**87.5** (75.4-101)	**159** (138-192)	**287** (245-351)	**436** (356-566)	1030
20 years and older	05-06	**128** (116-141)	**133** (116-150)	**291** (258-322)	**573** (514-623)	**839** (746-957)	2310
Males	05-06	**141** (126-156)	**144** (123-164)	**306** (280-341)	**557** (504-611)	**782** (672-895)	1587
Females	05-06	**105** (95.2-116)	**105** (91.6-123)	**228** (204-257)	**514** (436-605)	**805** (630-1090)	1753
Mexican Americans	05-06	**91.9** (84.5-100)	**96.3** (84.4-109)	**182** (157-208)	**337** (272-453)	**515** (435-655)	818
Non-Hispanic blacks	05-06	**124** (110-139)	**116** (105-132)	**260** (207-326)	**559** (398-720)	**776** (662-918)	899
Non-Hispanic whites	05-06	**128** (113-144)	**134** (116-154)	**291** (249-341)	**582** (500-640)	**877** (690-1000)	1365

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 5.5.

Urinary N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine (2011 - 2012)

Metabolite of N,N-Dimethylformamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**123** (114-132)	**121** (110-129)	**257** (224-290)	**496** (428-588)	**755** (626-902)	2466
Age group							
6-11 years	11-12	**52.2** (47.1-57.9)	**56.8** (50.4-62.7)	**98.4** (86.8-106)	**141** (111-170)	**170** (124-193)	394
12-19 years	11-12	**77.7** (65.3-92.3)	**75.0** (62.1-91.8)	**145** (125-162)	**248** (199-367)	**397** (324-506)	384
20 years and older	11-12	**144** (134-156)	**145** (131-160)	**296** (268-324)	**583** (502-625)	**869** (689-1010)	1688
Gender							
Males	11-12	**136** (123-149)	**134** (117-156)	**257** (222-300)	**481** (397-592)	**786** (589-1010)	1251
Females	11-12	**111** (99.8-124)	**106** (95.3-122)	**255** (202-296)	**512** (406-625)	**747** (611-939)	1215
Race/ethnicity							
Mexican Americans	11-12	**86.7** (73.4-102)	**84.3** (69.8-103)	**171** (143-187)	**259** (211-336)	**416** (281-652)	313
Non-Hispanic blacks	11-12	**108** (97.1-120)	**103** (93.6-117)	**204** (173-224)	**419** (321-509)	**620** (520-705)	662
Non-Hispanic whites	11-12	**139** (127-153)	**140** (124-160)	**296** (268-323)	**560** (468-625)	**864** (637-1010)	810
All Hispanics	11-12	**94.4** (77.6-115)	**96.1** (77.7-114)	**185** (141-230)	**331** (254-402)	**475** (374-646)	566
Asians	11-12	**70.7** (61.3-81.6)	**68.4** (58.5-81.3)	**143** (116-178)	**266** (209-356)	**465** (327-554)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 5.5.

Urinary N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of N,N-Dimethylformamide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**130** (116-144)	**129** (108-142)	**248** (194-311)	**509** (399-624)	**853** (600-1010)	557
12-19 years	05-06	**61.9** (53.7-71.4)	**57.9** (54.4-76.8)	**98.8** (88.4-106)	**190** (106-280)	**280** (145-745)	175
20 years and older	05-06	**147** (129-167)	**144** (128-160)	**286** (231-325)	**580** (452-763)	**942** (618-1170)	382
Males	05-06	**111** (92.8-133)	**108** (93.9-144)	**190** (164-251)	**340** (255-458)	**509** (340-717)	274
Females	05-06	**149** (126-177)	**137** (121-156)	**306** (249-392)	**769** (504-1020)	**1070** (834-1280)	283
Mexican Americans	05-06	**76.4** (62.4-93.4)	**74.7** (65.2-84.2)	**122** (94.9-155)	**232** (137-454)	**423** (154-705)	118
Non-Hispanic blacks	05-06	**85.5** (66.0-111)	**77.9** (59.3-96.7)	**157** (96.7-246)	**344** (180-600)	**509** (253-643)	156
Non-Hispanic whites	05-06	**148** (128-171)	**152** (129-177)	**294** (218-340)	**595** (392-853)	**942** (595-1260)	242

Urinary N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of N,N-Dimethylformamide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**140** (131-150)	**129** (120-138)	**248** (231-280)	**482** (404-578)	**757** (615-860)	2464
Age group							
6-11 years	11-12	**74.9** (71.1-78.9)	**72.8** (69.6-76.6)	**97.5** (88.5-110)	**135** (116-147)	**152** (126-196)	393
12-19 years	11-12	**75.6** (66.7-85.8)	**68.6** (56.9-89.7)	**107** (95.5-126)	**169** (149-192)	**234** (175-324)	384
20 years and older	11-12	**165** (153-177)	**156** (145-169)	**299** (275-324)	**578** (469-664)	**795** (697-891)	1687
Gender							
Males	11-12	**127** (116-140)	**121** (107-135)	**218** (183-260)	**408** (337-527)	**632** (489-746)	1250
Females	11-12	**154** (140-168)	**138** (128-153)	**285** (241-322)	**610** (435-713)	**821** (757-885)	1214
Race/ethnicity							
Mexican Americans	11-12	**97.9** (82.8-116)	**87.4** (79.8-96.2)	**150** (121-182)	**255** (189-340)	**394** (250-962)	313
Non-Hispanic blacks	11-12	**84.0** (77.2-91.4)	**76.6** (68.2-84.9)	**137** (117-156)	**258** (229-293)	**390** (313-469)	662
Non-Hispanic whites	11-12	**170** (159-183)	**158** (141-175)	**315** (275-335)	**615** (476-745)	**821** (755-891)	808
All Hispanics	11-12	**106** (92.7-120)	**96.0** (87.5-107)	**163** (141-200)	**299** (240-382)	**443** (368-496)	566
Asians	11-12	**94.6** (86.3-104)	**94.6** (81.5-108)	**154** (132-175)	**249** (213-302)	**353** (260-474)	341

Urinary N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine (2005 - 2006)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**254** (231-279)	**292** (271-313)	**480** (440-514)	**708** (649-780)	**886** (797-1000)	3345
12-19 years	05-06	**318** (283-357)	**348** (307-383)	**536** (484-589)	**775** (724-830)	**956** (839-1110)	1034
20 years and older	05-06	**245** (222-271)	**284** (259-308)	**465** (427-508)	**693** (634-774)	**880** (774-1020)	2310
Males	05-06	**299** (270-330)	**341** (310-367)	**525** (477-591)	**780** (693-855)	**974** (826-1090)	1591
Females	05-06	**218** (197-240)	**245** (224-271)	**419** (395-445)	**635** (581-679)	**813** (692-936)	1754
Mexican Americans	05-06	**268** (241-297)	**300** (275-329)	**454** (407-518)	**659** (569-731)	**783** (710-858)	820
Non-Hispanic blacks	05-06	**315** (278-357)	**354** (318-378)	**525** (486-564)	**760** (673-855)	**965** (784-1200)	899
Non-Hispanic whites	05-06	**246** (219-276)	**283** (258-311)	**480** (435-520)	**708** (635-799)	**885** (774-1040)	1368

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 5.0.

Urinary N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine (2011 - 2012)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**252** (235-271)	**271** (254-296)	**454** (421-482)	**650** (608-711)	**848** (751-939)	2466
Age group							
6-11 years	11-12	**255** (227-286)	**273** (239-334)	**450** (401-494)	**731** (533-884)	**903** (583-1430)	394
12-19 years	11-12	**256** (220-298)	**273** (224-340)	**506** (414-529)	**651** (606-687)	**729** (651-882)	384
20 years and older	11-12	**252** (232-273)	**271** (247-299)	**450** (412-481)	**647** (597-742)	**848** (751-944)	1688
Gender							
Males	11-12	**299** (273-326)	**328** (288-368)	**487** (458-528)	**697** (623-809)	**927** (770-1180)	1251
Females	11-12	**214** (196-234)	**224** (207-249)	**407** (370-426)	**604** (554-636)	**776** (639-879)	1215
Race/ethnicity							
Mexican Americans	11-12	**248** (213-290)	**275** (220-334)	**442** (387-472)	**571** (502-694)	**730** (592-881)	313
Non-Hispanic blacks	11-12	**316** (291-343)	**356** (308-385)	**517** (479-563)	**751** (666-820)	**916** (843-1030)	662
Non-Hispanic whites	11-12	**249** (229-270)	**265** (231-292)	**454** (409-502)	**665** (607-745)	**876** (721-1000)	810
All Hispanics	11-12	**244** (212-280)	**267** (229-317)	**437** (384-476)	**562** (503-648)	**715** (597-813)	566
Asians	11-12	**186** (164-210)	**212** (186-238)	**328** (288-393)	**481** (425-547)	**602** (518-726)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 5.0.

Urinary N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**250** (224-278)	**260** (246-284)	**346** (319-381)	**463** (400-536)	**554** (520-609)	557
12-19 years	05-06	**250** (220-284)	**237** (221-292)	**323** (276-384)	**394** (373-508)	**508** (377-569)	175
20 years and older	05-06	**250** (222-282)	**261** (247-288)	**346** (316-389)	**467** (400-536)	**554** (520-613)	382
Males	05-06	**246** (217-280)	**258** (227-293)	**340** (304-377)	**436** (384-522)	**536** (424-648)	274
Females	05-06	**253** (224-286)	**263** (253-288)	**359** (318-397)	**483** (405-545)	**564** (469-616)	283
Mexican Americans	05-06	**249** (218-284)	**250** (225-268)	**329** (262-370)	**404** (362-497)	**464** (370-898)	118
Non-Hispanic blacks	05-06	**203** (159-258)	**212** (178-243)	**299** (253-349)	**381** (313-521)	**476** (358-634)	156
Non-Hispanic whites	05-06	**257** (228-290)	**274** (248-300)	**360** (322-400)	**485** (405-554)	**564** (508-648)	242

Urinary N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**288** (275-302)	**283** (271-297)	**374** (360-389)	**488** (460-518)	**583** (549-623)	2464
Age group							
6-11 years	11-12	**366** (341-393)	**366** (334-386)	**459** (431-507)	**622** (561-648)	**728** (631-746)	393
12-19 years	11-12	**249** (232-268)	**249** (235-259)	**304** (274-341)	**389** (341-410)	**418** (394-462)	384
20 years and older	11-12	**287** (273-302)	**281** (270-298)	**370** (357-389)	**484** (457-518)	**563** (539-623)	1687
Gender							
Males	11-12	**281** (266-295)	**275** (261-284)	**369** (350-389)	**476** (449-515)	**558** (509-651)	1250
Females	11-12	**296** (279-314)	**292** (275-309)	**378** (355-402)	**505** (473-530)	**588** (549-623)	1214
Race/ethnicity							
Mexican Americans	11-12	**280** (236-333)	**280** (242-327)	**364** (327-400)	**473** (400-555)	**555** (474-625)	313
Non-Hispanic blacks	11-12	**246** (231-263)	**236** (225-252)	**316** (291-338)	**423** (376-461)	**501** (454-551)	662
Non-Hispanic whites	11-12	**305** (289-321)	**300** (284-312)	**395** (378-415)	**514** (473-554)	**623** (549-655)	808
All Hispanics	11-12	**273** (244-304)	**270** (244-297)	**353** (329-381)	**455** (415-484)	**522** (461-585)	566
Asians	11-12	**249** (234-265)	**243** (225-262)	**318** (298-342)	**399** (366-445)	**505** (410-563)	341

Urinary N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine (2005 - 2006)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**< LOD**	**1.60** (1.10-2.24)	**3.21** (2.73-3.85)	3349
12-19 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**1.22** (<LOD-1.91)	1035
20 years and older	05-06	*	**< LOD**	**< LOD**	**1.78** (1.33-2.39)	**3.56** (2.97-4.10)	2313
Males	05-06	*	**< LOD**	**< LOD**	**1.80** (1.49-2.44)	**3.37** (2.64-4.06)	1592
Females	05-06	*	**< LOD**	**< LOD**	**1.18** (<LOD-1.86)	**3.14** (2.52-3.65)	1756
Mexican Americans	05-06	*	**< LOD**	**< LOD**	**< LOD**	**1.06** (<LOD-2.05)	821
Non-Hispanic blacks	05-06	*	**< LOD**	**< LOD**	**1.34** (.851-1.75)	**2.90** (1.74-4.42)	902
Non-Hispanic whites	05-06	*	**< LOD**	**< LOD**	**1.86** (1.33-2.70)	**3.67** (2.99-4.24)	1370

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine (2011 - 2012)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**.985** (<LOD-1.33)	**2.53** (2.03-3.34)	2466
Age group							
6-11 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	394
12-19 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**1.51** (.882-2.12)	384
20 years and older	11-12	*	**< LOD**	**< LOD**	**1.21** (.931-1.88)	**3.23** (2.20-4.26)	1688
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**.931** (<LOD-1.25)	**2.21** (1.33-3.23)	1251
Females	11-12	*	**< LOD**	**< LOD**	**1.07** (<LOD-1.76)	**2.90** (2.20-3.79)	1215
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**< LOD**	**.785** (<LOD-1.24)	**1.25** (.785-3.39)	313
Non-Hispanic blacks	11-12	*	**< LOD**	**< LOD**	**.855** (<LOD-1.23)	**2.71** (1.32-4.34)	662
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**1.16** (.714-1.76)	**2.90** (2.11-4.26)	810
All Hispanics	11-12	*	**< LOD**	**< LOD**	**.711** (<LOD-1.23)	**1.45** (.914-2.97)	566
Asians	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**< LOD**	**2.48** (2.04-2.91)	**3.81** (2.75-4.64)	559
12-19 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**1.41** (<LOD-3.61)	175
20 years and older	05-06	*	**< LOD**	**< LOD**	**2.75** (2.20-3.17)	**4.13** (2.91-5.50)	383
Males	05-06	*	**< LOD**	**< LOD**	**1.69** (1.10-2.06)	**2.40** (1.69-4.13)	274
Females	05-06	*	**< LOD**	**< LOD**	**2.91** (<LOD-3.81)	**4.31** (2.91-5.50)	285
Mexican Americans	05-06	*	**< LOD**	**< LOD**	**< LOD**	**1.24** (<LOD-3.52)	118
Non-Hispanic blacks	05-06	*	**< LOD**	**< LOD**	**1.46** (.627-3.39)	**2.54** (.934-4.64)	156
Non-Hispanic whites	05-06	*	**< LOD**	**< LOD**	**2.77** (2.20-3.71)	**4.31** (2.91-5.78)	243

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**2.15** (<LOD-2.65)	**3.70** (2.75-5.20)	2464
Age group							
6-11 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	393
12-19 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**2.61** (1.65-3.09)	384
20 years and older	11-12	*	**< LOD**	**< LOD**	**2.32** (1.98-2.86)	**4.27** (2.91-5.68)	1687
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**1.71** (<LOD-2.06)	**2.91** (2.12-3.51)	1250
Females	11-12	*	**< LOD**	**< LOD**	**2.65** (<LOD-3.30)	**4.67** (3.06-6.21)	1214
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**< LOD**	**1.71** (<LOD-2.32)	**2.32** (1.71-4.76)	313
Non-Hispanic blacks	11-12	*	**< LOD**	**< LOD**	**1.44** (<LOD-1.57)	**2.06** (1.65-2.70)	662
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**2.48** (1.98-2.91)	**4.48** (2.91-5.67)	808
All Hispanics	11-12	*	**< LOD**	**< LOD**	**1.98** (<LOD-2.32)	**2.61** (2.15-3.30)	566
Asians	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine (2005 - 2006)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**5.77** (5.17-6.45)	**5.38** (4.89-6.07)	**13.0** (10.7-14.6)	**35.5** (29.3-42.4)	**60.0** (51.4-67.0)	3347
12-19 years	05-06	**5.71** (4.75-6.87)	**5.88** (4.68-7.30)	**10.4** (9.51-12.1)	**19.6** (16.7-23.2)	**35.1** (22.7-50.3)	1029
20 years and older	05-06	**5.78** (5.15-6.50)	**5.27** (4.82-5.93)	**13.5** (10.6-16.4)	**38.3** (31.1-46.5)	**62.1** (53.9-69.1)	2312
Males	05-06	**7.12** (6.40-7.92)	**6.73** (5.92-7.54)	**14.4** (12.2-17.8)	**40.4** (31.1-51.4)	**61.2** (53.1-68.3)	1587
Females	05-06	**4.73** (4.14-5.39)	**4.35** (3.94-4.86)	**10.4** (8.19-13.1)	**30.2** (23.2-37.9)	**57.4** (42.1-72.4)	1750
Mexican Americans	05-06	**5.39** (4.92-5.91)	**5.20** (4.63-5.82)	**10.2** (8.94-11.7)	**18.9** (16.7-22.6)	**29.1** (22.6-35.1)	820
Non-Hispanic blacks	05-06	**7.70** (6.73-8.82)	**6.45** (5.69-7.61)	**15.4** (12.9-19.9)	**45.8** (31.1-57.3)	**65.7** (51.8-76.8)	899
Non-Hispanic whites	05-06	**5.66** (4.89-6.55)	**5.27** (4.56-6.33)	**13.5** (10.2-16.7)	**38.0** (29.0-48.8)	**62.1** (51.7-69.2)	1369

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.6.

Urinary N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine (2011 - 2012)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**10.3** (9.31-11.5)	**9.74** (8.96-10.7)	**20.2** (17.7-23.5)	**56.3** (48.6-68.2)	**119** (90.2-142)	2466
Age group							
6-11 years	11-12	**8.29** (7.47-9.19)	**8.73** (7.22-10.1)	**16.8** (13.8-19.7)	**28.7** (21.2-37.8)	**37.8** (28.2-45.1)	394
12-19 years	11-12	**8.05** (6.29-10.3)	**9.52** (6.38-12.4)	**17.3** (14.6-19.4)	**30.9** (21.5-51.0)	**51.0** (27.3-105)	384
20 years and older	11-12	**11.0** (9.86-12.2)	**10.0** (9.01-11.1)	**21.9** (18.6-26.0)	**69.2** (56.2-86.2)	**128** (115-152)	1688
Gender							
Males	11-12	**12.4** (11.4-13.5)	**11.5** (10.7-12.8)	**21.5** (19.0-25.9)	**57.0** (46.6-75.1)	**120** (78.0-157)	1251
Females	11-12	**8.66** (7.27-10.3)	**7.70** (6.64-9.01)	**18.1** (15.4-22.6)	**56.2** (40.3-81.2)	**118** (82.7-146)	1215
Race/ethnicity							
Mexican Americans	11-12	**9.25** (7.14-12.0)	**9.85** (7.95-12.0)	**19.3** (16.2-25.7)	**40.2** (32.7-47.7)	**48.9** (36.2-126)	313
Non-Hispanic blacks	11-12	**13.4** (12.0-15.0)	**12.9** (11.7-14.1)	**26.0** (23.6-29.1)	**63.6** (46.9-76.3)	**121** (82.1-153)	662
Non-Hispanic whites	11-12	**10.2** (8.84-11.8)	**9.23** (8.04-10.8)	**20.1** (16.3-24.5)	**63.0** (50.8-86.2)	**121** (90.9-144)	810
All Hispanics	11-12	**9.22** (7.64-11.1)	**9.36** (8.12-10.7)	**18.6** (16.6-21.9)	**40.5** (32.7-48.3)	**60.4** (45.9-94.8)	566
Asians	11-12	**7.81** (6.82-8.94)	**8.43** (7.18-9.42)	**15.4** (13.3-18.0)	**26.3** (22.2-38.8)	**59.9** (31.3-104)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.

Urinary N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**5.76** (5.14-6.47)	**4.26** (3.94-4.88)	**10.5** (7.13-14.3)	**38.8** (25.0-49.2)	**58.7** (49.2-77.4)	557
12-19 years	05-06	**4.14** (3.29-5.22)	**3.49** (2.77-4.46)	**6.29** (4.26-10.1)	**13.4** (6.92-20.7)	**20.7** (9.81-79.6)	175
20 years and older	05-06	**6.09** (5.33-6.96)	**4.42** (3.90-5.46)	**11.0** (7.71-15.8)	**45.7** (31.5-53.5)	**60.5** (50.3-77.4)	382
Males	05-06	**5.04** (4.21-6.04)	**4.15** (3.66-4.82)	**8.29** (5.78-10.7)	**18.8** (11.0-28.3)	**37.8** (22.4-50.3)	274
Females	05-06	**6.52** (5.40-7.88)	**4.61** (3.80-5.72)	**13.9** (8.34-22.2)	**53.8** (34.9-77.4)	**84.4** (53.1-112)	283
Mexican Americans	05-06	**4.65** (3.85-5.60)	**3.97** (3.19-6.06)	**7.47** (5.34-9.45)	**11.5** (8.59-16.6)	**16.6** (8.59-46.7)	118
Non-Hispanic blacks	05-06	**4.86** (3.47-6.80)	**3.39** (2.90-5.20)	**11.0** (5.90-15.6)	**25.0** (14.0-51.6)	**50.4** (21.3-67.9)	156
Non-Hispanic whites	05-06	**6.03** (4.99-7.28)	**4.46** (3.74-5.54)	**10.7** (6.57-21.6)	**40.0** (23.4-57.5)	**61.2** (45.7-95.6)	242

Urinary N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**11.8** (10.7-13.0)	**9.76** (8.88-10.8)	**18.2** (16.2-20.7)	**60.4** (50.5-73.2)	**108** (77.1-151)	2464
Age group							
6-11 years	11-12	**11.8** (10.9-12.9)	**11.7** (10.8-12.6)	**16.6** (14.9-19.7)	**26.3** (21.2-32.3)	**34.0** (27.0-48.5)	393
12-19 years	11-12	**7.84** (6.60-9.31)	**7.83** (6.69-9.04)	**11.8** (10.7-14.3)	**21.9** (15.4-34.5)	**38.4** (23.0-64.3)	384
20 years and older	11-12	**12.5** (11.4-13.8)	**9.81** (8.78-11.1)	**20.2** (18.1-22.9)	**74.9** (60.4-86.0)	**130** (88.8-174)	1687
Gender							
Males	11-12	**11.6** (10.8-12.6)	**9.81** (8.82-10.9)	**18.3** (16.0-21.2)	**55.2** (39.6-75.1)	**84.7** (77.1-108)	1250
Females	11-12	**11.9** (10.2-14.0)	**9.73** (8.41-11.2)	**17.9** (14.3-24.1)	**63.4** (40.0-102)	**135** (92.4-171)	1214
Race/ethnicity							
Mexican Americans	11-12	**10.4** (7.98-13.7)	**9.90** (8.41-11.5)	**18.0** (15.0-20.4)	**34.1** (24.1-55.1)	**59.0** (32.9-115)	313
Non-Hispanic blacks	11-12	**10.5** (9.64-11.4)	**9.14** (8.01-10.0)	**18.0** (15.8-21.1)	**42.6** (34.5-46.9)	**70.8** (52.3-81.0)	662
Non-Hispanic whites	11-12	**12.5** (11.1-14.1)	**9.89** (8.78-11.2)	**18.7** (15.8-22.6)	**75.6** (54.9-94.4)	**136** (81.9-179)	808
All Hispanics	11-12	**10.3** (8.79-12.1)	**9.47** (8.53-10.6)	**16.0** (14.8-18.5)	**34.4** (24.6-50.3)	**63.7** (39.6-93.7)	566
Asians	11-12	**10.5** (9.66-11.3)	**9.40** (8.97-10.4)	**16.0** (13.6-17.0)	**34.8** (22.5-43.8)	**53.3** (40.8-84.8)	341

Urinary N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine (2005 - 2006)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	3349
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	1036
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	2313
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	1592
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	1757
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	822
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	902
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	1371

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine (2011 - 2012)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2466
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	394
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1688
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1251
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1215
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	810
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	559
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	175
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	383
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	274
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	285
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	118
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	156
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	243

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2464
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	393
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1687
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1250
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1214
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	808
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxyethyl)-L-cysteine (2005 - 2006)

Metabolite of Acrylonitrile, Ethylene oxide, and Vinyl chloride

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**.727** (<LOD-1.21)	**2.47** (2.13-2.94)	**4.43** (3.85-4.99)	3345
12-19 years	05-06	*	**< LOD**	**1.02** (<LOD-1.68)	**2.59** (2.28-3.05)	**3.81** (3.01-4.45)	1035
20 years and older	05-06	*	**< LOD**	**.673** (<LOD-1.15)	**2.42** (1.97-3.07)	**4.64** (4.05-5.36)	2310
Males	05-06	*	**< LOD**	**.606** (<LOD-1.27)	**2.34** (1.74-2.93)	**3.84** (3.05-4.86)	1588
Females	05-06	*	**< LOD**	**.830** (<LOD-1.24)	**2.67** (2.19-3.42)	**4.95** (3.91-5.89)	1756
Mexican Americans	05-06	*	**< LOD**	**.922** (<LOD-1.44)	**2.46** (1.94-2.90)	**3.46** (2.90-4.23)	821
Non-Hispanic blacks	05-06	*	**< LOD**	**1.02** (<LOD-2.24)	**3.34** (2.25-4.49)	**4.93** (3.49-8.56)	901
Non-Hispanic whites	05-06	*	**< LOD**	**.618** (<LOD-1.30)	**2.42** (1.92-3.06)	**4.63** (3.80-5.36)	1369

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxyethyl)-L-cysteine (2011 - 2012)

Metabolite of Acrylonitrile, Ethylene oxide, and Vinyl chloride

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**.697** (.618-.792)	**1.33** (1.21-1.46)	**2.77** (2.39-3.47)	**4.61** (3.96-5.26)	2466
Age group							
6-11 years	11-12	**.904** (.800-1.02)	**.888** (.740-.961)	**1.42** (1.22-1.75)	**2.42** (2.05-2.96)	**3.44** (2.59-3.82)	394
12-19 years	11-12	**.963** (.841-1.10)	**.898** (.697-1.00)	**1.57** (1.26-1.95)	**2.82** (2.17-4.01)	**4.53** (3.66-5.54)	384
20 years and older	11-12	*	**.678** (<LOD-.766)	**1.28** (1.09-1.47)	**2.81** (2.32-3.57)	**4.86** (4.01-5.73)	1688
Gender							
Males	11-12	*	**.694** (<LOD-.829)	**1.29** (1.12-1.47)	**2.51** (2.00-3.04)	**3.96** (3.16-5.04)	1251
Females	11-12	*	**.714** (<LOD-.852)	**1.38** (1.19-1.63)	**3.38** (2.59-3.84)	**5.08** (3.84-6.49)	1215
Race/ethnicity							
Mexican Americans	11-12	**.907** (.792-1.04)	**.788** (.693-.910)	**1.40** (1.12-1.68)	**2.94** (2.14-3.66)	**3.91** (3.57-4.82)	313
Non-Hispanic blacks	11-12	**1.08** (.965-1.21)	**.976** (.835-1.14)	**1.81** (1.51-2.16)	**3.57** (2.71-5.26)	**6.40** (4.81-7.41)	662
Non-Hispanic whites	11-12	*	**.669** (<LOD-.766)	**1.24** (1.08-1.41)	**2.72** (2.17-3.47)	**4.55** (3.75-5.54)	810
All Hispanics	11-12	*	**.730** (.647-.817)	**1.32** (1.10-1.59)	**2.61** (2.16-3.45)	**3.91** (2.94-5.25)	566
Asians	11-12	*	**< LOD**	**.977** (.858-1.06)	**1.75** (1.22-2.05)	**2.51** (1.90-3.58)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxyethyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Acrylonitrile, Ethylene oxide, and Vinyl chloride

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**1.40** (<LOD-1.51)	**2.52** (1.98-3.86)	**4.71** (2.49-9.59)	559
12-19 years	05-06	*	**< LOD**	**1.01** (<LOD-1.39)	**1.88** (1.24-2.65)	**3.17** (1.82-3.45)	175
20 years and older	05-06	*	**< LOD**	**1.42** (<LOD-1.74)	**3.08** (2.12-4.34)	**5.45** (2.49-10.7)	383
Males	05-06	*	**< LOD**	**.848** (<LOD-1.13)	**1.77** (1.29-2.23)	**2.32** (1.74-3.43)	274
Females	05-06	*	**< LOD**	**1.81** (<LOD-2.12)	**4.26** (2.42-8.00)	**8.00** (3.27-11.6)	285
Mexican Americans	05-06	*	**< LOD**	**.957** (<LOD-1.25)	**1.57** (1.13-2.96)	**2.02** (1.25-6.00)	118
Non-Hispanic blacks	05-06	*	**< LOD**	**.831** (<LOD-1.81)	**2.00** (.858-4.22)	**3.33** (1.36-11.3)	156
Non-Hispanic whites	05-06	*	**< LOD**	**1.42** (<LOD-1.80)	**3.26** (2.23-4.34)	**5.45** (2.49-10.7)	243

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxyethyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Acrylonitrile, Ethylene oxide, and Vinyl chloride

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**.941** (.883-1.01)	**1.70** (1.57-1.82)	**3.11** (2.81-3.43)	**4.75** (3.86-5.69)	2464
Age group							
6-11 years	11-12	**1.28** (1.13-1.44)	**1.29** (1.11-1.43)	**2.00** (1.70-2.36)	**2.95** (2.46-3.48)	**3.86** (2.83-5.26)	393
12-19 years	11-12	**.938** (.853-1.03)	**.883** (.753-.959)	**1.52** (1.22-1.87)	**2.69** (2.10-4.11)	**4.71** (2.92-6.06)	384
20 years and older	11-12	*	**.912** (<LOD-1.00)	**1.63** (1.51-1.83)	**3.23** (2.85-3.57)	**5.15** (3.94-5.74)	1687
Gender							
Males	11-12	*	**.744** (<LOD-.846)	**1.33** (1.17-1.54)	**2.49** (2.29-2.65)	**3.66** (3.03-4.41)	1250
Females	11-12	*	**1.12** (<LOD-1.21)	**1.96** (1.74-2.23)	**3.80** (2.93-5.26)	**5.50** (3.95-8.67)	1214
Race/ethnicity							
Mexican Americans	11-12	**1.02** (.885-1.19)	**.964** (.865-1.11)	**1.71** (1.43-1.96)	**3.02** (2.23-4.21)	**4.51** (3.14-5.45)	313
Non-Hispanic blacks	11-12	**.841** (.774-.913)	**.749** (.674-.861)	**1.50** (1.28-1.65)	**2.83** (2.43-3.24)	**4.00** (3.35-4.43)	662
Non-Hispanic whites	11-12	*	**.986** (<LOD-1.06)	**1.70** (1.57-1.91)	**3.25** (2.65-3.86)	**5.15** (3.41-6.58)	808
All Hispanics	11-12	*	**.918** (.831-1.05)	**1.60** (1.38-1.83)	**2.76** (2.22-3.41)	**4.35** (3.11-5.19)	566
Asians	11-12	*	**< LOD**	**1.46** (1.28-1.88)	**2.49** (1.93-3.26)	**3.59** (2.50-6.06)	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxypropyl)-L-cysteine (2005 - 2006)

Metabolite of Propylene oxide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**51.4** (48.3-54.7)	**56.3** (52.7-60.3)	**110** (103-119)	**224** (191-266)	**351** (308-414)	3347
12-19 years	05-06	**55.9** (50.5-61.9)	**59.4** (53.8-67.0)	**107** (93.2-118)	**183** (141-246)	**269** (183-526)	1032
20 years and older	05-06	**50.7** (47.3-54.3)	**56.0** (52.0-59.9)	**112** (102-121)	**230** (197-276)	**360** (323-414)	2312
Males	05-06	**61.8** (57.3-66.7)	**65.1** (57.3-72.1)	**120** (110-136)	**250** (202-308)	**382** (308-519)	1590
Females	05-06	**43.1** (38.7-48.0)	**48.5** (44.8-54.0)	**97.0** (88.5-108)	**201** (178-242)	**331** (279-380)	1753
Mexican Americans	05-06	**49.8** (42.5-58.3)	**57.2** (51.3-65.7)	**106** (90.3-121)	**204** (167-232)	**298** (226-391)	819
Non-Hispanic blacks	05-06	**67.6** (61.3-74.6)	**71.7** (65.3-77.8)	**129** (108-159)	**241** (202-296)	**330** (296-434)	898
Non-Hispanic whites	05-06	**50.0** (45.1-55.5)	**54.2** (49.2-59.0)	**110** (98.9-121)	**225** (180-279)	**372** (308-444)	1369

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 1.3.

Urinary N-Acetyl-S-(2-hydroxypropyl)-L-cysteine (2011 - 2012)

Metabolite of Propylene oxide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**58.4** (53.4-63.9)	**56.0** (50.5-59.7)	**110** (102-118)	**226** (200-259)	**456** (330-572)	2466
Age group							
6-11 years	11-12	**45.2** (39.8-51.4)	**44.3** (38.7-54.1)	**74.7** (67.2-95.1)	**142** (116-174)	**235** (161-292)	394
12-19 years	11-12	**47.1** (38.4-57.7)	**47.5** (39.0-58.2)	**86.8** (72.4-107)	**149** (107-192)	**205** (150-371)	384
20 years and older	11-12	**62.1** (56.1-68.6)	**58.7** (53.7-61.8)	**120** (109-130)	**259** (220-305)	**523** (364-699)	1688
Gender							
Males	11-12	**63.3** (56.7-70.6)	**59.7** (54.3-65.6)	**112** (95.2-129)	**195** (175-256)	**370** (259-494)	1251
Females	11-12	**54.1** (46.7-62.6)	**48.9** (42.5-58.2)	**108** (91.2-124)	**250** (221-297)	**536** (305-808)	1215
Race/ethnicity							
Mexican Americans	11-12	**60.1** (50.6-71.4)	**58.2** (46.6-67.7)	**98.0** (82.7-113)	**184** (148-325)	**375** (202-911)	313
Non-Hispanic blacks	11-12	**68.0** (60.3-76.7)	**65.0** (60.1-72.6)	**117** (106-130)	**220** (188-260)	**333** (270-386)	662
Non-Hispanic whites	11-12	**58.4** (52.1-65.5)	**54.3** (46.6-59.9)	**113** (100-125)	**238** (196-292)	**523** (325-716)	810
All Hispanics	11-12	**55.7** (48.0-64.7)	**52.8** (45.2-61.4)	**95.4** (77.8-121)	**184** (151-268)	**350** (253-429)	566
Asians	11-12	**45.0** (38.0-53.4)	**44.6** (39.8-53.1)	**88.5** (74.2-109)	**181** (144-214)	**370** (201-585)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.3.

Urinary N-Acetyl-S-(2-hydroxypropyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Propylene oxide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**49.2** (42.3-57.3)	**50.8** (45.1-58.6)	**91.7** (81.0-121)	**200** (151-255)	**284** (211-392)	557
12-19 years	05-06	**41.7** (34.5-50.5)	**40.7** (37.2-50.5)	**64.2** (52.8-76.9)	**103** (68.6-237)	**197** (73.0-322)	175
20 years and older	05-06	**50.6** (42.7-60.0)	**52.7** (45.9-62.3)	**100** (83.0-138)	**220** (151-283)	**287** (200-466)	382
Males	05-06	**43.6** (36.2-52.6)	**45.5** (37.4-53.1)	**81.0** (62.9-103)	**139** (89.9-225)	**225** (120-284)	274
Females	05-06	**55.0** (41.3-73.4)	**56.8** (45.0-73.7)	**132** (85.1-169)	**255** (151-339)	**354** (220-704)	283
Mexican Americans	05-06	**42.4** (30.6-58.6)	**45.5** (36.7-54.0)	**73.3** (50.1-123)	**139** (97.8-157)	**143** (134-183)	118
Non-Hispanic blacks	05-06	**39.1** (30.3-50.3)	**41.5** (36.5-45.1)	**64.5** (48.9-82.0)	**103** (69.0-255)	**190** (79.8-362)	156
Non-Hispanic whites	05-06	**51.1** (41.1-63.6)	**54.5** (43.5-65.3)	**103** (83.2-141)	**238** (169-284)	**332** (225-466)	242

Urinary N-Acetyl-S-(2-hydroxypropyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Propylene oxide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**66.6** (60.7-73.1)	**56.4** (53.0-59.0)	**101** (93.6-113)	**221** (192-262)	**403** (346-574)	2464
Age group							
6-11 years	11-12	**64.4** (58.0-71.4)	**59.1** (53.5-61.9)	**92.4** (82.1-102)	**161** (116-216)	**233** (161-344)	393
12-19 years	11-12	**45.8** (41.3-50.9)	**41.5** (38.0-44.2)	**61.5** (56.8-76.4)	**98.2** (79.7-139)	**156** (115-215)	384
20 years and older	11-12	**70.8** (63.9-78.4)	**58.3** (54.5-62.8)	**112** (97.9-129)	**258** (221-304)	**493** (363-782)	1687
Gender							
Males	11-12	**59.4** (54.4-64.8)	**53.1** (49.7-56.9)	**86.7** (79.7-97.9)	**161** (133-207)	**262** (216-368)	1250
Females	11-12	**74.5** (63.0-88.1)	**59.8** (52.7-66.1)	**125** (99.0-146)	**300** (223-381)	**594** (346-1610)	1214
Race/ethnicity							
Mexican Americans	11-12	**67.9** (59.4-77.5)	**55.1** (51.9-62.8)	**95.9** (81.5-116)	**207** (148-256)	**350** (185-1660)	313
Non-Hispanic blacks	11-12	**53.0** (47.3-59.5)	**48.2** (42.8-55.0)	**81.3** (73.9-89.5)	**149** (122-171)	**223** (171-304)	662
Non-Hispanic whites	11-12	**71.3** (64.1-79.4)	**58.3** (53.5-62.1)	**111** (96.8-129)	**262** (203-327)	**488** (347-782)	808
All Hispanics	11-12	**62.3** (56.3-69.0)	**53.0** (50.7-57.1)	**86.9** (78.2-102)	**176** (136-233)	**295** (193-532)	566
Asians	11-12	**60.2** (49.5-73.3)	**55.3** (43.7-66.4)	**106** (82.5-130)	**216** (155-382)	**457** (245-681)	341

Urinary N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine (2005 - 2006)

Metabolite of Crotonaldehyde

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**425** (386-467)	**406** (376-433)	**800** (707-967)	**2210** (1760-2530)	**3560** (3230-3760)	3347
12-19 years	05-06	**381** (336-433)	**394** (349-434)	**637** (581-688)	**1020** (795-1200)	**1650** (1110-2460)	1032
20 years and older	05-06	**432** (389-480)	**410** (368-444)	**848** (734-1040)	**2370** (1950-2930)	**3660** (3480-4120)	2310
Males	05-06	**505** (453-562)	**476** (433-537)	**947** (760-1110)	**2450** (1980-3000)	**3630** (3360-4120)	1590
Females	05-06	**360** (328-395)	**340** (325-355)	**701** (625-800)	**1790** (1600-2210)	**3230** (2570-3900)	1755
Mexican Americans	05-06	**382** (342-427)	**391** (348-423)	**650** (553-756)	**1230** (1010-1550)	**1970** (1710-2240)	820
Non-Hispanic blacks	05-06	**516** (452-589)	**444** (406-493)	**920** (722-1280)	**2490** (1950-3040)	**3660** (3140-4220)	901
Non-Hispanic whites	05-06	**424** (372-483)	**404** (356-448)	**838** (708-1050)	**2360** (1740-3010)	**3660** (3290-4450)	1369

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 2.0.

Urinary N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine (2011 - 2012)

Metabolite of Crotonaldehyde

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**443** (417-471)	**419** (383-446)	**806** (735-856)	**2000** (1720-2340)	**3700** (3100-4230)	2466
Age group							
6-11 years	11-12	**318** (291-347)	**347** (312-400)	**569** (501-629)	**861** (762-937)	**1190** (871-1500)	394
12-19 years	11-12	**350** (292-421)	**360** (301-439)	**631** (532-750)	**1130** (858-2190)	**2200** (1100-4040)	384
20 years and older	11-12	**477** (448-507)	**439** (392-470)	**874** (809-970)	**2350** (2000-2730)	**4160** (3580-4450)	1688
Gender							
Males	11-12	**507** (470-546)	**467** (425-502)	**848** (746-982)	**2010** (1520-2660)	**3840** (3010-4320)	1251
Females	11-12	**390** (349-435)	**352** (304-413)	**733** (630-834)	**2000** (1360-2490)	**3520** (2980-4190)	1215
Race/ethnicity							
Mexican Americans	11-12	**389** (320-474)	**393** (300-496)	**767** (655-856)	**1330** (990-1800)	**2350** (1460-3010)	313
Non-Hispanic blacks	11-12	**511** (454-576)	**480** (446-525)	**794** (691-899)	**2190** (1530-2690)	**3350** (2650-4850)	662
Non-Hispanic whites	11-12	**449** (411-492)	**422** (366-456)	**834** (706-930)	**2120** (1680-2660)	**3880** (3290-4370)	810
All Hispanics	11-12	**398** (348-455)	**384** (333-451)	**751** (651-838)	**1460** (1080-2060)	**2600** (1910-3270)	566
Asians	11-12	**336** (294-383)	**339** (313-384)	**588** (521-694)	**1140** (944-1580)	**1830** (1160-3090)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.0.

Urinary N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Crotonaldehyde

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**425** (384-471)	**322** (290-376)	**636** (530-880)	**2100** (1610-2650)	**4090** (2580-5170)	557
12-19 years	05-06	**296** (243-359)	**262** (221-312)	**373** (296-598)	**701** (384-1550)	**1210** (543-5150)	175
20 years and older	05-06	**451** (400-510)	**340** (295-400)	**800** (598-1010)	**2470** (1670-3120)	**4120** (2650-5590)	382
Males	05-06	**359** (304-425)	**286** (251-340)	**553** (347-902)	**1340** (902-1850)	**2040** (1250-3820)	274
Females	05-06	**496** (429-573)	**380** (331-407)	**828** (552-1390)	**3120** (1780-4720)	**5590** (2470-8260)	283
Mexican Americans	05-06	**340** (292-396)	**304** (266-373)	**439** (330-657)	**669** (439-1310)	**1160** (657-1910)	118
Non-Hispanic blacks	05-06	**326** (245-435)	**238** (214-290)	**429** (368-941)	**1650** (504-2980)	**2910** (1010-5520)	156
Non-Hispanic whites	05-06	**456** (385-541)	**342** (286-421)	**828** (553-1140)	**2580** (1530-3820)	**4430** (2800-5970)	242

Urinary N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Crotonaldehyde

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**506** (473-540)	**398** (370-419)	**683** (613-760)	**2050** (1720-2490)	**3970** (3220-5200)	2464
Age group							
6-11 years	11-12	**450** (421-480)	**425** (395-449)	**534** (501-611)	**843** (635-1110)	**1100** (785-1970)	393
12-19 years	11-12	**341** (300-388)	**308** (257-336)	**431** (376-502)	**909** (534-1430)	**1430** (763-2400)	384
20 years and older	11-12	**543** (508-581)	**408** (385-432)	**760** (693-920)	**2610** (2020-3280)	**4700** (3510-5830)	1687
Gender							
Males	11-12	**476** (442-511)	**377** (351-405)	**654** (600-770)	**1780** (1480-2170)	**3170** (2350-4230)	1250
Females	11-12	**536** (483-596)	**410** (379-444)	**698** (605-855)	**2700** (1570-3800)	**4700** (3350-5710)	1214
Race/ethnicity							
Mexican Americans	11-12	**439** (361-535)	**362** (320-424)	**581** (479-698)	**1430** (1090-1850)	**2240** (1660-4310)	313
Non-Hispanic blacks	11-12	**399** (364-437)	**322** (293-360)	**536** (471-641)	**1450** (1050-1780)	**2070** (1800-2680)	662
Non-Hispanic whites	11-12	**548** (506-594)	**411** (388-444)	**730** (628-932)	**2700** (1720-3550)	**4700** (3280-6190)	808
All Hispanics	11-12	**445** (395-502)	**361** (325-405)	**607** (519-712)	**1650** (1220-2020)	**2700** (1850-3440)	566
Asians	11-12	**449** (415-486)	**393** (353-433)	**575** (508-640)	**1110** (806-1680)	**2000** (1350-2410)	341

Urinary N-Acetyl-S-(phenyl)-L-cysteine (2005 - 2006)

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	**1.08** (.941-1.22)	**1.61** (1.36-1.98)	3347
12-19 years	05-06	*	< LOD	< LOD	**1.09** (.884-1.29)	**1.52** (1.29-1.72)	1035
20 years and older	05-06	*	< LOD	< LOD	**1.08** (.941-1.24)	**1.64** (1.37-2.27)	2312
Males	05-06	*	< LOD	< LOD	**1.08** (.946-1.29)	**1.64** (1.36-1.98)	1590
Females	05-06	*	< LOD	< LOD	**1.08** (.875-1.28)	**1.60** (1.23-2.47)	1756
Mexican Americans	05-06	*	< LOD	< LOD	**1.07** (.823-1.53)	**1.64** (1.07-2.31)	821
Non-Hispanic blacks	05-06	*	< LOD	< LOD	**.945** (.717-1.15)	**1.38** (1.15-1.58)	902
Non-Hispanic whites	05-06	*	< LOD	< LOD	**1.10** (.982-1.31)	**1.72** (1.36-2.45)	1370

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html

Urinary N-Acetyl-S-(phenyl)-L-cysteine (2011 - 2012)

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**1.07** (.985-1.14)	**1.95** (1.72-2.30)	**3.01** (2.65-3.32)	2466
Age group							
6-11 years	11-12	*	**< LOD**	**1.28** (1.10-1.52)	**2.36** (1.93-2.63)	**2.98** (2.40-3.67)	394
12-19 years	11-12	*	**< LOD**	**1.12** (.963-1.41)	**1.96** (1.57-2.52)	**2.81** (2.03-3.27)	384
20 years and older	11-12	*	**< LOD**	**1.02** (.943-1.12)	**1.91** (1.63-2.40)	**3.05** (2.56-3.45)	1688
Gender							
Males	11-12	*	**.645** (<LOD-.765)	**1.20** (1.07-1.28)	**2.12** (1.76-2.51)	**3.11** (2.65-3.76)	1251
Females	11-12	*	**< LOD**	**.964** (.834-1.07)	**1.91** (1.56-2.38)	**2.84** (2.12-3.32)	1215
Race/ethnicity							
Mexican Americans	11-12	*	**.661** (<LOD-.958)	**1.44** (.995-1.68)	**2.54** (1.75-2.93)	**2.96** (2.52-5.19)	313
Non-Hispanic blacks	11-12	*	**< LOD**	**1.05** (.963-1.16)	**1.84** (1.59-2.11)	**2.62** (2.19-3.06)	662
Non-Hispanic whites	11-12	*	**< LOD**	**1.04** (.931-1.13)	**1.92** (1.61-2.40)	**3.08** (2.44-3.50)	810
All Hispanics	11-12	*	**< LOD**	**1.20** (1.00-1.45)	**2.26** (1.75-2.62)	**2.85** (2.49-3.33)	566
Asians	11-12	*	**< LOD**	**.932** (.806-1.09)	**1.84** (1.45-2.16)	**2.56** (2.13-3.48)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html

Urinary N-Acetyl-S-(phenyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**< LOD**	**1.44** (1.24-1.77)	**1.93** (1.51-2.49)	559
12-19 years	05-06	*	**< LOD**	**< LOD**	**1.01** (.771-1.42)	**1.42** (.922-2.02)	175
20 years and older	05-06	*	**< LOD**	**< LOD**	**1.51** (1.25-1.84)	**2.12** (1.57-2.99)	383
Males	05-06	*	**< LOD**	**< LOD**	**1.13** (.848-1.44)	**1.51** (1.04-1.77)	274
Females	05-06	*	**< LOD**	**< LOD**	**1.77** (1.34-2.36)	**2.36** (1.75-3.26)	285
Mexican Americans	05-06	*	**< LOD**	**< LOD**	**1.09** (.744-1.55)	**1.35** (.902-1.82)	118
Non-Hispanic blacks	05-06	*	**< LOD**	**< LOD**	**1.01** (.589-1.47)	**1.38** (.720-1.93)	156
Non-Hispanic whites	05-06	*	**< LOD**	**< LOD**	**1.57** (1.33-2.12)	**2.28** (1.51-3.26)	243

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html

Urinary N-Acetyl-S-(phenyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**1.29** (1.18-1.41)	**2.10** (1.86-2.37)	**3.03** (2.62-3.53)	2464
Age group							
6-11 years	11-12	*	**< LOD**	**1.95** (1.64-2.24)	**2.68** (2.44-3.45)	**3.58** (2.66-4.71)	393
12-19 years	11-12	*	**< LOD**	**1.14** (.942-1.41)	**1.70** (1.29-2.23)	**2.35** (1.70-4.39)	384
20 years and older	11-12	*	**< LOD**	**1.26** (1.15-1.39)	**2.02** (1.77-2.42)	**3.03** (2.50-3.53)	1687
Gender							
Males	11-12	*	**.704** (<LOD-.771)	**1.12** (1.00-1.25)	**1.89** (1.64-2.21)	**2.55** (2.23-2.98)	1250
Females	11-12	*	**< LOD**	**1.46** (1.30-1.62)	**2.35** (2.02-2.73)	**3.46** (2.73-4.71)	1214
Race/ethnicity							
Mexican Americans	11-12	*	**.883** (<LOD-.986)	**1.45** (1.15-1.82)	**2.15** (1.66-3.04)	**3.04** (1.93-5.59)	313
Non-Hispanic blacks	11-12	*	**< LOD**	**.847** (.742-.924)	**1.35** (1.18-1.57)	**1.88** (1.57-2.36)	662
Non-Hispanic whites	11-12	*	**< LOD**	**1.36** (1.22-1.46)	**2.23** (1.92-2.55)	**3.26** (2.55-4.15)	808
All Hispanics	11-12	*	**< LOD**	**1.34** (1.11-1.64)	**1.93** (1.68-2.62)	**2.68** (2.04-3.39)	566
Asians	11-12	*	**< LOD**	**1.46** (1.27-1.66)	**2.23** (1.91-3.03)	**3.03** (2.37-4.95)	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html

Urinary *t,t*-Muconic acid (2005 - 2006)

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**102** (63.1-132)	**287** (261-323)	**486** (407-578)	3347
12-19 years	05-06	*	**< LOD**	**106** (40.9-164)	**308** (254-329)	**411** (349-486)	1031
20 years and older	05-06	*	**< LOD**	**102** (60.1-133)	**285** (254-330)	**508** (407-587)	2312
Males	05-06	*	**< LOD**	**128** (89.1-161)	**321** (273-375)	**520** (441-598)	1592
Females	05-06	*	**< LOD**	**72.4** (<LOD-112)	**248** (204-308)	**420** (341-586)	1755
Mexican Americans	05-06	*	**< LOD**	**117** (61.6-178)	**326** (263-441)	**553** (427-794)	818
Non-Hispanic blacks	05-06	*	**< LOD**	**41.7** (<LOD-129)	**276** (222-335)	**447** (335-577)	902
Non-Hispanic whites	05-06	*	**< LOD**	**111** (69.5-144)	**285** (242-334)	**502** (385-588)	1370

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 20.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html

Urinary *t,t*-Muconic acid (2011 - 2012)

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**72.8** (67.3-78.8)	**69.1** (60.9-74.9)	**158** (140-169)	**309** (281-357)	**457** (414-500)	2466
Age group							
6-11 years	11-12	**80.5** (67.7-95.8)	**77.7** (61.7-91.0)	**174** (126-266)	**384** (302-476)	**585** (387-967)	394
12-19 years	11-12	**71.3** (58.2-87.4)	**59.5** (50.1-89.1)	**177** (128-210)	**352** (261-451)	**483** (394-557)	384
20 years and older	11-12	**72.2** (66.3-78.6)	**69.0** (60.8-74.6)	**151** (134-163)	**293** (264-354)	**429** (379-538)	1688
Gender							
Males	11-12	**83.9** (75.7-93.0)	**81.4** (71.2-89.6)	**165** (154-178)	**333** (285-390)	**528** (403-676)	1251
Females	11-12	**63.5** (58.1-69.4)	**57.2** (50.8-66.2)	**140** (116-167)	**279** (246-361)	**418** (368-460)	1215
Race/ethnicity							
Mexican Americans	11-12	**89.9** (76.0-106)	**82.9** (70.1-102)	**195** (153-259)	**499** (334-597)	**787** (548-1280)	313
Non-Hispanic blacks	11-12	**78.3** (69.2-88.7)	**71.9** (59.5-83.9)	**163** (134-197)	**376** (316-425)	**542** (433-713)	662
Non-Hispanic whites	11-12	**71.9** (63.6-81.4)	**69.1** (58.7-80.5)	**155** (120-174)	**285** (237-379)	**414** (349-552)	810
All Hispanics	11-12	**80.3** (72.5-88.8)	**70.1** (63.4-80.9)	**171** (140-215)	**412** (306-499)	**645** (499-869)	566
Asians	11-12	**49.8** (43.4-57.0)	**44.9** (36.6-54.2)	**105** (81.9-143)	**204** (169-246)	**302** (229-384)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 20.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html

Urinary *t,t*-Muconic acid (creatinine corrected) (2005 - 2006)

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**106** (61.3-138)	**233** (199-260)	**362** (239-578)	558
12-19 years	05-06	*	**< LOD**	**67.1** (32.4-120)	**160** (102-187)	**187** (125-224)	175
20 years and older	05-06	*	**< LOD**	**110** (60.5-151)	**246** (202-325)	**425** (251-707)	382
Males	05-06	*	**< LOD**	**96.0** (45.2-150)	**239** (145-440)	**440** (192-707)	274
Females	05-06	*	**< LOD**	**116** (<LOD-154)	**229** (183-287)	**352** (229-429)	284
Mexican Americans	05-06	*	**< LOD**	**78.3** (24.7-138)	**235** (99.4-545)	**460** (119-1810)	118
Non-Hispanic blacks	05-06	*	**< LOD**	**26.6** (<LOD-64.1)	**155** (64.1-238)	**238** (100-325)	156
Non-Hispanic whites	05-06	*	**< LOD**	**131** (74.2-162)	**247** (199-362)	**425** (239-707)	242

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html

Urinary *t,t*-Muconic acid (creatinine corrected) (2011 - 2012)

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**83.2** (75.8-91.3)	**76.9** (70.2-85.4)	**160** (135-178)	**300** (268-326)	**473** (405-540)	2464
Age group							
6-11 years	11-12	**115** (97.2-136)	**97.1** (85.3-116)	**215** (157-293)	**501** (382-727)	**837** (596-1020)	393
12-19 years	11-12	**69.5** (60.2-80.1)	**66.3** (55.0-74.2)	**139** (102-157)	**255** (193-310)	**378** (310-574)	384
20 years and older	11-12	**82.5** (75.2-90.6)	**77.6** (70.2-85.9)	**162** (133-178)	**278** (258-319)	**453** (363-533)	1687
Gender							
Males	11-12	**79.0** (71.5-87.4)	**72.4** (66.3-83.7)	**150** (128-176)	**271** (244-319)	**446** (337-505)	1250
Females	11-12	**87.5** (77.6-98.6)	**82.9** (72.1-89.5)	**168** (144-191)	**315** (273-374)	**541** (413-639)	1214
Race/ethnicity							
Mexican Americans	11-12	**101** (85.7-120)	**91.7** (75.0-108)	**204** (156-271)	**446** (313-724)	**753** (446-897)	313
Non-Hispanic blacks	11-12	**61.1** (53.8-69.3)	**55.8** (49.8-64.0)	**121** (102-132)	**248** (205-285)	**377** (315-478)	662
Non-Hispanic whites	11-12	**88.1** (78.0-99.4)	**82.3** (72.1-90.1)	**166** (134-188)	**297** (233-349)	**456** (342-593)	808
All Hispanics	11-12	**89.8** (79.5-101)	**76.6** (67.6-89.5)	**177** (152-205)	**378** (313-498)	**621** (462-776)	566
Asians	11-12	**66.6** (58.2-76.1)	**61.3** (50.8-71.0)	**120** (102-141)	**243** (187-309)	**367** (260-645)	341

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html

Urinary N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine** (2005 - 2006)

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	**1.87** (1.59-2.22)	3349
12-19 years	05-06	*	< LOD	< LOD	< LOD	**1.51** (<LOD-3.00)	1036
20 years and older	05-06	*	< LOD	< LOD	< LOD	**1.87** (1.57-2.32)	2313
Males	05-06	*	< LOD	< LOD	< LOD	**1.95** (1.57-2.48)	1592
Females	05-06	*	< LOD	< LOD	< LOD	**1.73** (<LOD-2.91)	1757
Mexican Americans	05-06	*	< LOD	< LOD	**1.16** (<LOD-1.66)	**2.44** (1.61-4.51)	822
Non-Hispanic blacks	05-06	*	< LOD	< LOD	**1.21** (<LOD-1.73)	**3.03** (1.78-4.36)	902
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	**1.49** (<LOD-2.15)	1371

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Concentrations of N-Acetyl-S(1-phenyl- + (2-phenyl-2-hydroxyethyl)-L-cysteine were measured together and are reported as N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine** (2011 - 2012)

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**.933** (.843-1.04)	**1.90** (1.74-2.17)	**3.20** (2.75-3.63)	2466
Age group							
6-11 years	11-12	*	**< LOD**	**.929** (<LOD-1.12)	**1.98** (1.42-3.06)	**3.21** (1.98-5.67)	394
12-19 years	11-12	*	**< LOD**	**.882** (<LOD-1.11)	**1.88** (1.42-2.16)	**2.50** (1.90-4.61)	384
20 years and older	11-12	*	**< LOD**	**.942** (.819-1.08)	**1.91** (1.66-2.32)	**3.26** (2.71-3.93)	1688
Gender							
Males	11-12	*	**< LOD**	**.988** (.820-1.19)	**2.06** (1.80-2.70)	**3.60** (2.71-5.41)	1251
Females	11-12	*	**< LOD**	**.887** (.807-.987)	**1.75** (1.58-1.85)	**2.95** (2.27-3.26)	1215
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**.887** (.706-1.09)	**1.69** (1.51-1.93)	**2.39** (1.73-3.87)	313
Non-Hispanic blacks	11-12	*	**< LOD**	**1.40** (1.23-1.58)	**3.02** (2.39-3.56)	**4.14** (3.56-5.65)	662
Non-Hispanic whites	11-12	*	**< LOD**	**.807** (<LOD-.920)	**1.79** (1.57-1.93)	**2.95** (2.13-3.57)	810
All Hispanics	11-12	*	**< LOD**	**1.04** (.865-1.26)	**1.93** (1.69-2.39)	**2.99** (2.24-3.69)	566
Asians	11-12	*	**< LOD**	**< LOD**	**1.34** (1.01-1.73)	**1.95** (1.35-2.83)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
** Concentrations of N-Acetyl-S(1-phenyl- + (2-phenyl-2-hydroxyethyl)-L-cysteine were measured together and are reported as N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine** (creatinine corrected) (2005 - 2006)

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**< LOD**	**< LOD**	**2.73** (1.76-3.81)	559
12-19 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**1.71** (<LOD-4.09)	175
20 years and older	05-06	*	**< LOD**	**< LOD**	**< LOD**	**2.73** (1.77-3.81)	383
Males	05-06	*	**< LOD**	**< LOD**	**< LOD**	**1.77** (1.18-2.06)	274
Females	05-06	*	**< LOD**	**< LOD**	**< LOD**	**2.91** (<LOD-5.50)	285
Mexican Americans	05-06	*	**< LOD**	**< LOD**	**1.47** (<LOD-1.71)	**1.71** (1.05-8.25)	118
Non-Hispanic blacks	05-06	*	**< LOD**	**< LOD**	**.811** (<LOD-2.25)	**1.76** (.627-3.25)	156
Non-Hispanic whites	05-06	*	**< LOD**	**< LOD**	**< LOD**	**2.91** (<LOD-4.50)	243

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
** Concentrations of N-Acetyl-S(1-phenyl- + (2-phenyl-2-hydroxyethyl)-L-cysteine were measured together and are reported as N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine** (creatinine corrected) (2011 - 2012)

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	**1.34** (1.27-1.41)	**2.28** (2.06-2.61)	**3.34** (2.75-4.13)	2464
Age group							
6-11 years	11-12	*	< LOD	**1.64** (<LOD-1.83)	**2.61** (2.06-3.45)	**3.81** (2.90-5.50)	393
12-19 years	11-12	*	< LOD	**1.15** (<LOD-1.30)	**1.96** (1.38-2.61)	**3.09** (1.85-5.50)	384
20 years and older	11-12	*	< LOD	**1.34** (1.27-1.43)	**2.36** (2.06-2.64)	**3.34** (2.75-4.13)	1687
Gender							
Males	11-12	*	< LOD	**1.13** (1.05-1.24)	**1.96** (1.71-2.17)	**2.91** (2.61-3.34)	1250
Females	11-12	*	< LOD	**1.60** (1.40-1.77)	**2.48** (2.17-2.85)	**3.81** (2.75-4.88)	1214
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	**1.21** (1.10-1.38)	**2.23** (1.77-2.61)	**2.69** (2.29-3.30)	313
Non-Hispanic blacks	11-12	*	< LOD	**1.17** (1.05-1.26)	**1.89** (1.72-2.38)	**2.91** (2.47-3.54)	662
Non-Hispanic whites	11-12	*	< LOD	**1.34** (<LOD-1.48)	**2.35** (1.98-2.75)	**3.45** (2.82-4.31)	808
All Hispanics	11-12	*	< LOD	**1.36** (1.20-1.46)	**2.19** (1.98-2.59)	**2.75** (2.61-3.09)	566
Asians	11-12	*	< LOD	< LOD	**2.36** (1.71-3.30)	**3.54** (2.61-4.95)	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
** Concentrations of N-Acetyl-S(1-phenyl- + (2-phenyl-2-hydroxyethyl)-L-cysteine were measured together and are reported as N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary N-Acetyl-S-(*n*-propyl)-L-cysteine (2005 - 2006)

Metabolite of 1-Bromopropane

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**3.70** (3.40-4.02)	**2.96** (2.62-3.41)	**9.49** (8.61-10.6)	**26.7** (22.1-33.3)	**52.0** (42.7-62.5)	3346
12-19 years	05-06	**3.57** (3.08-4.13)	**2.89** (2.39-3.67)	**9.29** (7.21-11.0)	**24.5** (18.2-29.7)	**46.1** (30.4-62.6)	1033
20 years and older	05-06	**3.72** (3.42-4.04)	**2.97** (2.62-3.45)	**9.58** (8.61-10.8)	**27.3** (22.0-34.6)	**52.6** (42.8-62.5)	2310
Males	05-06	**4.03** (3.63-4.47)	**3.50** (2.97-4.06)	**10.3** (8.76-11.9)	**28.6** (21.7-35.0)	**52.0** (42.0-62.5)	1589
Females	05-06	**3.40** (3.02-3.84)	**2.57** (2.13-3.05)	**8.98** (7.50-10.6)	**26.0** (18.0-38.4)	**49.3** (38.6-65.7)	1754
Mexican Americans	05-06	**5.63** (4.65-6.80)	**5.61** (4.30-6.48)	**17.0** (13.0-20.7)	**44.8** (33.3-54.9)	**77.2** (54.9-89.6)	819
Non-Hispanic blacks	05-06	**4.20** (3.57-4.95)	**3.78** (2.89-5.26)	**10.1** (8.96-12.4)	**27.9** (19.8-37.9)	**51.1** (37.9-77.7)	899
Non-Hispanic whites	05-06	**3.30** (3.05-3.58)	**2.48** (2.17-2.87)	**8.42** (7.50-9.45)	**22.9** (18.6-29.5)	**45.5** (33.3-56.9)	1367

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 1.2.

Urinary N-Acetyl-S-(*n*-propyl)-L-cysteine (2011 - 2012)

Metabolite of 1-Bromopropane

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**4.08** (3.67-4.52)	**3.70** (3.18-4.14)	**10.3** (8.86-11.8)	**26.5** (23.0-29.9)	**43.7** (37.0-60.9)	2396
Age group							
6-11 years	11-12	**2.44** (2.15-2.78)	**1.74** (1.44-2.30)	**5.09** (4.38-6.26)	**12.1** (8.91-20.7)	**24.8** (15.7-32.0)	387
12-19 years	11-12	**3.13** (2.41-4.08)	**2.46** (1.50-4.28)	**7.10** (4.72-10.3)	**18.1** (11.1-31.5)	**31.6** (18.1-49.3)	366
20 years and older	11-12	**4.48** (4.00-5.02)	**4.10** (3.64-4.63)	**11.4** (9.69-13.8)	**28.9** (24.6-33.1)	**49.7** (36.1-72.4)	1643
Gender							
Males	11-12	**4.27** (3.73-4.89)	**3.75** (3.13-4.51)	**10.4** (8.86-12.2)	**28.4** (23.0-33.9)	**48.9** (33.1-72.9)	1218
Females	11-12	**3.90** (3.44-4.41)	**3.58** (2.85-4.23)	**10.2** (8.23-12.7)	**24.8** (20.2-30.2)	**43.0** (32.4-52.3)	1178
Race/ethnicity							
Mexican Americans	11-12	**5.51** (4.37-6.95)	**5.59** (4.13-8.24)	**14.3** (11.1-20.8)	**29.0** (22.3-40.5)	**40.5** (28.2-60.8)	293
Non-Hispanic blacks	11-12	**5.15** (4.24-6.27)	**4.52** (3.51-5.67)	**13.1** (10.3-16.4)	**38.3** (27.3-52.2)	**66.0** (43.0-93.2)	655
Non-Hispanic whites	11-12	**3.52** (3.10-3.99)	**3.09** (2.38-3.75)	**8.33** (6.46-10.5)	**21.7** (17.5-27.4)	**39.6** (25.8-61.8)	795
All Hispanics	11-12	**5.18** (4.34-6.20)	**5.16** (4.22-6.36)	**12.9** (11.1-17.2)	**28.9** (24.0-34.9)	**43.5** (33.7-60.8)	544
Asians	11-12	**6.94** (5.71-8.45)	**6.33** (4.70-9.11)	**20.9** (16.9-27.0)	**42.2** (32.8-58.0)	**69.7** (48.9-98.7)	316

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.2.

Urinary N-Acetyl-S-(*n*-propyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of 1-Bromopropane

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**3.69** (2.87-4.74)	**3.76** (2.50-4.80)	**9.30** (6.63-11.6)	**20.1** (15.6-38.8)	**48.0** (22.6-72.2)	557
12-19 years	05-06	**2.67** (2.05-3.48)	**2.31** (1.64-3.31)	**5.50** (3.31-9.62)	**11.6** (6.07-24.2)	**24.2** (11.2-49.4)	175
20 years and older	05-06	**3.90** (2.95-5.15)	**4.05** (2.54-5.39)	**9.62** (6.97-13.6)	**23.1** (15.4-44.7)	**49.6** (18.5-76.3)	382
Males	05-06	**3.36** (2.50-4.52)	**3.72** (2.11-4.92)	**7.33** (5.48-10.9)	**17.5** (11.5-27.1)	**27.1** (16.3-68.6)	274
Females	05-06	**4.03** (2.93-5.54)	**3.84** (2.50-5.22)	**9.44** (6.63-15.3)	**30.2** (12.2-58.8)	**56.4** (20.1-76.3)	283
Mexican Americans	05-06	**4.88** (3.22-7.40)	**5.37** (1.84-9.66)	**14.9** (9.66-20.2)	**35.9** (16.3-127)	**80.0** (20.2-220)	118
Non-Hispanic blacks	05-06	**2.13** (1.35-3.36)	**1.99** (1.09-3.76)	**5.13** (2.77-10.2)	**15.9** (7.36-25.2)	**25.2** (14.7-30.2)	156
Non-Hispanic whites	05-06	**3.58** (2.77-4.62)	**3.72** (2.54-4.68)	**9.15** (5.81-11.6)	**18.3** (12.0-42.0)	**44.7** (18.5-65.9)	242

Urinary N-Acetyl-S-(*n*-propyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of 1-Bromopropane

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**4.64** (4.23-5.09)	**4.19** (3.69-4.72)	**11.3** (9.46-12.8)	**28.8** (24.2-32.7)	**46.1** (36.4-58.4)	2394
Age group							
6-11 years	11-12	**3.39** (3.01-3.82)	**3.15** (2.58-3.87)	**6.54** (5.46-7.71)	**14.0** (10.7-17.1)	**21.5** (14.5-30.0)	386
12-19 years	11-12	**3.08** (2.31-4.10)	**2.59** (1.74-4.24)	**7.14** (4.29-10.6)	**15.6** (9.44-23.4)	**23.8** (15.6-43.1)	366
20 years and older	11-12	**5.10** (4.61-5.64)	**4.72** (4.17-5.32)	**12.7** (11.1-13.9)	**31.2** (25.1-40.0)	**50.3** (37.9-64.4)	1642
Gender							
Males	11-12	**4.01** (3.59-4.47)	**3.59** (3.24-4.03)	**9.20** (7.62-11.1)	**24.6** (19.2-31.0)	**40.0** (33.8-47.6)	1217
Females	11-12	**5.34** (4.58-6.24)	**4.88** (4.12-6.06)	**12.9** (10.6-16.2)	**30.3** (25.1-37.1)	**50.3** (36.7-65.1)	1177
Race/ethnicity							
Mexican Americans	11-12	**6.14** (5.18-7.29)	**5.61** (3.86-8.70)	**15.0** (12.5-21.8)	**32.4** (22.7-45.2)	**46.3** (27.4-67.1)	293
Non-Hispanic blacks	11-12	**4.02** (3.29-4.91)	**3.76** (2.94-4.71)	**9.20** (6.72-12.9)	**28.1** (17.7-45.7)	**56.6** (33.4-72.3)	655
Non-Hispanic whites	11-12	**4.30** (3.80-4.87)	**3.83** (3.27-4.54)	**9.88** (8.31-12.1)	**25.6** (19.1-31.0)	**42.2** (29.3-54.5)	793
All Hispanics	11-12	**5.76** (5.02-6.61)	**5.44** (4.25-6.61)	**13.8** (11.9-16.3)	**30.9** (24.8-37.6)	**45.8** (34.7-63.0)	544
Asians	11-12	**9.12** (7.40-11.2)	**8.93** (7.06-11.8)	**23.6** (16.6-36.7)	**54.2** (43.1-65.0)	**72.0** (60.4-107)	316

Urinary N-Acetyl-S-(trichlorovinyl)-L-cysteine (2005 - 2006)

Metabolite of Tetrachloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	3349
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	1036
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	2313
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	1592
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	1757
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	822
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	902
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	1371

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 3.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(trichlorovinyl)-L-cysteine (2011 - 2012)

Metabolite of Tetrachloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2466
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	394
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1688
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1251
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1215
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	810
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 3.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(trichlorovinyl)-L-cysteine (creatinine corrected) (2005 - 2006)

Metabolite of Tetrachloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	< LOD	< LOD	< LOD	559
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	175
20 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	383
Males	05-06	*	< LOD	< LOD	< LOD	< LOD	274
Females	05-06	*	< LOD	< LOD	< LOD	< LOD	285
Mexican Americans	05-06	*	< LOD	< LOD	< LOD	< LOD	118
Non-Hispanic blacks	05-06	*	< LOD	< LOD	< LOD	< LOD	156
Non-Hispanic whites	05-06	*	< LOD	< LOD	< LOD	< LOD	243

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(trichlorovinyl)-L-cysteine (creatinine corrected) (2011 - 2012)

Metabolite of Tetrachloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	2464
Age group							
6-11 years	11-12	*	< LOD	< LOD	< LOD	< LOD	393
12-19 years	11-12	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	1687
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	1250
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	1214
Race/ethnicity							
Mexican Americans	11-12	*	< LOD	< LOD	< LOD	< LOD	313
Non-Hispanic blacks	11-12	*	< LOD	< LOD	< LOD	< LOD	662
Non-Hispanic whites	11-12	*	< LOD	< LOD	< LOD	< LOD	808
All Hispanics	11-12	*	< LOD	< LOD	< LOD	< LOD	566
Asians	11-12	*	< LOD	< LOD	< LOD	< LOD	341

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary 2-Aminothiazoline-4-carboxylic acid (2005 - 2006)

Metabolite of Cyanide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**66.0** (55.8-78.1)	**88.1** (73.0-105)	**212** (197-226)	**379** (336-406)	**497** (459-546)	3349
12-19 years	05-06	**74.7** (61.3-91.0)	**120** (93.3-146)	**257** (221-290)	**436** (399-504)	**590** (497-684)	1034
20 years and older	05-06	**64.8** (54.4-77.0)	**84.7** (68.6-103)	**204** (188-220)	**365** (326-398)	**481** (450-533)	2313
Males	05-06	*	**55.5** (25.3-80.2)	**159** (143-174)	**293** (270-325)	**426** (381-456)	1590
Females	05-06	**91.3** (78.2-107)	**125** (106-143)	**266** (233-288)	**429** (387-465)	**547** (490-628)	1756
Mexican Americans	05-06	**90.4** (79.5-103)	**131** (119-152)	**275** (248-299)	**480** (426-560)	**667** (574-753)	820
Non-Hispanic blacks	05-06	**73.9** (57.2-95.5)	**117** (87.4-148)	**274** (234-311)	**458** (383-548)	**603** (557-694)	900
Non-Hispanic whites	05-06	**61.6** (51.0-74.4)	**80.2** (62.7-102)	**188** (173-207)	**340** (303-389)	**456** (404-497)	1371

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 15.0.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary 2-Aminothiazoline-4-carboxylic acid (2011 - 2012)

Metabolite of Cyanide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**110** (101-120)	**120** (106-133)	**234** (212-249)	**410** (364-441)	**558** (500-622)	2466
Age group							
6-11 years	11-12	**247** (227-270)	**270** (239-308)	**482** (394-583)	**718** (641-835)	**911** (749-1090)	394
12-19 years	11-12	**118** (97.2-143)	**133** (100-159)	**266** (232-334)	**435** (347-562)	**583** (435-923)	384
20 years and older	11-12	**99.8** (90.3-110)	**106** (98.9-121)	**201** (181-228)	**348** (304-407)	**483** (393-545)	1688
Gender							
Males	11-12	**92.0** (84.1-101)	**98.4** (82.4-109)	**191** (169-211)	**361** (314-386)	**493** (414-586)	1251
Females	11-12	**131** (116-148)	**147** (131-162)	**275** (246-303)	**447** (401-515)	**589** (514-757)	1215
Race/ethnicity							
Mexican Americans	11-12	**135** (109-168)	**144** (106-184)	**271** (191-374)	**501** (364-671)	**728** (537-872)	313
Non-Hispanic blacks	11-12	**142** (124-163)	**163** (122-201)	**315** (264-383)	**534** (485-604)	**728** (651-816)	662
Non-Hispanic whites	11-12	**99.5** (91.2-109)	**107** (99.0-125)	**202** (182-229)	**356** (331-391)	**482** (419-553)	810
All Hispanics	11-12	**135** (117-156)	**139** (114-170)	**268** (212-310)	**483** (374-589)	**671** (537-835)	566
Asians	11-12	**114** (100-131)	**114** (102-130)	**225** (181-290)	**424** (335-520)	**543** (440-671)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 15.0.

Urinary 2-Aminothiazoline-4-carboxylic acid (creatinine corrected) (2005 - 2006)

Metabolite of Cyanide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**65.7** (51.5-83.6)	**95.5** (71.7-113)	**212** (158-252)	**375** (307-462)	**520** (420-667)	557
12-19 years	05-06	**56.2** (41.2-76.7)	**82.4** (43.6-128)	**230** (135-253)	**340** (253-455)	**440** (307-730)	175
20 years and older	05-06	**67.4** (51.8-87.6)	**95.6** (66.5-117)	**212** (154-264)	**388** (318-469)	**535** (420-682)	382
Males	05-06	*	**43.6** (22.6-64.2)	**103** (82.4-113)	**195** (126-307)	**312** (234-584)	274
Females	05-06	**118** (91.1-153)	**162** (117-220)	**292** (233-362)	**440** (385-535)	**667** (470-812)	283
Mexican Americans	05-06	**75.2** (49.9-113)	**107** (76.2-154)	**196** (120-294)	**312** (196-800)	**469** (235-908)	118
Non-Hispanic blacks	05-06	**34.3** (20.0-58.7)	**41.9** (11.2-94.8)	**146** (86.8-224)	**292** (182-462)	**455** (255-476)	156
Non-Hispanic whites	05-06	**71.3** (55.5-91.5)	**100** (67.1-120)	**224** (158-283)	**388** (319-515)	**584** (390-727)	242

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary 2-Aminothiazoline-4-carboxylic acid (creatinine corrected) (2011 - 2012)

Metabolite of Cyanide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**126** (118-134)	**135** (123-147)	**249** (228-272)	**413** (380-438)	**539** (489-588)	2464
Age group							
6-11 years	11-12	**352** (323-384)	**375** (329-418)	**540** (472-628)	**742** (634-859)	**926** (747-1000)	393
12-19 years	11-12	**115** (101-131)	**125** (113-151)	**214** (183-240)	**338** (255-438)	**438** (307-591)	384
20 years and older	11-12	**114** (105-123)	**120** (111-134)	**221** (201-241)	**363** (336-379)	**444** (411-514)	1687
Gender							
Males	11-12	**86.4** (79.1-94.3)	**80.2** (73.1-91.6)	**169** (142-199)	**328** (298-375)	**471** (426-539)	1250
Females	11-12	**181** (166-196)	**189** (171-204)	**312** (286-337)	**440** (413-489)	**577** (520-624)	1214
Race/ethnicity							
Mexican Americans	11-12	**153** (121-192)	**178** (149-215)	**300** (228-353)	**438** (363-539)	**585** (450-800)	313
Non-Hispanic blacks	11-12	**111** (98.4-125)	**125** (106-147)	**245** (212-276)	**396** (325-458)	**504** (445-544)	662
Non-Hispanic whites	11-12	**121** (113-131)	**123** (112-136)	**230** (217-256)	**413** (373-440)	**539** (458-605)	808
All Hispanics	11-12	**152** (130-177)	**178** (153-201)	**286** (253-331)	**423** (359-483)	**568** (454-749)	566
Asians	11-12	**153** (137-172)	**158** (141-190)	**265** (232-309)	**439** (342-525)	**547** (459-691)	341

Urinary Mandelic acid (2005 - 2006)

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**165** (156-174)	**173** (165-180)	**293** (274-308)	**481** (453-520)	**686** (600-775)	3347
12-19 years	05-06	**165** (149-182)	**179** (161-195)	**265** (248-292)	**380** (343-421)	**464** (411-582)	1034
20 years and older	05-06	**165** (156-175)	**173** (162-180)	**300** (277-317)	**499** (463-529)	**712** (631-797)	2311
Males	05-06	**194** (182-206)	**198** (184-216)	**339** (306-360)	**524** (481-601)	**754** (627-899)	1591
Females	05-06	**142** (133-151)	**147** (138-157)	**260** (241-277)	**423** (385-458)	**618** (488-720)	1754
Mexican Americans	05-06	**167** (153-182)	**185** (172-203)	**291** (259-322)	**440** (385-481)	**540** (463-742)	821
Non-Hispanic blacks	05-06	**204** (184-225)	**209** (184-233)	**343** (296-398)	**564** (473-653)	**754** (593-910)	899
Non-Hispanic whites	05-06	**159** (149-171)	**165** (156-176)	**286** (264-310)	**482** (448-523)	**676** (600-775)	1371

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 12.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary Mandelic acid (2011 - 2012)

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**146** (134-160)	**152** (140-169)	**263** (236-297)	**424** (386-466)	**589** (510-677)	2466
Age group							
6-11 years	11-12	**111** (103-120)	**113** (103-131)	**195** (173-223)	**311** (235-359)	**384** (317-478)	394
12-19 years	11-12	**130** (114-149)	**140** (121-164)	**236** (201-288)	**335** (293-404)	**421** (356-638)	384
20 years and older	11-12	**153** (138-170)	**159** (141-180)	**275** (245-312)	**452** (414-499)	**638** (533-766)	1688
Gender							
Males	11-12	**170** (155-186)	**176** (150-196)	**285** (245-327)	**452** (388-542)	**677** (536-934)	1251
Females	11-12	**126** (112-143)	**135** (120-147)	**245** (210-272)	**410** (351-454)	**510** (431-619)	1215
Race/ethnicity							
Mexican Americans	11-12	**143** (126-162)	**153** (139-170)	**236** (202-259)	**317** (288-354)	**419** (327-903)	313
Non-Hispanic blacks	11-12	**186** (169-205)	**189** (164-216)	**296** (267-348)	**507** (447-560)	**730** (587-845)	662
Non-Hispanic whites	11-12	**141** (125-158)	**146** (135-162)	**260** (220-308)	**430** (386-483)	**574** (498-665)	810
All Hispanics	11-12	**145** (124-169)	**153** (135-176)	**255** (205-296)	**337** (296-482)	**485** (356-903)	566
Asians	11-12	**122** (108-137)	**128** (114-146)	**210** (181-254)	**335** (280-395)	**448** (349-594)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 12.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary Mandelic acid (creatinine corrected) (2005 - 2006)

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**174** (159-190)	**166** (158-177)	**252** (226-270)	**402** (327-548)	**652** (458-840)	557
12-19 years	05-06	**123** (112-135)	**121** (106-142)	**169** (152-190)	**229** (181-326)	**326** (206-393)	175
20 years and older	05-06	**184** (166-204)	**172** (162-191)	**263** (233-286)	**429** (358-557)	**730** (477-872)	382
Males	05-06	**157** (137-179)	**160** (143-172)	**229** (199-268)	**325** (269-410)	**476** (314-741)	274
Females	05-06	**191** (170-216)	**172** (160-193)	**271** (233-317)	**507** (369-817)	**817** (399-967)	283
Mexican Americans	05-06	**161** (137-189)	**150** (136-179)	**218** (168-302)	**313** (194-675)	**371** (274-675)	118
Non-Hispanic blacks	05-06	**137** (122-153)	**132** (116-155)	**216** (171-254)	**301** (237-468)	**369** (274-683)	156
Non-Hispanic whites	05-06	**183** (164-203)	**176** (161-195)	**268** (226-301)	**458** (357-561)	**817** (507-872)	242

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary Mandelic acid (creatinine corrected) (2011 - 2012)

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**167** (155-179)	**158** (146-168)	**232** (215-251)	**363** (328-392)	**513** (440-608)	2464
Age group							
6-11 years	11-12	**158** (147-171)	**161** (149-174)	**223** (199-246)	**289** (252-306)	**337** (294-389)	393
12-19 years	11-12	**127** (115-139)	**125** (110-137)	**173** (147-199)	**225** (215-233)	**291** (225-323)	384
20 years and older	11-12	**175** (162-188)	**162** (150-178)	**247** (225-271)	**394** (366-433)	**564** (475-622)	1687
Gender							
Males	11-12	**159** (150-170)	**148** (138-158)	**221** (190-249)	**349** (316-392)	**482** (420-564)	1250
Females	11-12	**174** (158-192)	**166** (150-184)	**245** (220-281)	**382** (335-423)	**531** (410-622)	1214
Race/ethnicity							
Mexican Americans	11-12	**161** (142-183)	**148** (135-167)	**208** (187-223)	**290** (262-333)	**391** (290-657)	313
Non-Hispanic blacks	11-12	**145** (135-156)	**141** (128-155)	**193** (181-211)	**294** (262-335)	**440** (345-493)	662
Non-Hispanic whites	11-12	**172** (156-189)	**162** (144-184)	**247** (224-283)	**389** (354-452)	**559** (452-659)	808
All Hispanics	11-12	**162** (148-178)	**152** (143-163)	**209** (190-230)	**307** (262-350)	**400** (325-525)	566
Asians	11-12	**163** (152-175)	**159** (148-174)	**225** (205-237)	**296** (251-381)	**397** (305-553)	341

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary 2-Methylhippuric acid (2005 - 2006)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**34.6** (31.8-37.7)	**32.3** (28.3-36.7)	**81.5** (70.1-91.0)	**170** (155-181)	**258** (221-284)	3346
12-19 years	05-06	**38.1** (33.7-43.1)	**35.1** (30.1-41.4)	**85.6** (72.5-93.0)	**183** (167-206)	**277** (217-312)	1031
20 years and older	05-06	**34.1** (31.1-37.5)	**31.8** (27.9-36.2)	**81.1** (68.0-92.0)	**165** (148-179)	**252** (217-284)	2312
Males	05-06	**41.0** (37.5-44.8)	**39.9** (35.3-44.4)	**92.9** (84.6-99.8)	**187** (169-207)	**276** (234-306)	1588
Females	05-06	**29.5** (26.6-32.6)	**26.9** (23.7-30.0)	**66.7** (56.1-80.9)	**156** (126-172)	**235** (181-275)	1755
Mexican Americans	05-06	**32.3** (28.4-36.8)	**30.2** (27.0-35.0)	**67.3** (54.1-85.2)	**152** (102-238)	**258** (162-336)	819
Non-Hispanic blacks	05-06	**36.0** (31.9-40.7)	**33.3** (28.3-40.4)	**82.1** (69.0-96.1)	**172** (140-193)	**257** (210-280)	901
Non-Hispanic whites	05-06	**35.6** (32.4-39.1)	**33.9** (28.7-38.2)	**84.5** (73.0-92.9)	**173** (158-196)	**269** (226-293)	1368

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 5.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 2-Methylhippuric acid (2011 - 2012)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**32.8** (29.8-36.1)	**30.4** (27.4-34.1)	**76.1** (69.2-88.9)	**161** (133-192)	**221** (195-276)	2466
Age group							
6-11 years	11-12	**21.9** (19.6-24.4)	**19.4** (16.6-23.4)	**45.4** (35.8-54.9)	**97.4** (61.8-114)	**122** (97.2-168)	394
12-19 years	11-12	**31.0** (26.4-36.4)	**27.7** (24.7-34.5)	**68.3** (56.7-75.9)	**146** (104-166)	**173** (161-227)	384
20 years and older	11-12	**34.6** (30.9-38.6)	**32.8** (28.6-37.2)	**83.2** (72.6-94.5)	**170** (134-206)	**232** (200-327)	1688
Gender							
Males	11-12	**37.7** (32.3-44.0)	**33.0** (28.5-38.9)	**86.8** (72.9-104)	**180** (147-224)	**269** (195-407)	1251
Females	11-12	**28.6** (25.3-32.4)	**28.5** (25.4-32.5)	**69.2** (58.5-82.6)	**135** (113-151)	**197** (159-227)	1215
Race/ethnicity							
Mexican Americans	11-12	**30.5** (24.7-37.7)	**29.1** (24.9-34.1)	**62.3** (51.0-72.0)	**129** (84.1-171)	**198** (133-250)	313
Non-Hispanic blacks	11-12	**35.6** (31.2-40.6)	**33.0** (28.2-40.7)	**78.4** (66.9-97.5)	**155** (131-192)	**212** (181-269)	662
Non-Hispanic whites	11-12	**33.5** (30.0-37.3)	**31.5** (27.5-35.9)	**82.6** (70.5-94.5)	**166** (134-204)	**232** (188-351)	810
All Hispanics	11-12	**29.2** (25.0-34.1)	**26.5** (22.5-32.3)	**64.9** (51.0-72.7)	**131** (92.5-166)	**198** (144-227)	566
Asians	11-12	**26.2** (21.5-32.0)	**26.3** (20.9-33.8)	**56.4** (47.4-75.4)	**114** (79.4-155)	**165** (126-195)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 5.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 2-Methylhippuric acid (creatinine corrected) (2005 - 2006)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**34.2** (30.4-38.5)	**32.4** (27.9-35.6)	**68.4** (55.3-91.4)	**150** (127-183)	**204** (170-265)	557
12-19 years	05-06	**26.5** (20.6-34.1)	**27.5** (20.0-34.1)	**68.5** (34.1-120)	**137** (83.1-185)	**185** (86.4-250)	175
20 years and older	05-06	**35.7** (31.3-40.8)	**33.0** (27.8-38.2)	**68.4** (54.8-92.5)	**156** (128-183)	**204** (175-295)	382
Males	05-06	**29.0** (25.4-33.1)	**28.2** (25.0-33.0)	**57.9** (48.8-68.4)	**117** (88.7-133)	**150** (117-195)	274
Females	05-06	**40.0** (33.6-47.5)	**35.4** (29.4-41.9)	**91.4** (55.5-139)	**185** (130-259)	**259** (180-327)	283
Mexican Americans	05-06	**25.2** (21.6-29.5)	**26.9** (18.0-29.4)	**44.1** (31.5-55.7)	**83.8** (51.9-157)	**157** (70.6-170)	118
Non-Hispanic blacks	05-06	**22.4** (17.3-28.9)	**20.1** (17.1-26.1)	**43.8** (28.4-60.4)	**84.0** (53.1-132)	**119** (73.4-180)	156
Non-Hispanic whites	05-06	**38.7** (32.8-45.6)	**35.6** (28.2-44.6)	**83.0** (56.9-117)	**175** (130-238)	**259** (185-318)	242

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 2-Methylhippuric acid (creatinine corrected) (2011 - 2012)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**37.5** (33.9-41.4)	**35.2** (31.5-39.3)	**77.9** (69.0-87.6)	**159** (140-184)	**248** (187-303)	2464
Age group							
6-11 years	11-12	**31.2** (27.5-35.3)	**26.9** (24.1-31.9)	**48.5** (44.9-61.0)	**101** (70.9-155)	**173** (102-209)	393
12-19 years	11-12	**30.2** (25.4-35.9)	**29.6** (22.7-38.6)	**54.5** (47.6-68.9)	**103** (74.3-160)	**175** (106-277)	384
20 years and older	11-12	**39.5** (35.5-43.9)	**37.4** (33.6-42.1)	**87.0** (77.3-96.9)	**168** (142-201)	**270** (190-331)	1687
Gender							
Males	11-12	**35.5** (30.8-40.8)	**34.3** (28.6-39.8)	**75.0** (62.5-86.4)	**144** (121-171)	**251** (161-336)	1250
Females	11-12	**39.5** (35.2-44.2)	**36.4** (31.2-41.1)	**83.7** (69.0-97.2)	**170** (146-198)	**245** (187-301)	1214
Race/ethnicity							
Mexican Americans	11-12	**34.5** (27.7-42.9)	**29.3** (24.1-36.1)	**62.9** (49.1-76.1)	**127** (88.8-175)	**188** (109-300)	313
Non-Hispanic blacks	11-12	**27.7** (24.7-31.1)	**26.2** (20.8-32.6)	**58.9** (49.8-71.3)	**104** (87.5-120)	**146** (114-182)	662
Non-Hispanic whites	11-12	**40.9** (36.9-45.4)	**39.4** (34.3-43.6)	**88.3** (76.3-99.7)	**180** (146-233)	**281** (201-333)	808
All Hispanics	11-12	**32.7** (28.7-37.1)	**27.6** (25.2-32.6)	**60.8** (52.1-70.1)	**127** (98.5-142)	**170** (139-238)	566
Asians	11-12	**35.1** (30.4-40.5)	**34.3** (27.2-39.6)	**71.3** (59.3-81.0)	**123** (105-161)	**177** (135-215)	341

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 3-and 4-Methylhippuric acid (2005 - 2006)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**256** (240-274)	**248** (223-270)	**573** (505-654)	**1220** (1140-1320)	**1840** (1740-1930)	3346
12-19 years	05-06	**288** (261-317)	**272** (239-301)	**516** (453-645)	**1190** (997-1370)	**1810** (1460-2220)	1033
20 years and older	05-06	**252** (235-270)	**241** (215-267)	**581** (508-675)	**1230** (1120-1380)	**1840** (1730-1910)	2312
Males	05-06	**307** (288-328)	**281** (260-324)	**685** (591-765)	**1380** (1280-1560)	**1900** (1810-2030)	1589
Females	05-06	**216** (198-234)	**204** (179-233)	**467** (400-554)	**1070** (971-1160)	**1780** (1500-1900)	1756
Mexican Americans	05-06	**219** (198-242)	**214** (195-234)	**442** (355-514)	**887** (612-1240)	**1300** (1010-1640)	819
Non-Hispanic blacks	05-06	**284** (252-322)	**260** (228-307)	**651** (539-782)	**1220** (1080-1410)	**1660** (1410-1900)	901
Non-Hispanic whites	05-06	**264** (245-284)	**258** (226-281)	**595** (524-696)	**1320** (1160-1510)	**1900** (1790-2080)	1369

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 8.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 3-and 4-Methylhippuric acid (2011 - 2012)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**221** (202-241)	**212** (197-229)	**563** (485-624)	**1190** (1000-1410)	**1710** (1520-2040)	2466
Age group							
6-11 years	11-12	**152** (134-172)	**136** (107-180)	**311** (254-368)	**616** (441-747)	**889** (644-1140)	394
12-19 years	11-12	**214** (185-248)	**209** (176-238)	**499** (374-592)	**1210** (879-1570)	**1680** (1510-2100)	384
20 years and older	11-12	**231** (209-256)	**222** (206-249)	**601** (523-667)	**1230** (1050-1470)	**1740** (1560-2050)	1688
Gender							
Males	11-12	**251** (217-290)	**224** (203-264)	**590** (477-708)	**1340** (1050-1590)	**1720** (1470-2260)	1251
Females	11-12	**195** (173-220)	**202** (176-215)	**547** (431-602)	**1020** (866-1230)	**1650** (1470-1890)	1215
Race/ethnicity							
Mexican Americans	11-12	**178** (141-224)	**165** (118-224)	**388** (288-446)	**879** (569-1110)	**1230** (886-2120)	313
Non-Hispanic blacks	11-12	**257** (226-293)	**246** (200-275)	**600** (495-725)	**1270** (1090-1440)	**1830** (1490-2060)	662
Non-Hispanic whites	11-12	**231** (209-256)	**221** (205-251)	**599** (499-681)	**1250** (1050-1510)	**1720** (1510-2190)	810
All Hispanics	11-12	**176** (141-219)	**161** (118-215)	**400** (294-498)	**886** (597-1230)	**1290** (935-1920)	566
Asians	11-12	**141** (109-183)	**128** (96.4-185)	**346** (251-486)	**760** (598-1030)	**1160** (892-1610)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 8.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 3-and 4-Methylhippuric acid (creatinine corrected) (2005 - 2006)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**260** (232-292)	**220** (182-265)	**496** (386-667)	**1120** (930-1310)	**1600** (1310-1980)	557
12-19 years	05-06	**211** (177-252)	**186** (164-239)	**386** (247-617)	**864** (471-1120)	**1120** (570-1310)	175
20 years and older	05-06	**270** (237-307)	**232** (169-292)	**503** (415-667)	**1140** (930-1430)	**1760** (1430-2590)	382
Males	05-06	**217** (187-252)	**184** (155-249)	**415** (284-514)	**908** (629-946)	**948** (910-1160)	274
Females	05-06	**308** (268-355)	**253** (203-300)	**657** (428-875)	**1500** (1020-1870)	**1980** (1450-2730)	283
Mexican Americans	05-06	**204** (179-233)	**184** (147-220)	**299** (233-460)	**621** (428-795)	**811** (471-1260)	118
Non-Hispanic blacks	05-06	**178** (139-228)	**140** (119-208)	**351** (212-459)	**583** (430-1080)	**1080** (484-1220)	156
Non-Hispanic whites	05-06	**285** (243-333)	**242** (184-295)	**551** (397-908)	**1240** (948-1600)	**1980** (1310-2710)	242

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 3-and 4-Methylhippuric acid (creatinine corrected) (2011 - 2012)

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**252** (232-275)	**212** (185-241)	**565** (510-617)	**1050** (982-1130)	**1540** (1370-1690)	2464
Age group							
6-11 years	11-12	**218** (192-247)	**189** (153-230)	**302** (258-376)	**603** (477-669)	**911** (603-1200)	393
12-19 years	11-12	**208** (178-244)	**175** (136-227)	**459** (314-585)	**812** (660-982)	**1130** (864-1500)	384
20 years and older	11-12	**264** (242-288)	**227** (195-253)	**612** (545-692)	**1120** (1050-1220)	**1610** (1420-1940)	1687
Gender							
Males	11-12	**236** (209-266)	**197** (170-229)	**511** (462-549)	**930** (806-1030)	**1420** (1110-1870)	1250
Females	11-12	**269** (244-297)	**226** (189-253)	**631** (551-723)	**1170** (1040-1360)	**1660** (1470-1830)	1214
Race/ethnicity							
Mexican Americans	11-12	**201** (159-253)	**144** (127-179)	**415** (284-515)	**798** (595-1020)	**1050** (792-1920)	313
Non-Hispanic blacks	11-12	**201** (180-223)	**182** (143-219)	**442** (387-496)	**763** (640-856)	**1030** (841-1360)	662
Non-Hispanic whites	11-12	**283** (262-306)	**245** (214-287)	**648** (553-723)	**1210** (1050-1360)	**1690** (1470-2050)	808
All Hispanics	11-12	**197** (168-230)	**145** (128-175)	**415** (284-492)	**792** (660-942)	**1040** (870-1350)	566
Asians	11-12	**189** (155-231)	**159** (130-203)	**447** (308-581)	**767** (634-1070)	**1110** (748-1380)	341

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary Phenylglyoxylic acid (2005 - 2006)

Metabolite of Ethylbenzene and Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**98.8** (88.8-110)	**144** (129-160)	**305** (272-328)	**483** (458-518)	**664** (602-700)	3346
12-19 years	05-06	**109** (91.2-131)	**157** (125-200)	**318** (288-352)	**474** (432-548)	**602** (499-713)	1029
20 years and older	05-06	**97.3** (87.3-108)	**140** (125-158)	**299** (267-325)	**484** (457-518)	**670** (604-722)	2312
Males	05-06	**115** (101-131)	**173** (156-191)	**329** (300-358)	**523** (480-593)	**699** (666-761)	1588
Females	05-06	**85.8** (75.3-97.7)	**118** (102-138)	**263** (240-300)	**452** (396-491)	**590** (507-660)	1755
Mexican Americans	05-06	**107** (84.2-137)	**150** (107-196)	**299** (260-333)	**448** (402-538)	**593** (534-672)	820
Non-Hispanic blacks	05-06	**122** (97.4-152)	**178** (145-212)	**334** (316-362)	**523** (476-577)	**660** (577-715)	899
Non-Hispanic whites	05-06	**93.4** (84.2-104)	**135** (118-152)	**297** (268-321)	**482** (453-518)	**689** (606-742)	1370

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 12.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Ethylbenzene_BiomonitoringSummary.html
Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary Phenylglyoxylic acid (2011 - 2012)

Metabolite of Ethylbenzene and Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**177** (165-191)	**199** (184-212)	**334** (314-359)	**491** (451-559)	**706** (630-789)	2466
Age group							
6-11 years	11-12	**161** (148-176)	**184** (161-202)	**282** (255-312)	**393** (347-456)	**508** (393-594)	394
12-19 years	11-12	**173** (152-197)	**193** (165-222)	**341** (307-392)	**468** (423-579)	**662** (505-872)	384
20 years and older	11-12	**180** (165-197)	**203** (184-219)	**341** (314-369)	**514** (448-596)	**732** (653-842)	1688
Gender							
Males	11-12	**201** (179-226)	**225** (198-248)	**369** (329-411)	**540** (468-588)	**789** (592-900)	1251
Females	11-12	**157** (143-172)	**171** (157-193)	**298** (273-332)	**447** (412-518)	**660** (502-771)	1215
Race/ethnicity							
Mexican Americans	11-12	**149** (123-181)	**166** (141-185)	**279** (209-347)	**423** (347-505)	**505** (431-706)	313
Non-Hispanic blacks	11-12	**217** (198-237)	**229** (204-255)	**369** (342-390)	**570** (489-647)	**771** (683-937)	662
Non-Hispanic whites	11-12	**180** (165-196)	**205** (184-220)	**340** (316-365)	**493** (439-585)	**726** (578-861)	810
All Hispanics	11-12	**154** (130-183)	**169** (146-192)	**283** (233-359)	**442** (393-558)	**604** (464-711)	566
Asians	11-12	**139** (120-160)	**161** (131-187)	**266** (221-302)	**398** (330-489)	**518** (410-617)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 12.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Ethylbenzene_BiomonitoringSummary.html
Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary Phenylglyoxylic acid (creatinine corrected) (2005 - 2006)

Metabolite of Ethylbenzene and Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**100** (83.6-120)	**140** (117-165)	**226** (201-243)	**297** (274-327)	**408** (317-519)	557
12-19 years	05-06	**89.4** (67.6-118)	**120** (94.4-163)	**200** (172-231)	**271** (228-407)	**407** (237-694)	175
20 years and older	05-06	**102** (84.6-123)	**143** (114-171)	**230** (206-249)	**302** (284-330)	**419** (317-561)	382
Males	05-06	**97.7** (81.5-117)	**143** (110-164)	**207** (191-226)	**271** (242-298)	**330** (271-423)	274
Females	05-06	**102** (80.9-129)	**140** (109-181)	**247** (226-267)	**317** (286-430)	**495** (322-694)	283
Mexican Americans	05-06	**86.0** (59.2-125)	**140** (92.2-175)	**209** (176-239)	**263** (188-682)	**327** (209-682)	118
Non-Hispanic blacks	05-06	**73.3** (53.5-100)	**103** (86.5-130)	**189** (144-215)	**257** (214-312)	**372** (256-561)	156
Non-Hispanic whites	05-06	**105** (84.0-131)	**143** (109-181)	**233** (201-258)	**308** (284-407)	**419** (317-694)	242

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Ethylbenzene_BiomonitoringSummary.html
Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary Phenylglyoxylic acid (creatinine corrected) (2011 - 2012)

Metabolite of Ethylbenzene and Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**202** (189-217)	**206** (195-219)	**285** (269-301)	**401** (377-426)	**518** (468-568)	2464
Age group							
6-11 years	11-12	**231** (219-244)	**239** (221-256)	**310** (297-323)	**411** (377-436)	**467** (416-502)	393
12-19 years	11-12	**168** (150-189)	**181** (167-193)	**239** (212-256)	**285** (261-336)	**368** (285-550)	384
20 years and older	11-12	**205** (191-220)	**207** (195-220)	**288** (272-310)	**413** (384-442)	**536** (482-602)	1687
Gender							
Males	11-12	**189** (174-205)	**194** (178-207)	**270** (244-299)	**400** (367-418)	**517** (481-538)	1250
Females	11-12	**217** (199-235)	**223** (202-239)	**291** (274-318)	**404** (366-460)	**536** (448-598)	1214
Race/ethnicity							
Mexican Americans	11-12	**168** (135-210)	**177** (160-198)	**240** (220-265)	**311** (267-413)	**413** (311-520)	313
Non-Hispanic blacks	11-12	**169** (160-179)	**171** (158-180)	**233** (221-243)	**308** (291-334)	**395** (355-431)	662
Non-Hispanic whites	11-12	**220** (207-234)	**224** (210-233)	**304** (281-336)	**426** (395-481)	**562** (481-660)	808
All Hispanics	11-12	**173** (150-199)	**179** (164-197)	**243** (226-265)	**317** (295-344)	**390** (354-476)	566
Asians	11-12	**186** (169-204)	**187** (173-208)	**257** (241-277)	**336** (315-381)	**419** (351-515)	341

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Ethylbenzene_BiomonitoringSummary.html
Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary 2-Thioxothiazolidine-4-carboxylic acid (2005 - 2006)

Metabolite of Carbon disulfide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**9.33** (8.41-10.3)	**7.49** (6.67-8.67)	**20.4** (18.3-23.0)	**54.0** (44.8-66.1)	**103** (84.9-126)	3345
12-19 years	05-06	**8.99** (7.84-10.3)	**7.47** (6.15-8.83)	**17.4** (14.5-21.6)	**51.4** (35.3-69.8)	**111** (66.7-142)	1032
20 years and older	05-06	**9.38** (8.43-10.4)	**7.49** (6.67-8.77)	**21.1** (19.1-23.7)	**54.2** (44.8-66.4)	**102** (84.9-126)	2310
Males	05-06	**10.8** (9.56-12.3)	**9.26** (7.69-10.7)	**24.1** (19.8-28.7)	**60.1** (47.3-73.9)	**127** (97.2-160)	1588
Females	05-06	**8.08** (7.22-9.05)	**6.39** (5.18-7.65)	**17.6** (14.5-20.8)	**47.0** (38.9-60.7)	**85.8** (69.8-108)	1755
Mexican Americans	05-06	**8.34** (7.02-9.89)	**6.91** (5.46-7.95)	**17.9** (13.0-23.1)	**51.8** (30.3-66.3)	**74.6** (55.2-114)	819
Non-Hispanic blacks	05-06	**14.4** (12.5-16.6)	**13.6** (11.2-15.6)	**34.9** (29.1-38.0)	**78.3** (67.5-99.4)	**145** (99.4-257)	899
Non-Hispanic whites	05-06	**8.73** (7.80-9.76)	**7.11** (6.05-8.19)	**18.7** (15.5-21.5)	**47.5** (38.9-61.8)	**97.2** (70.4-124)	1370

Limit of detection (LOD, see Data Analysis section) for Survey year 05-06 is 3.5.

Urinary 2-Thioxothiazolidine-4-carboxylic acid (2011 - 2012)

Metabolite of Carbon disulfide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**8.88** (8.00-9.85)	**6.91** (6.32-7.70)	**18.7** (15.2-23.3)	**52.9** (40.4-66.1)	**109** (74.8-144)	2466
Age group							
6-11 years	11-12	**6.70** (5.87-7.64)	**5.03** (4.17-5.87)	**11.2** (8.82-15.1)	**38.3** (25.3-51.9)	**59.7** (42.5-90.3)	394
12-19 years	11-12	**7.28** (5.89-9.00)	**5.94** (4.13-7.81)	**14.1** (8.39-22.2)	**40.3** (22.5-64.6)	**92.1** (40.3-137)	384
20 years and older	11-12	**9.44** (8.35-10.7)	**7.48** (6.59-8.26)	**20.6** (15.8-26.3)	**57.9** (43.7-70.6)	**118** (91.7-146)	1688
Gender							
Males	11-12	**10.3** (9.03-11.8)	**7.87** (7.02-9.01)	**24.3** (18.0-30.0)	**63.6** (47.9-96.5)	**123** (100-155)	1251
Females	11-12	**7.69** (6.88-8.59)	**5.99** (5.15-6.60)	**14.8** (11.7-19.2)	**38.0** (29.3-54.1)	**74.8** (51.0-133)	1215
Race/ethnicity							
Mexican Americans	11-12	**7.73** (6.58-9.08)	**6.12** (4.96-6.96)	**16.7** (9.52-23.7)	**43.9** (33.8-60.5)	**66.5** (53.5-104)	313
Non-Hispanic blacks	11-12	**12.2** (10.4-14.3)	**10.5** (8.16-13.1)	**26.8** (22.2-30.8)	**64.2** (52.5-75.9)	**125** (75.9-175)	662
Non-Hispanic whites	11-12	**8.56** (7.39-9.91)	**6.61** (5.74-7.78)	**17.0** (12.4-24.5)	**47.9** (35.3-71.0)	**111** (66.8-157)	810
All Hispanics	11-12	**7.37** (6.41-8.47)	**5.42** (4.76-6.85)	**14.5** (10.7-20.1)	**40.2** (31.0-56.3)	**67.4** (56.3-98.0)	566
Asians	11-12	**12.6** (10.3-15.5)	**8.97** (7.38-11.3)	**32.3** (21.7-46.9)	**121** (69.0-177)	**220** (129-532)	341

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 3.5.

Urinary 2-Thioxothiazolidine-4-carboxylic acid (creatinine corrected) (2005 - 2006)

Metabolite of Carbon disulfide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**10.2** (8.50-12.3)	**8.23** (6.68-10.0)	**19.7** (16.4-30.4)	**67.7** (43.1-105)	**129** (95.4-166)	559
12-19 years	05-06	**6.81** (5.15-9.00)	**5.88** (4.49-9.04)	**11.5** (8.86-18.3)	**31.8** (16.2-56.8)	**56.8** (18.3-285)	175
20 years and older	05-06	**11.0** (8.82-13.6)	**8.82** (6.68-11.3)	**23.5** (17.4-33.9)	**79.5** (44.8-115)	**142** (95.4-199)	383
Males	05-06	**10.2** (7.94-13.0)	**7.49** (5.44-10.0)	**18.4** (13.6-33.9)	**87.1** (44.8-142)	**177** (113-316)	274
Females	05-06	**10.3** (8.03-13.3)	**9.08** (6.86-10.7)	**22.2** (16.2-31.8)	**62.5** (31.1-105)	**105** (51.0-274)	285
Mexican Americans	05-06	**7.22** (4.81-10.8)	**5.09** (3.43-9.46)	**14.0** (9.31-33.6)	**58.9** (17.6-101)	**101** (33.9-223)	118
Non-Hispanic blacks	05-06	**9.45** (6.84-13.1)	**7.41** (4.66-13.7)	**22.4** (13.0-30.4)	**67.7** (33.9-142)	**142** (46.9-164)	156
Non-Hispanic whites	05-06	**10.4** (8.56-12.7)	**8.63** (6.77-10.3)	**19.0** (15.4-31.1)	**75.9** (38.6-113)	**129** (79.5-177)	243

Urinary 2-Thioxothiazolidine-4-carboxylic acid (creatinine corrected) (2011 - 2012)

Metabolite of Carbon disulfide

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**10.1** (9.09-11.3)	**8.23** (7.21-9.15)	**19.9** (17.0-22.9)	**53.6** (42.7-65.0)	**105** (82.0-136)	2464
Age group							
6-11 years	11-12	**9.35** (8.13-10.7)	**7.49** (6.31-9.88)	**17.3** (14.6-20.4)	**42.0** (30.1-54.5)	**91.4** (51.9-127)	393
12-19 years	11-12	**7.09** (5.81-8.65)	**5.68** (5.06-6.54)	**13.0** (7.92-25.0)	**32.2** (27.4-45.4)	**54.4** (30.3-93.0)	384
20 years and older	11-12	**10.8** (9.52-12.2)	**8.82** (7.64-9.93)	**21.2** (17.8-25.3)	**56.9** (46.3-73.3)	**127** (81.5-170)	1687
Gender							
Males	11-12	**9.68** (8.63-10.9)	**7.54** (6.37-9.01)	**20.4** (17.4-23.9)	**54.4** (43.8-71.0)	**107** (78.4-143)	1250
Females	11-12	**10.6** (9.25-12.1)	**8.70** (7.49-9.61)	**19.0** (15.5-24.2)	**50.9** (39.4-69.0)	**104** (69.0-144)	1214
Race/ethnicity							
Mexican Americans	11-12	**8.73** (7.11-10.7)	**6.86** (5.37-9.57)	**18.6** (11.5-25.9)	**34.7** (26.0-57.5)	**59.4** (32.9-186)	313
Non-Hispanic blacks	11-12	**9.53** (8.34-10.9)	**7.75** (6.86-9.39)	**18.4** (15.4-21.3)	**54.3** (36.5-69.0)	**103** (73.1-136)	662
Non-Hispanic whites	11-12	**10.4** (8.97-12.1)	**8.36** (7.01-9.88)	**20.7** (15.7-26.8)	**53.7** (41.0-79.5)	**107** (78.4-146)	808
All Hispanics	11-12	**8.25** (6.92-9.83)	**6.52** (5.57-8.23)	**16.7** (11.2-20.6)	**38.2** (29.3-52.6)	**63.9** (52.6-104)	566
Asians	11-12	**16.9** (14.0-20.3)	**13.0** (10.2-16.4)	**41.5** (30.3-50.9)	**127** (76.3-153)	**222** (141-410)	341

Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample

Statement of need

The Family Smoking Prevention and Tobacco Control Act of 2009 gave the Food and Drug Administration regulatory authority over tobacco products. In Section 907(a), the Act states that the Secretary of Health and Human Services shall establish tobacco product standards. These product standards will include provisions for the testing of tobacco products. To determine the effectiveness of these product standards, surveillance systems need to be in place before the standards are enacted to determine their impact on exposure among people who continue to use tobacco products. NHANES is an ideal source of human samples for assessing smokers in multiple locations around the country. NHANES will provide a robust dataset for identifying changes in exposure of smokers that follow enactment of tobacco product standards.

Special Sample in NHANES

Beginning with the NHANES 2011-2012 survey period, a Special Sample was selected to allow measurement of certain groups of chemicals that are associated with tobacco smoke exposure. The Special Sample consisted of adults (defined as ages 20 years and older) in the representative sample for that chemical group as well as all adults who reported that they were currently cigarette smokers. Adult cigarette smokers were included if they answered "Yes" to the following question: "Have you smoked at least 100 cigarettes in your life?" and then, confirmed that they smoke every day (SMQ020=1 and SMQ040=1 in the Smoking-Cigarette Use questionnaire, SMQ_G, available at: http://www.cdc.gov/nchs/nhanes/nhanes2011-2012/SMQ_G.htm).

Special Sample in the *Updated Tables*

Cigarette smokers were defined by their responses to the Smoking-Cigarette Use (SMQ_G) questionnaire: "Have you smoked at least 100 cigarettes in your life?" (SMQ020=1), and then, confirmed that they smoke every day (SMQ040=1) or that they smoke some days (SMQ040=2). The nonsmoker category was comprised of the remaining adults in the Special Sample who were not categorized as smokers of any tobacco products. We excluded any adult who reported that they did not smoke cigarettes but used any of the following non-cigarette tobacco products: cigars; pipes; chewing tobacco; snuff; or nicotine patch, gum or other replacement product. This resulted in exclusion of 3.54% (weighted) from the total sample for NHANES 2011-2012. Furthermore, the number of adults who reported use of non-cigarette tobacco products was too few to create separate categories for these products. We also did not use serum cotinine concentrations because results were not available for all adults in the sample. In NHANES 2011-2012, 4.17% (weighted) of the sample were missing serum cotinine results.

In the data tables, results are displayed separately for adult cigarette smokers and nonsmokers. Each data table displays geometric mean and selected percentiles by three categories: total; age group (20-49 years, 50 years and older); and gender (male, female). Racial/ethnic categories are not presented because the sample sizes were too small in one or more of the categories. Future *Updated Tables* will present data tables for additional chemical groups that were measured in the Special Sample.

Urinary Antimony

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.062** (.053-.072)	**.056** (.043-.071)	**.099** (.084-.115)	**.168** (.142-.194)	**.233** (.178-.301)	897
Age group							
20-49 years	11-12	**.066** (.059-.075)	**.062** (.051-.072)	**.109** (.091-.121)	**.175** (.149-.206)	**.239** (.194-.293)	537
50 years and older	11-12	*	**.046** (<LOD-.066)	**.090** (.063-.114)	**.156** (.110-.233)	**.233** (.134-.406)	360
Gender							
Males	11-12	**.066** (.055-.078)	**.059** (.043-.077)	**.110** (.089-.129)	**.169** (.148-.224)	**.270** (.180-.406)	539
Females	11-12	**.057** (.049-.067)	**.053** (<LOD-.066)	**.089** (.070-.114)	**.155** (.115-.194)	**.207** (.149-.264)	358
Nonsmokers							
Total	11-12	*	**.042** (<LOD-.048)	**.072** (.063-.081)	**.120** (.103-.140)	**.167** (.149-.208)	1332
Age group							
20-49 years	11-12	*	**.046** (<LOD-.052)	**.078** (.066-.091)	**.137** (.118-.156)	**.179** (.156-.268)	666
50 years and older	11-12	*	**< LOD**	**.063** (.054-.075)	**.103** (.091-.122)	**.149** (.117-.196)	666
Gender							
Males	11-12	*	**.048** (<LOD-.054)	**.081** (.069-.089)	**.135** (.103-.158)	**.185** (.149-.287)	631
Females	11-12	*	**< LOD**	**.064** (.057-.074)	**.116** (.094-.127)	**.157** (.125-.184)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.041.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Antimony (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**.063** (<LOD-.070)	**.101** (.093-.118)	**.171** (.141-.207)	**.242** (.181-.290)	897
Age group							
20-49 years	11-12	*	**.065** (<LOD-.071)	**.101** (.090-.117)	**.171** (.133-.207)	**.242** (.175-.306)	537
50 years and older	11-12	*	**< LOD**	**.097** (.076-.138)	**.171** (.138-.215)	**.256** (.168-.344)	360
Gender							
Males	11-12	*	**.058** (<LOD-.064)	**.096** (.083-.118)	**.171** (.134-.242)	**.261** (.171-.351)	539
Females	11-12	*	**< LOD**	**.107** (.094-.137)	**.171** (.141-.200)	**.207** (.161-.344)	358
Nonsmokers							
Total	11-12	*	**.055** (.050-.059)	**.088** (.075-.100)	**.149** (.126-.170)	**.214** (.175-.240)	1331
Age group							
20-49 years	11-12	*	**.055** (.048-.060)	**.088** (.071-.107)	**.161** (.126-.207)	**.224** (.175-.297)	665
50 years and older	11-12	*	**.056** (<LOD-.061)	**.088** (.074-.101)	**.132** (.118-.155)	**.183** (.152-.224)	666
Gender							
Males	11-12	*	**.047** (.040-.049)	**.066** (.061-.073)	**.108** (.089-.126)	**.151** (.125-.186)	630
Females	11-12	*	**.065** (<LOD-.071)	**.104** (.088-.116)	**.171** (.143-.207)	**.224** (.181-.284)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Total Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**6.24** (5.04-7.72)	**5.68** (4.32-6.93)	**12.4** (9.40-17.2)	**30.5** (19.9-39.8)	**49.8** (33.2-111)	897
Age group							
20-49 years	11-12	**6.32** (5.10-7.83)	**5.80** (4.38-7.62)	**12.7** (9.76-16.8)	**26.8** (20.3-34.9)	**44.5** (32.0-82.1)	537
50 years and older	11-12	**6.09** (4.56-8.14)	**4.72** (3.96-6.40)	**12.0** (7.60-19.7)	**35.9** (15.1-121)	**80.5** (29.0-144)	360
Gender							
Males	11-12	**6.56** (5.18-8.32)	**5.71** (4.13-8.26)	**14.3** (9.48-19.9)	**33.2** (21.1-44.1)	**45.1** (39.8-91.1)	539
Females	11-12	**5.85** (4.71-7.27)	**5.51** (3.97-6.74)	**11.5** (7.58-15.9)	**26.2** (15.9-49.8)	**62.1** (22.4-211)	358
Nonsmokers							
Total	11-12	**7.35** (6.24-8.64)	**6.57** (5.34-7.99)	**14.1** (11.4-18.7)	**34.2** (25.9-42.2)	**55.2** (42.2-82.0)	1332
Age group							
20-49 years	11-12	**7.41** (6.29-8.72)	**6.59** (5.42-7.86)	**13.7** (11.2-18.6)	**35.7** (25.0-45.6)	**54.9** (46.3-83.2)	666
50 years and older	11-12	**7.28** (5.89-9.00)	**6.57** (5.05-8.86)	**14.4** (10.5-20.5)	**34.2** (21.1-50.6)	**55.8** (35.8-82.8)	666
Gender							
Males	11-12	**8.26** (6.65-10.3)	**7.43** (5.83-10.1)	**16.0** (11.9-21.2)	**34.2** (25.6-42.2)	**54.2** (39.0-82.8)	631
Females	11-12	**6.69** (5.73-7.80)	**5.75** (5.01-7.26)	**13.0** (10.2-17.5)	**32.8** (24.4-45.9)	**55.3** (44.5-84.3)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.25.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Total Arsenic (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**6.80** (5.96-7.76)	**5.52** (4.70-6.84)	**10.6** (9.08-13.6)	**22.8** (19.1-30.8)	**43.6** (24.7-91.3)	897
Age group							
20-49 years	11-12	**6.47** (5.64-7.43)	**5.31** (4.42-6.87)	**10.2** (8.48-12.4)	**21.7** (15.2-29.5)	**38.6** (21.7-103)	537
50 years and older	11-12	**7.39** (5.99-9.12)	**5.85** (4.82-7.24)	**12.4** (8.78-19.5)	**26.1** (19.6-50.6)	**70.5** (20.4-98.0)	360
Gender							
Males	11-12	**6.34** (5.45-7.38)	**5.18** (4.63-6.45)	**10.3** (8.27-13.5)	**20.7** (15.6-26.5)	**30.7** (21.7-70.5)	539
Females	11-12	**7.43** (6.13-9.00)	**5.88** (4.42-7.48)	**10.9** (8.54-14.2)	**27.8** (16.4-58.2)	**65.0** (24.5-119)	358
Nonsmokers							
Total	11-12	**8.49** (7.33-9.83)	**7.17** (6.16-8.59)	**16.2** (12.9-20.3)	**33.7** (28.2-43.8)	**52.8** (40.5-71.6)	1331
Age group							
20-49 years	11-12	**7.96** (6.87-9.24)	**6.87** (5.54-8.50)	**15.2** (11.4-20.8)	**31.6** (25.8-39.4)	**46.5** (33.7-70.1)	665
50 years and older	11-12	**9.09** (7.29-11.3)	**7.57** (6.12-9.71)	**18.2** (12.8-24.6)	**37.5** (27.9-52.8)	**53.5** (37.5-94.6)	666
Gender							
Males	11-12	**7.20** (5.82-8.89)	**6.29** (5.01-8.07)	**13.9** (10.6-17.2)	**31.2** (20.2-41.9)	**48.7** (32.8-69.6)	630
Females	11-12	**9.69** (8.61-10.9)	**7.96** (6.87-9.31)	**19.1** (13.9-24.4)	**38.2** (28.7-48.6)	**63.6** (45.9-86.7)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Arsenic (V) acid

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	892
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.870** (<LOD-2.11)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1332
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.890** (<LOD-1.08)	631
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.87.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Arsenic (V) acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	892
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	536
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	**3.44** (<LOD-3.65)	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1331
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	**2.95** (<LOD-4.77)	665
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	666
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	630
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Arsenobetaine

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**3.44** (1.87-4.77)	**14.6** (8.72-23.6)	**26.6** (17.7-75.0)	892
Age group							
20-49 years	11-12	*	**< LOD**	**2.82** (1.79-4.49)	**14.6** (7.50-24.2)	**25.9** (15.6-51.6)	536
50 years and older	11-12	*	**< LOD**	**4.18** (1.27-8.18)	**15.3** (7.70-46.5)	**46.5** (9.98-114)	356
Gender							
Males	11-12	*	**< LOD**	**3.56** (1.58-5.52)	**13.7** (8.77-22.6)	**25.9** (16.7-56.8)	536
Females	11-12	*	**< LOD**	**3.21** (1.87-5.33)	**14.9** (6.74-25.7)	**30.1** (11.9-138)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**5.84** (4.37-7.42)	**18.7** (13.3-26.2)	**36.9** (24.0-59.6)	1332
Age group							
20-49 years	11-12	*	**< LOD**	**4.98** (3.19-6.54)	**18.7** (10.6-23.6)	**36.9** (24.1-53.1)	666
50 years and older	11-12	*	**1.55** (<LOD-2.34)	**7.21** (3.94-10.5)	**18.6** (11.6-35.2)	**38.8** (19.2-68.3)	666
Gender							
Males	11-12	*	**1.29** (<LOD-2.08)	**6.00** (3.83-8.40)	**19.4** (11.6-30.6)	**36.9** (23.3-63.3)	631
Females	11-12	*	**< LOD**	**5.81** (4.06-7.39)	**18.7** (13.1-23.6)	**36.9** (23.2-58.3)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.19.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Arsenobetaine (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**4.42** (3.36-5.38)	**13.1** (10.2-18.8)	**29.1** (16.5-65.5)	892
Age group							
20-49 years	11-12	*	**< LOD**	**4.42** (3.08-5.38)	**11.6** (6.68-21.5)	**26.8** (11.5-52.8)	536
50 years and older	11-12	*	**1.79** (<LOD-2.29)	**4.67** (2.85-9.20)	**15.4** (11.9-39.6)	**56.0** (13.0-82.1)	356
Gender							
Males	11-12	*	**1.31** (<LOD-1.59)	**4.42** (2.83-4.94)	**12.3** (6.67-13.4)	**18.0** (12.8-51.4)	536
Females	11-12	*	**< LOD**	**4.67** (2.90-8.27)	**16.9** (8.09-30.3)	**33.4** (16.5-82.1)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**7.31** (5.06-10.0)	**21.7** (14.1-33.8)	**39.6** (27.7-46.8)	1331
Age group							
20-49 years	11-12	*	**< LOD**	**6.02** (4.00-10.0)	**16.7** (14.6-23.7)	**33.7** (21.7-42.6)	665
50 years and older	11-12	*	**< LOD**	**8.07** (4.79-13.2)	**26.1** (14.1-42.6)	**43.4** (26.1-76.9)	666
Gender							
Males	11-12	*	**< LOD**	**4.96** (3.23-9.10)	**19.9** (10.2-30.1)	**35.7** (20.7-52.1)	630
Females	11-12	*	**< LOD**	**8.55** (6.48-11.9)	**23.9** (16.6-36.9)	**41.4** (29.3-66.4)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Arsenocholine

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	892
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	536
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	.550 (<LOD-4.53)	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1332
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	666
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	666
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	631
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.28.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenocholine (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	892
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	536
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1331
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	665
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	666
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	**.625** (<LOD-.769)	630
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenous (III) acid

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**.780** (.640-1.01)	**1.08** (.810-1.48)	892
Age group							
20-49 years	11-12	*	**< LOD**	**.520** (<LOD-.690)	**.970** (.680-1.27)	**1.29** (1.00-1.60)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**.520** (<LOD-.790)	**.670** (.530-.790)	356
Gender							
Males	11-12	*	**< LOD**	**.530** (<LOD-.690)	**.970** (.690-1.31)	**1.39** (.990-1.78)	536
Females	11-12	*	**< LOD**	**< LOD**	**.560** (<LOD-.720)	**.690** (.530-1.08)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**.490** (<LOD-.580)	**.820** (.740-.920)	**1.07** (.930-1.21)	1332
Age group							
20-49 years	11-12	*	**< LOD**	**.580** (.490-.710)	**.890** (.810-1.08)	**1.27** (1.05-1.56)	666
50 years and older	11-12	*	**< LOD**	**< LOD**	**.700** (.550-.830)	**.920** (.700-1.12)	666
Gender							
Males	11-12	*	**< LOD**	**.590** (.500-.700)	**.960** (.840-1.11)	**1.18** (1.08-1.47)	631
Females	11-12	*	**< LOD**	**< LOD**	**.740** (.560-.810)	**.860** (.800-.990)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.48.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Arsenous (III) acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**.762** (<LOD-.895)	**1.37** (1.00-1.79)	**1.89** (1.42-2.13)	892
Age group							
20-49 years	11-12	*	**< LOD**	**.756** (.587-.946)	**1.42** (1.00-1.89)	**2.00** (1.36-2.83)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.31** (.919-1.55)	**1.55** (1.31-2.13)	356
Gender							
Males	11-12	*	**< LOD**	**.723** (.567-.842)	**1.35** (.911-1.79)	**1.89** (1.31-2.83)	536
Females	11-12	*	**< LOD**	**< LOD**	**1.37** (1.00-1.70)	**1.74** (1.37-2.13)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.36** (1.21-1.51)	**1.81** (1.55-2.00)	1331
Age group							
20-49 years	11-12	*	**< LOD**	**.810** (<LOD-.919)	**1.48** (1.17-1.81)	**1.95** (1.61-2.43)	665
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.26** (<LOD-1.42)	**1.67** (1.36-2.00)	666
Gender							
Males	11-12	*	**< LOD**	**.654** (<LOD-.708)	**1.01** (.850-1.17)	**1.48** (1.17-1.67)	630
Females	11-12	*	**< LOD**	**< LOD**	**1.51** (<LOD-1.81)	**2.13** (1.64-2.62)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Dimethylarsinic acid

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**3.27** (2.92-3.67)	**2.93** (2.57-3.30)	**5.83** (4.57-7.23)	**9.97** (7.89-13.4)	**14.9** (10.5-23.3)	892
Age group							
20-49 years	11-12	**3.26** (2.86-3.73)	**3.12** (2.62-3.84)	**5.84** (4.70-7.23)	**9.11** (7.23-10.9)	**12.4** (9.35-15.6)	536
50 years and older	11-12	**3.29** (2.77-3.91)	**2.60** (2.44-3.05)	**5.67** (3.97-9.85)	**11.8** (6.59-28.8)	**20.2** (9.97-30.1)	356
Gender							
Males	11-12	**3.45** (3.07-3.87)	**3.05** (2.64-3.75)	**6.21** (4.68-8.84)	**10.9** (9.35-14.9)	**16.7** (11.5-30.1)	536
Females	11-12	**3.07** (2.67-3.53)	**2.76** (2.34-3.29)	**4.85** (4.01-6.73)	**9.11** (6.93-11.8)	**11.8** (8.92-20.2)	356
Nonsmokers							
Total	11-12	**3.57** (3.27-3.90)	**3.44** (3.00-3.87)	**5.96** (5.27-6.85)	**10.1** (8.64-12.1)	**14.6** (12.2-17.2)	1332
Age group							
20-49 years	11-12	**3.74** (3.34-4.19)	**3.58** (3.19-4.14)	**6.78** (5.75-7.68)	**10.8** (9.32-12.7)	**16.2** (12.3-19.2)	666
50 years and older	11-12	**3.40** (3.09-3.75)	**3.15** (2.87-3.66)	**5.50** (4.52-6.61)	**9.02** (7.49-11.1)	**14.0** (9.93-17.8)	666
Gender							
Males	11-12	**4.04** (3.60-4.52)	**3.93** (3.34-4.67)	**6.54** (5.50-7.84)	**11.3** (8.90-13.7)	**16.2** (13.2-17.8)	631
Females	11-12	**3.24** (2.94-3.57)	**2.97** (2.61-3.44)	**5.52** (4.61-6.24)	**9.52** (8.10-10.9)	**14.0** (10.7-17.5)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.8.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Dimethylarsinic acid (creatinine corrected)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**3.56** (3.32-3.81)	**3.33** (3.10-3.70)	**5.77** (5.08-6.35)	**8.47** (7.45-10.1)	**10.6** (9.38-12.7)	892
Age group							
20-49 years	11-12	**3.34** (3.05-3.67)	**3.18** (2.77-3.67)	**5.25** (4.45-6.05)	**7.47** (6.33-9.17)	**9.49** (7.47-12.6)	536
50 years and older	11-12	**3.95** (3.48-4.48)	**3.74** (3.14-4.23)	**6.83** (4.88-7.94)	**10.1** (7.00-20.2)	**13.0** (10.1-23.8)	356
Gender							
Males	11-12	**3.34** (3.12-3.56)	**3.12** (2.82-3.34)	**5.29** (4.61-6.33)	**8.66** (7.30-10.1)	**10.6** (8.55-13.0)	536
Females	11-12	**3.86** (3.41-4.37)	**3.74** (3.20-4.27)	**6.04** (4.78-7.00)	**8.10** (6.83-9.58)	**11.7** (8.10-20.7)	356
Nonsmokers							
Total	11-12	**4.13** (3.89-4.38)	**3.88** (3.58-4.20)	**6.35** (5.63-7.32)	**10.7** (9.66-12.2)	**14.8** (12.8-16.2)	1331
Age group							
20-49 years	11-12	**4.02** (3.74-4.31)	**3.91** (3.50-4.30)	**6.52** (5.77-7.38)	**10.6** (9.42-12.4)	**14.1** (11.9-15.9)	665
50 years and older	11-12	**4.25** (3.86-4.68)	**3.85** (3.46-4.39)	**6.08** (5.29-7.47)	**11.3** (9.37-12.8)	**15.4** (11.9-19.7)	666
Gender							
Males	11-12	**3.51** (3.18-3.89)	**3.31** (3.03-3.74)	**5.31** (4.51-6.22)	**8.70** (7.12-10.0)	**12.8** (9.37-15.8)	630
Females	11-12	**4.69** (4.43-4.97)	**4.54** (4.23-4.70)	**7.61** (7.00-8.60)	**11.9** (10.5-14.0)	**15.9** (14.0-17.3)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Monomethylarsonic acid

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.42** (1.14-1.82)	**2.02** (1.50-2.18)	892
Age group							
20-49 years	11-12	*	**< LOD**	**.920** (<LOD-1.07)	**1.61** (1.29-2.02)	**2.12** (1.56-2.38)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.12** (.950-1.44)	**1.45** (1.12-1.88)	356
Gender							
Males	11-12	*	**< LOD**	**.960** (<LOD-1.14)	**1.67** (1.38-2.12)	**2.13** (1.73-2.40)	536
Females	11-12	*	**< LOD**	**< LOD**	**1.11** (1.01-1.38)	**1.52** (1.11-2.02)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.36** (1.18-1.57)	**1.85** (1.58-2.07)	1332
Age group							
20-49 years	11-12	*	**< LOD**	**.950** (<LOD-1.09)	**1.58** (1.30-1.88)	**2.04** (1.85-2.48)	666
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.13** (.970-1.41)	**1.53** (1.28-1.79)	666
Gender							
Males	11-12	*	**< LOD**	**1.00** (<LOD-1.25)	**1.60** (1.29-1.89)	**2.07** (1.85-2.56)	631
Females	11-12	*	**< LOD**	**< LOD**	**1.15** (.990-1.42)	**1.55** (1.42-1.83)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.89.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Monomethylarsonic acid (creatinine corrected)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**2.42** (2.02-2.89)	**3.50** (2.63-3.71)	892
Age group							
20-49 years	11-12	*	**< LOD**	**1.26** (<LOD-1.54)	**2.52** (1.75-3.32)	**3.71** (2.45-4.20)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**2.17** (1.91-2.63)	**2.92** (2.42-3.50)	356
Gender							
Males	11-12	*	**< LOD**	**1.21** (<LOD-1.37)	**2.17** (1.47-2.89)	**3.50** (2.17-3.71)	536
Females	11-12	*	**< LOD**	**< LOD**	**2.42** (2.10-2.92)	**3.15** (2.42-3.94)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**2.25** (1.95-2.52)	**2.74** (2.42-3.50)	1331
Age group							
20-49 years	11-12	*	**< LOD**	**1.43** (<LOD-1.60)	**2.33** (1.91-2.74)	**3.15** (2.52-3.94)	665
50 years and older	11-12	*	**< LOD**	**< LOD**	**2.25** (1.85-2.52)	**2.63** (2.33-3.32)	666
Gender							
Males	11-12	*	**< LOD**	**1.07** (<LOD-1.17)	**1.68** (1.43-1.80)	**2.13** (1.80-2.42)	630
Females	11-12	*	**< LOD**	**< LOD**	**2.63** (2.33-2.86)	**3.50** (2.69-4.85)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Trimethylarsine oxide

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	892
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	536
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1332
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	666
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	666
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	631
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.25.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Trimethylarsine oxide (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	892
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	536
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	356
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1331
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	665
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	666
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	630
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html**

Urinary Barium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.17** (1.06-1.29)	**1.28** (1.08-1.40)	**2.36** (1.98-2.77)	**3.78** (3.28-4.25)	**5.19** (3.98-6.20)	897
Age group							
20-49 years	11-12	**1.24** (1.13-1.37)	**1.35** (1.04-1.54)	**2.55** (1.98-3.22)	**3.88** (3.37-4.26)	**4.97** (3.98-6.52)	537
50 years and older	11-12	**1.06** (.901-1.25)	**1.26** (.930-1.41)	**2.20** (1.89-2.43)	**3.41** (2.65-5.19)	**5.34** (3.49-10.5)	360
Gender							
Males	11-12	**1.27** (1.07-1.49)	**1.34** (.990-1.71)	**2.51** (1.89-3.25)	**3.92** (3.28-5.49)	**5.80** (3.96-9.25)	539
Females	11-12	**1.06** (.949-1.18)	**1.11** (.930-1.39)	**2.33** (1.89-2.55)	**3.28** (2.55-3.88)	**4.35** (3.78-5.52)	358
Nonsmokers							
Total	11-12	**1.12** (1.03-1.22)	**1.18** (1.06-1.28)	**2.20** (1.98-2.46)	**3.85** (3.45-4.29)	**5.13** (4.59-5.57)	1332
Age group							
20-49 years	11-12	**1.16** (1.04-1.28)	**1.21** (1.08-1.40)	**2.24** (1.94-2.60)	**3.74** (3.26-4.31)	**4.68** (4.34-5.52)	666
50 years and older	11-12	**1.08** (.961-1.21)	**1.09** (.890-1.29)	**2.17** (1.77-2.53)	**3.93** (3.01-5.13)	**5.46** (4.62-7.13)	666
Gender							
Males	11-12	**1.23** (1.08-1.41)	**1.28** (1.14-1.42)	**2.25** (1.94-2.71)	**3.93** (3.45-4.40)	**5.96** (4.40-7.62)	631
Females	11-12	**1.03** (.920-1.16)	**1.06** (.910-1.19)	**2.16** (1.61-2.57)	**3.63** (3.20-4.05)	**5.05** (3.96-5.52)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Barium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.28** (1.11-1.47)	**1.32** (1.15-1.48)	**2.14** (1.86-2.81)	**4.17** (3.00-5.76)	**6.20** (4.30-7.36)	897
Age group							
20-49 years	11-12	**1.27** (1.08-1.49)	**1.28** (1.04-1.43)	**2.22** (1.70-2.92)	**4.30** (2.92-5.76)	**5.76** (4.13-7.22)	537
50 years and older	11-12	**1.29** (1.12-1.48)	**1.42** (1.30-1.55)	**2.00** (1.89-2.78)	**3.89** (3.12-6.66)	**6.66** (3.43-7.36)	360
Gender							
Males	11-12	**1.22** (1.05-1.42)	**1.30** (1.06-1.47)	**2.03** (1.78-2.71)	**3.73** (2.71-5.76)	**5.76** (3.46-8.39)	539
Females	11-12	**1.34** (1.09-1.66)	**1.35** (1.15-1.69)	**2.19** (1.74-3.62)	**4.81** (2.89-6.66)	**6.41** (3.89-10.5)	358
Nonsmokers							
Total	11-12	**1.29** (1.18-1.41)	**1.30** (1.16-1.43)	**2.28** (1.98-2.70)	**3.83** (3.49-4.26)	**5.89** (4.37-8.32)	1331
Age group							
20-49 years	11-12	**1.24** (1.09-1.41)	**1.27** (1.10-1.44)	**2.04** (1.75-2.40)	**3.57** (3.06-4.12)	**5.17** (3.85-6.84)	665
50 years and older	11-12	**1.35** (1.21-1.50)	**1.35** (1.17-1.54)	**2.64** (2.15-2.96)	**4.23** (3.48-5.11)	**6.83** (4.77-9.68)	666
Gender							
Males	11-12	**1.07** (.958-1.21)	**1.04** (.893-1.19)	**1.86** (1.64-2.10)	**3.20** (2.71-3.66)	**4.26** (3.48-5.89)	630
Females	11-12	**1.50** (1.35-1.65)	**1.46** (1.36-1.55)	**2.69** (2.27-3.09)	**4.71** (3.56-5.68)	**6.84** (5.11-9.00)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html**

Urinary Cadmium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.308** (.265-.358)	**.346** (.282-.419)	**.670** (.559-.783)	**1.29** (1.03-1.58)	**1.85** (1.56-2.33)	897
Age group							
20-49 years	11-12	**.221** (.184-.266)	**.250** (.190-.298)	**.521** (.391-.607)	**.840** (.684-1.10)	**1.27** (1.01-1.49)	537
50 years and older	11-12	**.533** (.470-.606)	**.540** (.450-.629)	**1.02** (.783-1.33)	**1.85** (1.52-2.53)	**3.50** (2.07-4.26)	360
Gender							
Males	11-12	**.312** (.264-.369)	**.362** (.296-.421)	**.684** (.552-.834)	**1.31** (1.02-1.69)	**1.69** (1.27-2.09)	539
Females	11-12	**.303** (.246-.373)	**.323** (.259-.443)	**.643** (.523-.722)	**1.25** (.783-1.98)	**2.05** (1.24-2.50)	358
Nonsmokers							
Total	11-12	**.172** (.157-.188)	**.175** (.161-.189)	**.308** (.279-.348)	**.607** (.518-.674)	**.834** (.732-1.02)	1332
Age group							
20-49 years	11-12	**.128** (.113-.146)	**.132** (.111-.150)	**.231** (.185-.278)	**.458** (.338-.578)	**.630** (.543-.795)	666
50 years and older	11-12	**.235** (.212-.261)	**.228** (.217-.258)	**.392** (.330-.456)	**.759** (.607-.872)	**1.05** (.834-1.52)	666
Gender							
Males	11-12	**.165** (.150-.182)	**.169** (.156-.185)	**.280** (.245-.330)	**.525** (.412-.630)	**.822** (.595-.873)	631
Females	11-12	**.178** (.158-.200)	**.183** (.148-.206)	**.334** (.294-.392)	**.640** (.575-.765)	**.923** (.780-1.33)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.056.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html**

Urinary Cadmium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.336** (.295-.383)	**.350** (.307-.416)	**.631** (.551-.735)	**1.13** (1.00-1.28)	**1.48** (1.30-1.72)	897
Age group							
20-49 years	11-12	**.227** (.199-.258)	**.235** (.211-.258)	**.416** (.342-.460)	**.631** (.551-.724)	**.935** (.727-1.14)	537
50 years and older	11-12	**.647** (.581-.720)	**.594** (.524-.746)	**1.05** (.850-1.27)	**1.68** (1.38-1.86)	**2.08** (1.72-2.24)	360
Gender							
Males	11-12	**.302** (.254-.359)	**.333** (.262-.413)	**.565** (.470-.675)	**.932** (.706-1.19)	**1.26** (.907-1.72)	539
Females	11-12	**.385** (.332-.446)	**.367** (.327-.466)	**.735** (.594-.873)	**1.34** (1.06-1.68)	**1.72** (1.38-2.45)	358
Nonsmokers							
Total	11-12	**.199** (.183-.216)	**.188** (.177-.211)	**.352** (.317-.394)	**.562** (.503-.633)	**.845** (.622-1.01)	1331
Age group							
20-49 years	11-12	**.138** (.124-.154)	**.133** (.121-.150)	**.222** (.195-.268)	**.384** (.308-.470)	**.538** (.421-.741)	665
50 years and older	11-12	**.294** (.271-.318)	**.296** (.258-.328)	**.459** (.424-.521)	**.713** (.583-.917)	**1.03** (.870-1.16)	666
Gender							
Males	11-12	**.144** (.127-.162)	**.139** (.124-.157)	**.228** (.188-.289)	**.406** (.324-.524)	**.542** (.463-.678)	630
Females	11-12	**.257** (.233-.284)	**.270** (.241-.286)	**.442** (.396-.473)	**.660** (.563-.871)	**1.00** (.860-1.16)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html**

Urinary Cesium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**3.75** (3.47-4.06)	**4.04** (3.60-4.52)	**6.38** (5.94-6.68)	**8.77** (7.81-9.96)	**11.1** (9.24-11.9)	897
Age group							
20-49 years	11-12	**3.71** (3.41-4.03)	**4.14** (3.61-4.55)	**6.41** (5.70-7.00)	**8.56** (7.54-10.5)	**10.8** (7.81-11.9)	537
50 years and older	11-12	**3.82** (3.40-4.30)	**4.03** (3.39-4.53)	**6.37** (5.60-6.97)	**9.33** (7.92-10.8)	**11.2** (9.11-11.4)	360
Gender							
Males	11-12	**3.90** (3.63-4.19)	**4.28** (3.56-5.13)	**6.89** (6.34-7.18)	**8.56** (7.81-10.6)	**11.2** (8.27-11.9)	539
Females	11-12	**3.57** (3.05-4.18)	**3.98** (3.42-4.25)	**5.91** (4.79-6.63)	**9.20** (6.73-11.0)	**11.0** (7.19-13.1)	358
Nonsmokers							
Total	11-12	**3.88** (3.66-4.11)	**4.11** (3.90-4.42)	**6.38** (5.96-6.89)	**9.08** (8.57-9.44)	**10.6** (9.76-11.4)	1331
Age group							
20-49 years	11-12	**3.69** (3.38-4.03)	**3.97** (3.72-4.43)	**6.41** (5.83-6.99)	**9.08** (8.15-9.48)	**10.5** (9.48-11.4)	666
50 years and older	11-12	**4.09** (3.81-4.38)	**4.28** (3.90-4.59)	**6.26** (5.73-7.10)	**8.87** (8.06-10.2)	**10.6** (9.44-13.0)	665
Gender							
Males	11-12	**4.46** (4.19-4.75)	**4.78** (4.31-5.21)	**6.76** (6.24-7.42)	**9.18** (8.51-9.88)	**10.8** (9.48-12.8)	630
Females	11-12	**3.47** (3.21-3.75)	**3.62** (3.41-3.90)	**5.93** (5.31-6.76)	**8.62** (7.79-9.48)	**10.4** (9.48-11.7)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.12.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cesium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**4.09** (3.73-4.49)	**3.94** (3.69-4.30)	**5.55** (5.27-5.94)	**8.27** (6.59-10.2)	**10.6** (7.74-14.4)	897
Age group							
20-49 years	11-12	**3.80** (3.41-4.23)	**3.71** (3.35-4.15)	**5.29** (4.53-5.82)	**7.89** (5.76-10.2)	**10.2** (7.48-14.4)	537
50 years and older	11-12	**4.64** (4.28-5.02)	**4.47** (4.09-4.88)	**6.10** (5.55-6.84)	**9.36** (7.16-11.5)	**11.5** (7.41-32.4)	360
Gender							
Males	11-12	**3.77** (3.37-4.22)	**3.70** (3.26-4.19)	**4.98** (4.47-5.62)	**6.49** (5.67-9.89)	**10.2** (6.15-14.4)	539
Females	11-12	**4.53** (4.12-4.98)	**4.32** (4.09-4.70)	**6.62** (5.55-7.77)	**9.27** (7.77-11.5)	**11.5** (8.29-15.0)	358
Nonsmokers							
Total	11-12	**4.48** (4.22-4.75)	**4.43** (4.20-4.74)	**6.16** (5.71-6.64)	**8.22** (7.43-8.92)	**10.2** (8.63-11.9)	1330
Age group							
20-49 years	11-12	**3.97** (3.78-4.16)	**4.00** (3.69-4.28)	**5.57** (5.09-5.85)	**6.88** (6.47-7.35)	**8.10** (7.43-8.73)	665
50 years and older	11-12	**5.11** (4.63-5.63)	**4.88** (4.33-5.61)	**7.19** (5.92-8.22)	**9.48** (8.25-10.7)	**12.1** (10.2-13.5)	665
Gender							
Males	11-12	**3.88** (3.57-4.21)	**3.75** (3.51-4.22)	**5.23** (4.71-6.07)	**7.64** (6.43-8.48)	**8.53** (8.01-10.2)	629
Females	11-12	**5.02** (4.77-5.29)	**4.98** (4.76-5.20)	**6.62** (6.25-7.17)	**8.70** (8.10-9.98)	**11.9** (9.47-13.5)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html**

Urinary Cobalt

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.313** (.290-.338)	**.306** (.281-.335)	**.546** (.487-.593)	**.888** (.800-.966)	**1.20** (.949-1.56)	896
Age group							
20-49 years	11-12	**.319** (.292-.349)	**.314** (.285-.341)	**.547** (.457-.605)	**.949** (.682-1.20)	**1.28** (.949-1.71)	536
50 years and older	11-12	**.303** (.268-.344)	**.291** (.244-.374)	**.518** (.433-.606)	**.835** (.668-1.00)	**1.07** (.872-1.72)	360
Gender							
Males	11-12	**.288** (.259-.320)	**.291** (.254-.311)	**.516** (.430-.547)	**.682** (.603-.827)	**.943** (.773-1.00)	538
Females	11-12	**.347** (.316-.382)	**.338** (.308-.383)	**.626** (.486-.735)	**1.10** (.846-1.49)	**1.54** (1.14-2.02)	358
Nonsmokers							
Total	11-12	**.306** (.284-.328)	**.304** (.286-.327)	**.482** (.455-.515)	**.810** (.695-.979)	**1.23** (1.03-1.56)	1332
Age group							
20-49 years	11-12	**.317** (.294-.341)	**.331** (.304-.362)	**.535** (.474-.593)	**.858** (.721-1.03)	**1.32** (.963-1.61)	666
50 years and older	11-12	**.294** (.268-.322)	**.284** (.261-.306)	**.447** (.401-.482)	**.752** (.588-.982)	**1.16** (.810-1.62)	666
Gender							
Males	11-12	**.300** (.277-.324)	**.304** (.284-.331)	**.433** (.380-.488)	**.656** (.546-.721)	**.811** (.721-.963)	631
Females	11-12	**.310** (.281-.343)	**.310** (.277-.352)	**.535** (.471-.588)	**1.06** (.736-1.35)	**1.49** (1.16-1.82)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.048.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Urinary Cobalt (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.340** (.307-.377)	**.329** (.290-.364)	**.505** (.464-.549)	**.756** (.665-.850)	**1.16** (.888-1.56)	896
Age group							
20-49 years	11-12	**.324** (.285-.369)	**.307** (.261-.364)	**.474** (.430-.549)	**.757** (.662-.890)	**1.23** (.782-1.92)	536
50 years and older	11-12	**.368** (.335-.403)	**.345** (.329-.400)	**.529** (.490-.573)	**.732** (.622-.943)	**1.05** (.856-1.50)	360
Gender							
Males	11-12	**.276** (.253-.301)	**.266** (.235-.294)	**.406** (.364-.465)	**.564** (.487-.660)	**.665** (.541-.898)	538
Females	11-12	**.441** (.373-.521)	**.418** (.339-.504)	**.644** (.570-.733)	**1.13** (.783-1.56)	**1.79** (1.00-2.35)	358
Nonsmokers							
Total	11-12	**.353** (.335-.372)	**.328** (.303-.342)	**.511** (.466-.564)	**.845** (.710-1.07)	**1.27** (1.07-1.58)	1331
Age group							
20-49 years	11-12	**.340** (.319-.363)	**.305** (.278-.339)	**.496** (.453-.569)	**.944** (.750-1.10)	**1.27** (1.07-1.58)	665
50 years and older	11-12	**.367** (.336-.402)	**.340** (.304-.390)	**.513** (.451-.593)	**.777** (.600-1.16)	**1.30** (.845-2.13)	666
Gender							
Males	11-12	**.261** (.244-.279)	**.241** (.226-.254)	**.339** (.316-.381)	**.479** (.423-.593)	**.637** (.511-1.03)	630
Females	11-12	**.449** (.418-.484)	**.423** (.400-.458)	**.638** (.594-.711)	**1.10** (.957-1.30)	**1.58** (1.18-2.24)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html**

Urinary Lead

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.474** (.405-.556)	**.450** (.400-.530)	**.890** (.740-1.02)	**1.57** (1.15-2.01)	**2.54** (1.73-4.60)	897
Age group							
20-49 years	11-12	**.417** (.353-.492)	**.410** (.340-.500)	**.780** (.640-1.00)	**1.19** (1.03-1.62)	**1.78** (1.36-3.07)	537
50 years and older	11-12	**.589** (.470-.738)	**.520** (.430-.650)	**1.02** (.700-1.58)	**1.92** (1.47-2.97)	**4.11** (1.82-4.99)	360
Gender							
Males	11-12	**.552** (.452-.675)	**.570** (.440-.710)	**1.01** (.840-1.27)	**1.82** (1.46-2.62)	**3.07** (1.76-4.99)	539
Females	11-12	**.392** (.334-.460)	**.380** (.320-.440)	**.670** (.500-.840)	**1.15** (.810-1.47)	**1.58** (1.15-2.56)	358
Nonsmokers							
Total	11-12	**.361** (.333-.391)	**.380** (.340-.400)	**.650** (.580-.710)	**1.02** (.900-1.16)	**1.34** (1.21-1.55)	1332
Age group							
20-49 years	11-12	**.302** (.271-.338)	**.300** (.260-.350)	**.570** (.510-.650)	**.960** (.820-1.14)	**1.26** (1.05-1.38)	666
50 years and older	11-12	**.435** (.390-.487)	**.430** (.380-.480)	**.720** (.600-.810)	**1.11** (.920-1.36)	**1.61** (1.28-2.16)	666
Gender							
Males	11-12	**.425** (.384-.471)	**.420** (.390-.450)	**.720** (.640-.810)	**1.11** (.940-1.33)	**1.53** (1.16-1.90)	631
Females	11-12	**.316** (.284-.353)	**.320** (.300-.370)	**.580** (.500-.670)	**.960** (.820-1.15)	**1.32** (1.05-1.38)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.08.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Lead_FactSheet.html**

Urinary Lead (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.518** (.465-.576)	**.496** (.435-.534)	**.806** (.681-.956)	**1.24** (1.09-1.75)	**2.00** (1.24-4.00)	897
Age group							
20-49 years	11-12	**.427** (.385-.473)	**.386** (.358-.402)	**.593** (.520-.765)	**1.10** (.833-1.32)	**1.53** (1.12-2.76)	537
50 years and older	11-12	**.714** (.603-.846)	**.684** (.578-.806)	**1.01** (.857-1.22)	**1.75** (1.14-3.62)	**2.15** (1.32-4.53)	360
Gender							
Males	11-12	**.534** (.472-.604)	**.500** (.428-.590)	**.833** (.712-1.05)	**1.46** (1.12-1.93)	**2.17** (1.51-3.70)	539
Females	11-12	**.498** (.435-.570)	**.493** (.421-.527)	**.750** (.614-.867)	**1.21** (.867-1.38)	**1.53** (1.18-3.67)	358
Nonsmokers							
Total	11-12	**.417** (.386-.451)	**.407** (.378-.431)	**.652** (.583-.704)	**.939** (.826-1.11)	**1.46** (1.20-1.64)	1331
Age group							
20-49 years	11-12	**.326** (.289-.367)	**.314** (.268-.374)	**.510** (.448-.591)	**.728** (.656-.929)	**.939** (.750-1.16)	665
50 years and older	11-12	**.544** (.489-.606)	**.488** (.431-.558)	**.759** (.680-.812)	**1.26** (1.04-1.60)	**1.71** (1.47-2.12)	666
Gender							
Males	11-12	**.372** (.325-.424)	**.367** (.319-.419)	**.543** (.483-.630)	**.826** (.694-1.01)	**1.21** (.916-1.65)	630
Females	11-12	**.458** (.419-.501)	**.441** (.400-.509)	**.710** (.644-.765)	**1.05** (.905-1.29)	**1.59** (1.22-1.71)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Manganese

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.123** (.112-.135)	**.120** (.100-.140)	**.200** (.190-.220)	**.290** (.260-.330)	**.370** (.300-.630)	897
Age group							
20-49 years	11-12	**.131** (.116-.149)	**.130** (.100-.160)	**.220** (.200-.250)	**.320** (.260-.450)	**.520** (.300-.660)	537
50 years and older	11-12	**.110** (.098-.123)	**.110** (.080-.130)	**.170** (.150-.210)	**.260** (.220-.280)	**.300** (.270-.350)	360
Gender							
Males	11-12	**.113** (.099-.129)	**.110** (.080-.140)	**.180** (.160-.220)	**.260** (.240-.300)	**.350** (.300-.370)	539
Females	11-12	**.136** (.119-.156)	**.140** (.110-.170)	**.230** (.180-.280)	**.320** (.260-.620)	**.600** (.280-.920)	358
Nonsmokers							
Total	11-12	**.122** (.110-.136)	**.120** (.100-.140)	**.190** (.180-.220)	**.280** (.250-.300)	**.350** (.300-.410)	1332
Age group							
20-49 years	11-12	**.122** (.108-.139)	**.120** (.100-.140)	**.190** (.170-.220)	**.280** (.250-.320)	**.360** (.300-.460)	666
50 years and older	11-12	**.122** (.110-.135)	**.130** (.100-.150)	**.190** (.170-.220)	**.270** (.240-.300)	**.340** (.290-.400)	666
Gender							
Males	11-12	**.123** (.110-.138)	**.130** (.100-.150)	**.190** (.170-.220)	**.270** (.250-.300)	**.340** (.290-.400)	631
Females	11-12	**.121** (.108-.136)	**.120** (.100-.140)	**.190** (.170-.230)	**.280** (.250-.300)	**.360** (.300-.490)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.08.

Urinary Manganese (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.134** (.116-.155)	**.127** (.116-.139)	**.238** (.195-.290)	**.384** (.318-.463)	**.529** (.397-.643)	897
Age group							
20-49 years	11-12	**.135** (.110-.165)	**.123** (.104-.144)	**.271** (.192-.315)	**.413** (.335-.529)	**.532** (.458-1.00)	537
50 years and older	11-12	**.133** (.121-.147)	**.128** (.117-.150)	**.217** (.184-.286)	**.318** (.286-.387)	**.471** (.356-.583)	360
Gender							
Males	11-12	**.109** (.092-.130)	**.106** (.089-.124)	**.188** (.150-.221)	**.318** (.250-.383)	**.423** (.328-.529)	539
Females	11-12	**.173** (.146-.205)	**.178** (.136-.214)	**.300** (.234-.378)	**.471** (.388-.587)	**.882** (.480-1.33)	358
Nonsmokers							
Total	11-12	**.141** (.127-.156)	**.139** (.119-.151)	**.234** (.200-.281)	**.410** (.373-.512)	**.571** (.519-.625)	1331
Age group							
20-49 years	11-12	**.131** (.118-.146)	**.130** (.112-.145)	**.213** (.190-.248)	**.405** (.343-.519)	**.625** (.438-1.10)	665
50 years and older	11-12	**.152** (.135-.172)	**.144** (.125-.169)	**.256** (.208-.324)	**.426** (.364-.518)	**.550** (.512-.605)	666
Gender							
Males	11-12	**.107** (.095-.121)	**.108** (.094-.119)	**.170** (.154-.182)	**.300** (.218-.364)	**.385** (.341-.500)	630
Females	11-12	**.176** (.157-.197)	**.161** (.143-.200)	**.295** (.254-.343)	**.519** (.426-.597)	**.667** (.570-1.21)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Molybdenum

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**32.7** (28.5-37.4)	**36.6** (31.1-41.8)	**66.8** (58.2-76.8)	**108** (88.1-126)	**140** (120-162)	897
Age group							
20-49 years	11-12	**35.7** (30.9-41.1)	**38.8** (31.1-48.3)	**70.2** (59.4-82.6)	**111** (83.6-132)	**140** (120-162)	537
50 years and older	11-12	**28.2** (23.8-33.4)	**32.6** (26.8-38.2)	**60.7** (52.5-73.1)	**95.3** (74.2-135)	**137** (93.1-184)	360
Gender							
Males	11-12	**35.4** (29.9-41.8)	**38.0** (31.4-47.2)	**73.8** (59.0-88.1)	**111** (85.1-140)	**137** (111-179)	539
Females	11-12	**29.6** (24.7-35.4)	**32.1** (27.6-38.8)	**58.9** (49.9-72.2)	**96.5** (78.1-118)	**140** (97.1-183)	358
Nonsmokers							
Total	11-12	**35.0** (32.8-37.4)	**38.0** (34.5-40.8)	**63.7** (60.4-68.7)	**99.7** (93.3-107)	**134** (115-143)	1332
Age group							
20-49 years	11-12	**35.9** (32.1-40.1)	**40.8** (37.3-44.9)	**68.0** (61.8-75.9)	**102** (94.2-113)	**133** (108-150)	666
50 years and older	11-12	**34.1** (31.7-36.6)	**34.2** (31.2-38.8)	**57.8** (53.8-64.6)	**98.0** (82.5-109)	**137** (109-144)	666
Gender							
Males	11-12	**42.4** (38.8-46.3)	**44.7** (39.7-52.0)	**71.2** (65.0-77.1)	**108** (97.6-130)	**140** (108-150)	631
Females	11-12	**30.1** (27.2-33.2)	**31.6** (28.8-34.6)	**58.4** (49.4-64.4)	**86.8** (79.8-101)	**121** (102-154)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.99.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Molybdenum (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**35.6** (33.7-37.7)	**35.7** (32.8-40.0)	**54.4** (51.6-57.9)	**79.1** (73.4-87.1)	**104** (87.1-119)	897
Age group							
20-49 years	11-12	**36.5** (33.7-39.5)	**35.6** (32.7-40.7)	**53.4** (48.9-57.9)	**76.3** (66.8-89.5)	**96.0** (82.4-113)	537
50 years and older	11-12	**34.2** (30.6-38.2)	**36.9** (29.1-43.9)	**56.1** (50.7-62.8)	**79.6** (71.3-108)	**108** (84.4-128)	360
Gender							
Males	11-12	**34.2** (30.7-38.2)	**36.0** (32.3-41.6)	**55.4** (48.5-58.5)	**73.4** (63.5-77.9)	**82.4** (76.1-91.7)	539
Females	11-12	**37.5** (34.4-40.9)	**35.6** (32.9-38.8)	**53.5** (51.0-61.3)	**96.0** (70.6-108)	**128** (96.0-157)	358
Nonsmokers							
Total	11-12	**40.4** (38.7-42.2)	**39.4** (37.3-43.3)	**60.7** (56.8-63.7)	**85.6** (79.9-91.6)	**118** (98.8-142)	1331
Age group							
20-49 years	11-12	**38.5** (36.8-40.3)	**37.7** (35.3-40.1)	**57.3** (52.2-61.1)	**77.5** (71.6-85.6)	**107** (87.7-148)	665
50 years and older	11-12	**42.6** (39.6-45.8)	**41.6** (37.3-46.3)	**62.9** (56.4-71.6)	**91.9** (85.5-104)	**118** (103-148)	666
Gender							
Males	11-12	**36.9** (33.9-40.1)	**36.7** (33.3-41.6)	**52.2** (48.2-59.2)	**80.6** (69.6-87.1)	**92.5** (84.9-114)	630
Females	11-12	**43.5** (40.7-46.6)	**42.0** (38.5-45.4)	**65.5** (61.3-69.6)	**95.1** (85.5-105)	**148** (104-165)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html**

Urinary Strontium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**91.8** (79.8-106)	**97.2** (81.5-114)	**181** (145-214)	**281** (255-318)	**346** (315-374)	895
Age group							
20-49 years	11-12	**96.5** (86.1-108)	**98.3** (88.7-112)	**197** (156-228)	**286** (256-342)	**346** (281-395)	537
50 years and older	11-12	**84.6** (67.4-106)	**96.2** (67.0-128)	**156** (129-184)	**255** (185-312)	**338** (283-401)	358
Gender							
Males	11-12	**98.4** (83.6-116)	**102** (88.6-123)	**180** (150-228)	**306** (267-329)	**365** (312-396)	538
Females	11-12	**84.2** (71.2-99.6)	**90.6** (69.3-106)	**181** (123-214)	**258** (203-342)	**342** (250-491)	357
Nonsmokers							
Total	11-12	**82.4** (76.7-88.5)	**83.7** (77.0-91.9)	**157** (151-169)	**234** (213-252)	**293** (263-355)	1331
Age group							
20-49 years	11-12	**85.4** (78.1-93.4)	**90.7** (79.7-108)	**173** (155-189)	**239** (218-262)	**282** (249-325)	666
50 years and older	11-12	**79.2** (72.3-86.8)	**76.8** (66.7-88.1)	**147** (130-156)	**225** (183-276)	**325** (234-379)	665
Gender							
Males	11-12	**94.5** (84.1-106)	**99.4** (89.4-110)	**167** (154-184)	**249** (195-297)	**297** (252-378)	630
Females	11-12	**73.9** (68.4-79.8)	**75.4** (66.1-80.0)	**151** (133-160)	**225** (204-259)	**276** (255-327)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.5.

Urinary Strontium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**100** (85.8-117)	**106** (84.2-125)	**170** (140-192)	**253** (201-333)	**367** (240-614)	895
Age group							
20-49 years	11-12	**98.8** (85.9-114)	**101** (84.8-126)	**164** (140-188)	**246** (198-305)	**333** (241-431)	537
50 years and older	11-12	**102** (82.6-127)	**110** (81.3-131)	**180** (140-208)	**314** (211-375)	**398** (192-811)	358
Gender							
Males	11-12	**95.2** (83.7-108)	**99.4** (78.7-120)	**158** (133-187)	**240** (201-267)	**333** (253-367)	538
Females	11-12	**107** (81.5-140)	**109** (84.8-134)	**187** (132-246)	**279** (185-706)	**427** (211-939)	357
Nonsmokers							
Total	11-12	**95.1** (89.2-101)	**97.6** (92.4-106)	**150** (139-163)	**232** (213-254)	**313** (272-341)	1330
Age group							
20-49 years	11-12	**91.5** (83.4-100)	**98.6** (85.0-112)	**136** (128-148)	**216** (178-245)	**258** (241-293)	665
50 years and older	11-12	**99.0** (89.8-109)	**97.3** (90.7-113)	**163** (145-196)	**249** (220-318)	**350** (313-372)	665
Gender							
Males	11-12	**82.0** (74.6-90.0)	**87.9** (81.7-92.0)	**129** (115-141)	**176** (150-209)	**232** (180-277)	629
Females	11-12	**107** (100-114)	**112** (100-120)	**178** (154-204)	**272** (239-313)	**346** (293-372)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Thallium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.138** (.125-.153)	**.148** (.132-.162)	**.235** (.216-.266)	**.358** (.288-.419)	**.438** (.364-.524)	897
Age group							
20-49 years	11-12	**.147** (.133-.163)	**.160** (.145-.178)	**.257** (.222-.299)	**.370** (.299-.446)	**.446** (.336-.524)	537
50 years and older	11-12	**.125** (.107-.146)	**.134** (.112-.152)	**.208** (.175-.230)	**.311** (.230-.409)	**.409** (.261-.541)	360
Gender							
Males	11-12	**.143** (.128-.159)	**.148** (.131-.165)	**.236** (.217-.278)	**.336** (.286-.454)	**.473** (.322-.535)	539
Females	11-12	**.133** (.113-.158)	**.146** (.122-.164)	**.235** (.186-.276)	**.366** (.245-.446)	**.408** (.366-.503)	358
Nonsmokers							
Total	11-12	**.148** (.137-.159)	**.158** (.142-.170)	**.249** (.223-.278)	**.349** (.319-.377)	**.419** (.372-.519)	1332
Age group							
20-49 years	11-12	**.160** (.144-.178)	**.174** (.160-.202)	**.284** (.248-.324)	**.377** (.346-.419)	**.443** (.387-.522)	666
50 years and older	11-12	**.136** (.124-.148)	**.140** (.125-.152)	**.204** (.181-.245)	**.292** (.260-.341)	**.361** (.301-.543)	666
Gender							
Males	11-12	**.171** (.155-.190)	**.174** (.156-.206)	**.278** (.237-.319)	**.361** (.334-.385)	**.412** (.372-.495)	631
Females	11-12	**.131** (.120-.143)	**.138** (.127-.149)	**.227** (.196-.258)	**.322** (.289-.376)	**.433** (.330-.535)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.02.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html**

Urinary Thallium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.151** (.136-.168)	**.150** (.135-.161)	**.210** (.188-.236)	**.292** (.237-.368)	**.375** (.278-.741)	897
Age group							
20-49 years	11-12	**.151** (.132-.173)	**.149** (.133-.163)	**.205** (.178-.248)	**.288** (.229-.375)	**.364** (.283-.741)	537
50 years and older	11-12	**.151** (.135-.169)	**.153** (.123-.171)	**.224** (.179-.243)	**.308** (.232-.416)	**.410** (.257-.489)	360
Gender							
Males	11-12	**.138** (.121-.158)	**.132** (.119-.147)	**.179** (.154-.214)	**.259** (.204-.348)	**.301** (.237-.741)	539
Females	11-12	**.169** (.154-.186)	**.174** (.163-.188)	**.235** (.202-.292)	**.320** (.280-.457)	**.457** (.294-.593)	358
Nonsmokers							
Total	11-12	**.171** (.159-.183)	**.167** (.157-.181)	**.236** (.219-.257)	**.338** (.314-.366)	**.438** (.376-.503)	1331
Age group							
20-49 years	11-12	**.172** (.159-.186)	**.171** (.157-.186)	**.234** (.211-.249)	**.333** (.294-.382)	**.411** (.343-.537)	665
50 years and older	11-12	**.169** (.153-.187)	**.165** (.152-.179)	**.237** (.205-.280)	**.345** (.300-.425)	**.476** (.351-.532)	666
Gender							
Males	11-12	**.149** (.138-.161)	**.152** (.136-.160)	**.208** (.182-.232)	**.289** (.235-.332)	**.333** (.291-.398)	630
Females	11-12	**.190** (.178-.204)	**.185** (.170-.200)	**.267** (.240-.290)	**.403** (.348-.430)	**.482** (.411-.557)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Tin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.607** (.511-.722)	**.530** (.430-.640)	**1.09** (.870-1.42)	**2.60** (1.62-4.14)	**4.53** (3.04-6.85)	897
Age group							
20-49 years	11-12	**.602** (.494-.734)	**.490** (.380-.640)	**1.11** (.790-1.55)	**2.60** (1.78-4.22)	**4.53** (2.95-8.30)	537
50 years and older	11-12	**.616** (.526-.721)	**.570** (.500-.690)	**1.04** (.900-1.24)	**2.59** (1.47-3.86)	**4.46** (3.04-6.85)	360
Gender							
Males	11-12	**.565** (.468-.681)	**.500** (.420-.600)	**.930** (.760-1.27)	**2.12** (1.41-3.39)	**4.04** (2.73-5.80)	539
Females	11-12	**.665** (.540-.819)	**.600** (.470-.690)	**1.26** (.940-1.61)	**2.98** (1.62-6.20)	**6.85** (2.98-10.5)	358
Nonsmokers							
Total	11-12	**.585** (.527-.650)	**.500** (.450-.570)	**1.00** (.880-1.19)	**2.56** (2.10-3.44)	**4.71** (3.44-6.50)	1332
Age group							
20-49 years	11-12	**.487** (.441-.537)	**.410** (.370-.480)	**.810** (.740-.960)	**2.00** (1.40-2.47)	**3.21** (2.13-4.88)	666
50 years and older	11-12	**.712** (.603-.842)	**.580** (.460-.720)	**1.23** (.990-1.63)	**3.56** (2.35-4.74)	**5.97** (3.62-9.43)	666
Gender							
Males	11-12	**.609** (.524-.707)	**.520** (.470-.580)	**.990** (.790-1.22)	**3.19** (1.82-4.22)	**6.10** (3.20-9.43)	631
Females	11-12	**.567** (.500-.642)	**.470** (.410-.580)	**1.03** (.850-1.26)	**2.25** (2.03-2.99)	**4.07** (2.62-4.74)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.22.

Urinary Tin (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.663** (.576-.762)	**.571** (.488-.664)	**1.06** (.867-1.36)	**2.38** (2.00-2.81)	**4.15** (2.89-5.50)	897
Age group							
20-49 years	11-12	**.617** (.523-.727)	**.554** (.458-.673)	**.962** (.780-1.36)	**2.20** (1.68-2.66)	**4.02** (2.38-7.86)	537
50 years and older	11-12	**.747** (.632-.882)	**.588** (.489-.709)	**1.26** (.872-1.67)	**2.81** (1.78-4.09)	**4.93** (2.81-8.49)	360
Gender							
Males	11-12	**.546** (.479-.621)	**.488** (.411-.596)	**.877** (.694-1.03)	**1.86** (1.24-2.29)	**2.64** (2.05-3.90)	539
Females	11-12	**.844** (.673-1.06)	**.683** (.545-.821)	**1.41** (1.03-2.20)	**3.10** (2.38-4.93)	**5.14** (3.74-11.2)	358
Nonsmokers							
Total	11-12	**.677** (.611-.751)	**.603** (.548-.671)	**1.11** (.970-1.31)	**2.48** (1.95-2.99)	**4.45** (2.99-5.35)	1331
Age group							
20-49 years	11-12	**.525** (.470-.586)	**.487** (.434-.539)	**.867** (.755-.975)	**1.55** (1.20-2.28)	**3.04** (1.95-4.43)	665
50 years and older	11-12	**.890** (.774-1.02)	**.769** (.650-.897)	**1.64** (1.22-1.95)	**2.86** (2.50-4.51)	**5.55** (3.43-7.26)	666
Gender							
Males	11-12	**.532** (.442-.640)	**.459** (.390-.563)	**.818** (.640-1.15)	**2.11** (1.15-3.63)	**4.04** (2.11-6.27)	630
Females	11-12	**.821** (.723-.931)	**.743** (.624-.867)	**1.28** (1.10-1.60)	**2.56** (2.21-3.22)	**4.50** (3.04-6.07)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Tungsten

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.075** (.063-.089)	**.073** (.062-.083)	**.143** (.113-.195)	**.286** (.202-.428)	**.463** (.283-.838)	889
Age group							
20-49 years	11-12	**.082** (.066-.103)	**.080** (.068-.094)	**.158** (.116-.220)	**.354** (.196-.611)	**.611** (.294-.995)	530
50 years and older	11-12	**.064** (.056-.074)	**.063** (.049-.074)	**.120** (.092-.161)	**.235** (.161-.290)	**.298** (.243-.449)	359
Gender							
Males	11-12	**.080** (.063-.101)	**.075** (.063-.095)	**.146** (.116-.204)	**.290** (.183-.615)	**.611** (.235-.838)	536
Females	11-12	**.069** (.058-.082)	**.066** (.053-.082)	**.138** (.100-.194)	**.286** (.195-.375)	**.412** (.298-.496)	353
Nonsmokers							
Total	11-12	**.065** (.058-.072)	**.058** (.053-.064)	**.118** (.101-.140)	**.238** (.190-.318)	**.370** (.277-.484)	1324
Age group							
20-49 years	11-12	**.072** (.061-.086)	**.067** (.055-.084)	**.132** (.114-.177)	**.277** (.193-.405)	**.437** (.277-.655)	661
50 years and older	11-12	**.057** (.052-.063)	**.053** (.047-.058)	**.097** (.086-.113)	**.204** (.170-.225)	**.307** (.216-.426)	663
Gender							
Males	11-12	**.074** (.065-.085)	**.068** (.058-.083)	**.140** (.117-.168)	**.283** (.200-.388)	**.426** (.268-.522)	626
Females	11-12	**.058** (.052-.064)	**.052** (.047-.058)	**.101** (.085-.121)	**.220** (.158-.274)	**.307** (.220-.440)	698

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.026.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Tungsten (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.081** (.072-.092)	**.078** (.074-.086)	**.128** (.113-.140)	**.223** (.152-.343)	**.365** (.229-.658)	889
Age group							
20-49 years	11-12	**.084** (.071-.098)	**.085** (.074-.095)	**.130** (.113-.150)	**.241** (.143-.431)	**.374** (.231-.682)	530
50 years and older	11-12	**.078** (.070-.087)	**.074** (.069-.084)	**.121** (.104-.129)	**.193** (.162-.208)	**.262** (.208-.288)	359
Gender							
Males	11-12	**.077** (.064-.093)	**.077** (.065-.092)	**.118** (.098-.140)	**.188** (.129-.378)	**.370** (.172-.652)	536
Females	11-12	**.087** (.073-.104)	**.086** (.071-.102)	**.140** (.120-.163)	**.229** (.180-.293)	**.343** (.229-.733)	353
Nonsmokers							
Total	11-12	**.075** (.067-.084)	**.067** (.064-.075)	**.126** (.104-.148)	**.225** (.175-.282)	**.343** (.244-.478)	1323
Age group							
20-49 years	11-12	**.078** (.067-.091)	**.072** (.062-.081)	**.128** (.103-.170)	**.247** (.181-.374)	**.391** (.244-.647)	660
50 years and older	11-12	**.072** (.065-.079)	**.065** (.061-.074)	**.122** (.099-.135)	**.194** (.160-.238)	**.261** (.208-.366)	663
Gender							
Males	11-12	**.065** (.056-.075)	**.061** (.055-.067)	**.108** (.087-.131)	**.183** (.138-.263)	**.272** (.174-.470)	625
Females	11-12	**.084** (.077-.092)	**.075** (.069-.080)	**.142** (.117-.164)	**.244** (.200-.334)	**.391** (.267-.544)	698

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Uranium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.007** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.017)	**.025** (.020-.033)	**.034** (.026-.046)	897
Age group							
20-49 years	11-12	**.007** (.006-.009)	**.007** (.005-.009)	**.014** (.011-.017)	**.024** (.020-.032)	**.035** (.025-.061)	537
50 years and older	11-12	**.007** (.006-.009)	**.007** (.005-.007)	**.013** (.008-.017)	**.025** (.017-.034)	**.034** (.026-.040)	360
Gender							
Males	11-12	**.008** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.017)	**.026** (.017-.040)	**.037** (.023-.069)	539
Females	11-12	**.007** (.006-.008)	**.007** (.005-.009)	**.013** (.009-.019)	**.024** (.019-.028)	**.028** (.021-.036)	358
Nonsmokers							
Total	11-12	**.005** (.005-.006)	**.005** (.004-.006)	**.009** (.007-.011)	**.016** (.013-.021)	**.025** (.019-.035)	1332
Age group							
20-49 years	11-12	**.005** (.005-.006)	**.005** (.004-.006)	**.009** (.007-.010)	**.015** (.011-.020)	**.021** (.015-.031)	666
50 years and older	11-12	**.006** (.005-.007)	**.005** (.004-.006)	**.011** (.007-.014)	**.017** (.014-.025)	**.028** (.019-.043)	666
Gender							
Males	11-12	**.006** (.005-.007)	**.006** (.004-.007)	**.010** (.007-.013)	**.016** (.013-.022)	**.023** (.017-.039)	631
Females	11-12	**.005** (.005-.006)	**.005** (.004-.006)	**.009** (.007-.011)	**.016** (.012-.024)	**.027** (.019-.043)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.003.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Urinary Uranium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.008** (.007-.009)	**.007** (.007-.009)	**.013** (.011-.016)	**.022** (.019-.027)	**.031** (.022-.073)	897
Age group							
20-49 years	11-12	**.008** (.006-.009)	**.007** (.006-.009)	**.013** (.009-.016)	**.021** (.019-.027)	**.030** (.021-.083)	537
50 years and older	11-12	**.008** (.007-.010)	**.007** (.006-.010)	**.014** (.011-.018)	**.022** (.018-.031)	**.038** (.021-.073)	360
Gender							
Males	11-12	**.007** (.006-.009)	**.007** (.005-.008)	**.013** (.008-.016)	**.020** (.014-.027)	**.028** (.020-.083)	539
Females	11-12	**.009** (.008-.010)	**.008** (.007-.010)	**.014** (.011-.018)	**.025** (.021-.030)	**.041** (.024-.058)	358
Nonsmokers							
Total	11-12	**.006** (.005-.007)	**.006** (.005-.007)	**.010** (.008-.013)	**.019** (.013-.027)	**.028** (.021-.035)	1331
Age group							
20-49 years	11-12	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.007-.011)	**.018** (.012-.025)	**.027** (.020-.029)	665
50 years and older	11-12	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.009-.014)	**.019** (.014-.032)	**.033** (.021-.051)	666
Gender							
Males	11-12	**.005** (.004-.006)	**.005** (.004-.006)	**.008** (.007-.010)	**.013** (.010-.017)	**.019** (.013-.030)	630
Females	11-12	**.008** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.016)	**.022** (.018-.028)	**.033** (.027-.040)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html**

Urinary Nitrate

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**46.8** (43.3-50.5)	**50.0** (45.8-52.7)	**80.4** (69.5-91.3)	**119** (107-140)	**152** (124-184)	889
Age group							
20-49 years	11-12	**48.2** (43.8-52.9)	**52.2** (47.6-57.2)	**80.2** (69.0-93.4)	**117** (97.9-152)	**153** (118-192)	532
50 years and older	11-12	**44.5** (39.5-50.2)	**45.8** (37.7-52.1)	**82.8** (60.6-94.8)	**123** (104-140)	**146** (109-173)	357
Gender							
Males	11-12	**48.4** (43.9-53.4)	**51.7** (45.1-57.9)	**84.2** (71.6-94.7)	**121** (107-140)	**152** (121-184)	536
Females	11-12	**44.7** (39.4-50.7)	**47.9** (41.6-53.4)	**73.5** (64.5-91.7)	**114** (93.4-149)	**149** (111-190)	353
Nonsmokers							
Total	11-12	**39.5** (36.8-42.5)	**41.7** (39.2-45.1)	**68.0** (63.2-73.5)	**103** (95.5-114)	**135** (115-162)	1309
Age group							
20-49 years	11-12	**43.0** (38.8-47.7)	**45.1** (41.2-49.1)	**73.5** (65.8-83.3)	**114** (97.9-124)	**144** (115-180)	655
50 years and older	11-12	**36.1** (32.5-40.1)	**38.7** (34.2-43.3)	**60.8** (54.0-70.9)	**93.7** (83.3-108)	**120** (102-148)	654
Gender							
Males	11-12	**46.6** (42.4-51.3)	**46.4** (42.5-53.0)	**74.9** (66.6-80.3)	**112** (92.6-135)	**155** (112-175)	625
Females	11-12	**34.6** (31.8-37.7)	**36.8** (32.2-41.5)	**60.5** (55.6-68.4)	**99.3** (89.6-113)	**119** (113-138)	684

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.

Urinary Nitrate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**51.3** (46.7-56.2)	**49.5** (43.9-56.0)	**70.6** (63.1-80.9)	**95.0** (83.0-123)	**133** (102-165)	889
Age group							
20-49 years	11-12	**49.6** (44.6-55.1)	**45.7** (41.2-52.1)	**65.3** (56.6-74.6)	**89.1** (76.0-133)	**136** (95.6-231)	532
50 years and older	11-12	**54.1** (48.7-60.1)	**57.2** (51.3-61.0)	**81.1** (66.2-87.6)	**101** (87.7-112)	**112** (91.5-144)	357
Gender							
Males	11-12	**47.1** (42.6-52.0)	**45.0** (41.5-48.8)	**61.5** (55.6-68.8)	**87.2** (73.9-102)	**102** (87.2-200)	536
Females	11-12	**57.0** (50.7-64.1)	**58.8** (46.6-67.4)	**80.9** (68.6-87.7)	**108** (86.3-149)	**144** (107-245)	353
Nonsmokers							
Total	11-12	**46.0** (43.2-48.9)	**44.0** (41.1-46.6)	**66.8** (59.7-72.5)	**105** (89.1-119)	**143** (117-162)	1308
Age group							
20-49 years	11-12	**46.5** (43.0-50.2)	**43.1** (39.1-47.5)	**63.8** (57.4-71.1)	**106** (84.9-131)	**150** (107-173)	654
50 years and older	11-12	**45.4** (41.3-49.9)	**45.1** (41.1-50.3)	**68.0** (57.8-83.3)	**99.4** (85.4-119)	**140** (109-151)	654
Gender							
Males	11-12	**40.7** (38.2-43.3)	**39.3** (36.6-42.0)	**55.3** (51.5-60.9)	**81.9** (69.6-97.6)	**105** (84.9-114)	624
Females	11-12	**50.7** (46.0-55.9)	**47.9** (43.7-53.7)	**76.5** (68.0-86.4)	**126** (102-150)	**154** (137-180)	684

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Perchlorate

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**2.55** (2.31-2.80)	**2.70** (2.34-3.15)	**4.75** (4.02-5.64)	**7.65** (7.36-8.49)	**10.4** (8.54-14.7)	889
Age group							
20-49 years	11-12	**2.58** (2.26-2.94)	**2.75** (2.18-3.24)	**4.73** (3.96-5.62)	**8.34** (7.32-9.15)	**11.7** (8.34-21.6)	532
50 years and older	11-12	**2.49** (2.15-2.90)	**2.59** (1.98-3.38)	**4.87** (3.57-6.44)	**7.42** (5.80-9.45)	**10.0** (7.49-12.7)	357
Gender							
Males	11-12	**2.75** (2.41-3.13)	**2.96** (2.35-3.41)	**5.50** (4.46-6.33)	**8.34** (6.85-11.7)	**12.7** (8.34-22.2)	536
Females	11-12	**2.31** (2.01-2.67)	**2.55** (2.17-2.99)	**4.10** (3.46-4.75)	**7.42** (4.68-9.52)	**9.44** (7.65-11.4)	353
Nonsmokers							
Total	11-12	**2.96** (2.77-3.17)	**2.98** (2.74-3.26)	**5.36** (4.98-5.76)	**9.11** (8.30-10.4)	**12.8** (10.9-14.7)	1309
Age group							
20-49 years	11-12	**2.91** (2.62-3.23)	**2.95** (2.44-3.47)	**5.46** (4.74-6.48)	**9.19** (8.04-10.8)	**12.1** (9.78-16.8)	655
50 years and older	11-12	**3.02** (2.67-3.42)	**3.00** (2.54-3.44)	**5.21** (4.24-6.08)	**8.64** (7.40-10.9)	**14.4** (10.3-20.8)	654
Gender							
Males	11-12	**3.35** (3.06-3.68)	**3.41** (2.99-3.67)	**5.65** (5.03-6.83)	**10.3** (8.48-10.8)	**13.3** (10.8-18.1)	625
Females	11-12	**2.68** (2.44-2.94)	**2.63** (2.39-2.95)	**5.00** (4.00-5.97)	**8.46** (7.99-9.48)	**12.6** (10.7-15.1)	684

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.05.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html**

Urinary Perchlorate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**2.79** (2.55-3.06)	**2.61** (2.33-2.88)	**4.45** (3.97-4.75)	**7.45** (6.56-7.61)	**9.88** (7.51-19.9)	889
Age group							
20-49 years	11-12	**2.66** (2.33-3.03)	**2.44** (2.13-2.86)	**4.22** (3.76-4.73)	**7.32** (5.54-8.76)	**10.2** (6.94-43.9)	532
50 years and older	11-12	**3.03** (2.77-3.31)	**2.78** (2.57-3.08)	**4.63** (4.00-5.16)	**7.45** (5.14-9.42)	**9.27** (7.50-12.2)	357
Gender							
Males	11-12	**2.67** (2.31-3.09)	**2.33** (2.11-2.70)	**4.22** (3.67-4.86)	**7.45** (5.27-9.22)	**11.0** (7.22-49.1)	536
Females	11-12	**2.95** (2.65-3.28)	**2.88** (2.50-3.29)	**4.63** (3.87-4.98)	**7.32** (5.98-8.67)	**9.16** (7.50-11.7)	353
Nonsmokers							
Total	11-12	**3.44** (3.20-3.69)	**3.36** (3.02-3.64)	**5.83** (5.49-6.09)	**9.46** (8.03-11.1)	**14.8** (10.2-18.5)	1308
Age group							
20-49 years	11-12	**3.14** (2.83-3.48)	**2.95** (2.55-3.44)	**5.55** (4.52-6.36)	**9.20** (7.49-10.4)	**12.0** (9.81-15.9)	654
50 years and older	11-12	**3.80** (3.36-4.29)	**3.65** (3.31-4.06)	**6.08** (5.25-6.91)	**10.0** (7.86-14.9)	**16.9** (11.1-23.6)	654
Gender							
Males	11-12	**2.92** (2.68-3.17)	**2.90** (2.55-3.11)	**4.53** (4.07-5.16)	**6.83** (6.07-8.19)	**11.6** (7.21-17.4)	624
Females	11-12	**3.93** (3.53-4.36)	**3.85** (3.23-4.72)	**6.53** (6.08-7.49)	**10.3** (9.22-13.9)	**16.2** (11.8-19.2)	684

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html**

Urinary Thiocyanate

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**4.10** (3.58-4.69)	**4.60** (3.98-5.37)	**7.16** (6.43-8.09)	**11.2** (9.43-12.7)	**14.6** (12.7-16.2)	869
Age group							
20-49 years	11-12	**4.18** (3.72-4.69)	**4.67** (4.15-5.05)	**7.38** (6.43-8.20)	**11.7** (10.2-13.3)	**15.9** (12.7-17.8)	518
50 years and older	11-12	**3.98** (3.24-4.90)	**4.38** (3.37-5.94)	**6.90** (5.48-8.14)	**9.94** (7.67-13.5)	**12.8** (9.50-15.3)	351
Gender							
Males	11-12	**4.03** (3.26-4.98)	**4.51** (3.30-6.14)	**7.23** (6.43-8.59)	**11.1** (8.99-13.4)	**14.5** (11.8-17.8)	525
Females	11-12	**4.19** (3.81-4.61)	**4.71** (4.31-5.37)	**6.83** (6.12-7.95)	**11.3** (8.53-13.1)	**15.3** (11.9-18.2)	344
Nonsmokers							
Total	11-12	**.795** (.737-.858)	**.875** (.819-.929)	**1.56** (1.41-1.74)	**2.54** (2.23-2.92)	**3.23** (2.97-3.57)	1319
Age group							
20-49 years	11-12	**.855** (.777-.940)	**.927** (.854-1.00)	**1.71** (1.50-1.92)	**2.67** (2.29-3.17)	**3.43** (3.01-4.36)	659
50 years and older	11-12	**.736** (.666-.814)	**.833** (.726-.897)	**1.44** (1.21-1.68)	**2.39** (1.94-2.90)	**2.92** (2.39-3.86)	660
Gender							
Males	11-12	**.968** (.865-1.08)	**1.01** (.913-1.20)	**1.90** (1.57-2.20)	**2.79** (2.31-3.25)	**3.43** (2.94-4.10)	628
Females	11-12	**.681** (.600-.773)	**.727** (.603-.843)	**1.36** (1.21-1.50)	**2.27** (1.97-2.54)	**3.17** (2.52-3.32)	691

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.02.

Urinary Thiocyanate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**4.53** (4.02-5.10)	**5.04** (4.38-5.47)	**8.28** (7.42-10.0)	**14.4** (11.6-15.7)	**16.7** (15.3-18.9)	869
Age group							
20-49 years	11-12	**4.35** (3.87-4.89)	**4.84** (3.82-5.47)	**7.98** (7.54-8.91)	**14.0** (11.1-16.1)	**16.7** (14.2-19.9)	518
50 years and older	11-12	**4.81** (4.06-5.71)	**5.28** (4.43-6.84)	**8.84** (7.11-12.1)	**15.3** (10.5-17.2)	**16.6** (15.3-18.3)	351
Gender							
Males	11-12	**3.81** (3.28-4.43)	**4.20** (3.64-5.06)	**7.30** (6.54-7.77)	**11.1** (9.41-12.5)	**14.3** (12.3-15.6)	525
Females	11-12	**5.62** (4.64-6.81)	**5.82** (4.69-8.05)	**11.1** (8.53-14.6)	**16.7** (14.0-18.9)	**19.2** (16.7-24.0)	344
Nonsmokers							
Total	11-12	**.933** (.881-.988)	**.976** (.905-1.10)	**1.69** (1.54-1.84)	**2.70** (2.34-2.99)	**3.29** (3.02-3.89)	1318
Age group							
20-49 years	11-12	**.938** (.864-1.02)	**1.01** (.902-1.10)	**1.67** (1.46-1.84)	**2.51** (2.18-2.91)	**3.02** (2.91-3.18)	658
50 years and older	11-12	**.927** (.852-1.01)	**.965** (.830-1.18)	**1.72** (1.46-1.99)	**2.91** (2.16-3.37)	**3.76** (3.16-4.33)	660
Gender							
Males	11-12	**.865** (.782-.956)	**.941** (.743-1.09)	**1.56** (1.28-1.87)	**2.66** (2.09-2.96)	**3.37** (2.67-4.05)	627
Females	11-12	**.990** (.910-1.08)	**1.05** (.936-1.17)	**1.75** (1.59-1.91)	**2.86** (2.41-3.03)	**3.29** (2.97-3.96)	691

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary 2-Hydroxyfluorene

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1160** (1030-1300)	**1310** (1100-1420)	**2320** (2110-2540)	**4090** (3380-4430)	**5600** (4340-6250)	890
Age group							
20-49 years	11-12	**1070** (898-1280)	**1220** (1030-1410)	**2260** (1820-2520)	**3550** (2750-4210)	**4460** (4140-5330)	534
50 years and older	11-12	**1310** (1160-1480)	**1380** (1030-1850)	**2520** (2210-3360)	**4900** (3430-6100)	**6170** (5530-6960)	356
Gender							
Males	11-12	**1130** (945-1350)	**1330** (1010-1500)	**2420** (2080-3020)	**4200** (3360-5840)	**5990** (4090-7490)	535
Females	11-12	**1190** (1070-1330)	**1270** (1100-1380)	**2300** (2090-2490)	**3430** (2780-4140)	**4210** (3760-4900)	355
Nonsmokers							
Total	11-12	**164** (153-176)	**158** (147-174)	**298** (269-326)	**580** (478-622)	**768** (623-966)	1324
Age group							
20-49 years	11-12	**181** (163-201)	**178** (157-204)	**346** (309-386)	**623** (523-715)	**906** (694-1400)	663
50 years and older	11-12	**148** (131-167)	**143** (125-162)	**254** (216-298)	**441** (345-590)	**622** (457-915)	661
Gender							
Males	11-12	**200** (178-226)	**202** (164-224)	**342** (300-398)	**623** (521-728)	**945** (690-1460)	629
Females	11-12	**140** (129-151)	**141** (124-148)	**258** (227-288)	**458** (386-567)	**644** (547-798)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 2-Hydroxyfluorene (creatinine corrected)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1260** (1140-1400)	**1370** (1300-1460)	**2220** (1950-2520)	**3170** (2930-3560)	**3890** (3380-4670)	890
Age group							
20-49 years	11-12	**1100** (968-1250)	**1190** (1060-1300)	**1900** (1700-2150)	**2920** (2460-3290)	**3850** (3210-4390)	534
50 years and older	11-12	**1590** (1430-1770)	**1800** (1420-2040)	**2710** (2300-3040)	**3540** (2950-4110)	**3940** (3380-5170)	356
Gender							
Males	11-12	**1090** (950-1260)	**1210** (1060-1320)	**1890** (1550-2170)	**2820** (2310-3440)	**3540** (2800-4110)	535
Females	11-12	**1520** (1320-1750)	**1700** (1400-1950)	**2700** (2080-3040)	**3560** (3090-3940)	**4390** (3630-4840)	355
Nonsmokers							
Total	11-12	**190** (178-203)	**173** (165-182)	**265** (248-291)	**445** (372-484)	**637** (476-865)	1323
Age group							
20-49 years	11-12	**195** (178-212)	**177** (166-189)	**275** (238-309)	**467** (365-522)	**652** (471-961)	662
50 years and older	11-12	**185** (167-206)	**168** (146-192)	**260** (227-298)	**423** (348-459)	**610** (442-865)	661
Gender							
Males	11-12	**175** (156-196)	**153** (137-174)	**249** (207-281)	**423** (318-505)	**553** (426-1240)	628
Females	11-12	**204** (193-215)	**185** (171-200)	**282** (253-310)	**454** (381-511)	**702** (471-853)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 3-Hydroxyfluorene

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**605** (532-689)	**681** (534-801)	**1270** (1130-1510)	**2220** (1930-2620)	**2910** (2510-3220)	890
Age group							
20-49 years	11-12	**568** (465-693)	**660** (496-823)	**1210** (1060-1410)	**2050** (1710-2630)	**2790** (2130-3190)	534
50 years and older	11-12	**674** (581-782)	**693** (534-936)	**1480** (1130-1750)	**2420** (1790-3040)	**3040** (2500-4060)	356
Gender							
Males	11-12	**602** (496-730)	**684** (517-886)	**1550** (1190-1790)	**2470** (1930-3040)	**3040** (2390-4560)	535
Females	11-12	**610** (547-680)	**660** (522-765)	**1160** (970-1280)	**1850** (1400-2420)	**2620** (1810-3330)	355
Nonsmokers							
Total	11-12	**57.7** (52.9-63.0)	**58.0** (53.0-61.0)	**104** (94.0-117)	**194** (169-213)	**289** (230-377)	1320
Age group							
20-49 years	11-12	**64.0** (57.0-71.9)	**62.0** (56.0-74.0)	**125** (116-147)	**229** (199-273)	**347** (267-463)	662
50 years and older	11-12	**51.6** (45.1-59.1)	**53.0** (45.0-59.0)	**82.0** (68.0-102)	**147** (115-195)	**214** (156-351)	658
Gender							
Males	11-12	**70.4** (61.4-80.8)	**63.0** (59.0-72.0)	**124** (104-153)	**230** (187-302)	**346** (240-818)	628
Females	11-12	**49.1** (44.5-54.3)	**51.0** (47.0-56.0)	**88.0** (79.0-99.0)	**164** (147-176)	**229** (184-289)	692

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 3-Hydroxyfluorene (creatinine corrected)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**662** (595-738)	**760** (679-826)	**1200** (1100-1350)	**1760** (1470-2050)	**2060** (2000-2260)	890
Age group							
20-49 years	11-12	**583** (510-667)	**642** (568-728)	**1130** (978-1230)	**1660** (1330-2040)	**2050** (1710-2330)	534
50 years and older	11-12	**819** (717-937)	**964** (826-1070)	**1350** (1080-1650)	**1910** (1560-2060)	**2060** (1680-2420)	356
Gender							
Males	11-12	**583** (508-669)	**637** (568-736)	**1080** (940-1200)	**1600** (1250-2050)	**2050** (1500-2140)	535
Females	11-12	**777** (652-926)	**936** (796-1080)	**1330** (1120-1650)	**1940** (1420-2410)	**2320** (2040-2420)	355
Nonsmokers							
Total	11-12	**66.9** (62.0-72.1)	**59.3** (54.6-65.3)	**100** (90.6-107)	**172** (147-207)	**251** (201-311)	1319
Age group							
20-49 years	11-12	**68.8** (62.4-75.9)	**59.1** (54.0-67.3)	**103** (83.2-122)	**183** (148-242)	**251** (194-328)	661
50 years and older	11-12	**64.8** (56.9-73.8)	**60.5** (50.2-69.1)	**94.6** (87.5-105)	**167** (135-182)	**249** (170-372)	658
Gender							
Males	11-12	**61.4** (53.6-70.3)	**51.9** (48.8-58.8)	**87.7** (77.8-101)	**149** (117-192)	**233** (151-535)	627
Females	11-12	**71.6** (65.5-78.3)	**66.7** (57.6-75.8)	**107** (95.5-126)	**193** (155-239)	**251** (217-300)	692

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 9-Hydroxyfluorene

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**609** (554-670)	**658** (600-711)	**1210** (1030-1330)	**1960** (1640-2560)	**3100** (2410-3730)	890
Age group							
20-49 years	11-12	**565** (495-644)	**621** (516-664)	**1100** (915-1230)	**1750** (1460-2400)	**2590** (1970-3680)	534
50 years and older	11-12	**691** (594-804)	**801** (603-901)	**1370** (1150-1510)	**2470** (1730-2840)	**3460** (2470-4020)	356
Gender							
Males	11-12	**602** (527-689)	**658** (526-781)	**1190** (972-1420)	**2370** (1570-3460)	**3460** (2340-4020)	535
Females	11-12	**618** (531-719)	**650** (539-750)	**1210** (917-1360)	**1740** (1440-2450)	**2590** (1790-3730)	355
Nonsmokers							
Total	11-12	**207** (191-224)	**203** (186-222)	**385** (340-419)	**795** (664-913)	**1230** (945-1420)	1324
Age group							
20-49 years	11-12	**217** (190-247)	**224** (191-260)	**409** (372-459)	**893** (710-1080)	**1310** (1080-1350)	663
50 years and older	11-12	**197** (168-231)	**183** (141-236)	**340** (297-386)	**711** (524-909)	**988** (728-1780)	661
Gender							
Males	11-12	**247** (218-280)	**248** (208-286)	**436** (388-524)	**879** (694-1070)	**1310** (1010-1780)	629
Females	11-12	**179** (161-199)	**180** (157-197)	**325** (291-384)	**712** (495-877)	**1150** (775-1610)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 9-Hydroxyfluorene (creatinine corrected)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**666** (592-751)	**664** (606-738)	**1150** (1040-1290)	**1850** (1600-2110)	**2630** (1990-3640)	890
Age group							
20-49 years	11-12	**580** (496-678)	**556** (495-630)	**961** (829-1130)	**1600** (1250-1950)	**2630** (1600-4950)	534
50 years and older	11-12	**841** (725-974)	**900** (804-1040)	**1410** (1150-1660)	**2010** (1610-2570)	**2570** (2010-2970)	356
Gender							
Males	11-12	**583** (496-686)	**597** (541-672)	**1040** (866-1140)	**1510** (1320-1990)	**2260** (1710-3030)	535
Females	11-12	**787** (710-871)	**763** (658-925)	**1360** (1150-1600)	**2010** (1710-2630)	**2700** (2010-3890)	355
Nonsmokers							
Total	11-12	**240** (220-261)	**218** (196-243)	**366** (330-420)	**700** (573-828)	**959** (805-1130)	1323
Age group							
20-49 years	11-12	**233** (212-257)	**210** (186-239)	**366** (326-407)	**646** (542-901)	**1080** (788-1160)	662
50 years and older	11-12	**247** (216-283)	**230** (193-275)	**367** (324-474)	**704** (536-917)	**921** (783-1080)	661
Gender							
Males	11-12	**215** (194-239)	**192** (178-212)	**316** (281-368)	**621** (400-917)	**917** (620-1260)	628
Females	11-12	**261** (234-292)	**245** (208-290)	**404** (353-490)	**750** (585-914)	**986** (914-1140)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**198** (179-218)	**208** (178-239)	**383** (324-433)	**589** (526-709)	**758** (671-888)	890
Age group							
20-49 years	11-12	**195** (168-226)	**210** (167-247)	**378** (319-420)	**589** (512-688)	**709** (550-875)	534
50 years and older	11-12	**202** (181-225)	**206** (163-264)	**408** (308-459)	**687** (466-823)	**809** (547-1170)	356
Gender							
Males	11-12	**190** (170-213)	**208** (168-238)	**391** (328-439)	**594** (507-756)	**758** (665-864)	535
Females	11-12	**207** (179-240)	**208** (177-247)	**378** (282-459)	**580** (445-907)	**790** (556-1170)	355
Nonsmokers							
Total	11-12	**115** (107-124)	**114** (104-125)	**214** (195-235)	**363** (307-443)	**535** (428-639)	1324
Age group							
20-49 years	11-12	**121** (108-135)	**127** (107-141)	**242** (209-258)	**428** (330-495)	**544** (451-629)	663
50 years and older	11-12	**110** (95.7-125)	**104** (91.0-122)	**193** (173-219)	**322** (271-386)	**466** (340-851)	661
Gender							
Males	11-12	**128** (115-142)	**130** (110-143)	**231** (201-262)	**365** (304-450)	**498** (384-774)	629
Females	11-12	**106** (95.4-118)	**103** (94.0-110)	**198** (174-238)	**356** (289-461)	**540** (371-639)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 1-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**216** (200-234)	**212** (194-247)	**321** (292-360)	**488** (426-543)	**583** (528-609)	890
Age group							
20-49 years	11-12	**200** (185-217)	**197** (178-220)	**301** (270-340)	**423** (365-479)	**518** (465-628)	534
50 years and older	11-12	**245** (219-275)	**249** (212-273)	**383** (300-491)	**543** (448-583)	**583** (543-733)	356
Gender							
Males	11-12	**184** (169-201)	**181** (165-206)	**280** (247-303)	**377** (347-420)	**491** (392-531)	535
Females	11-12	**264** (243-287)	**270** (232-300)	**416** (326-481)	**543** (500-600)	**640** (543-859)	355
Nonsmokers							
Total	11-12	**134** (123-145)	**125** (113-134)	**200** (177-217)	**335** (270-393)	**497** (384-655)	1323
Age group							
20-49 years	11-12	**130** (119-142)	**122** (108-133)	**194** (167-216)	**313** (244-393)	**473** (351-598)	662
50 years and older	11-12	**138** (122-155)	**127** (111-143)	**201** (174-223)	**340** (272-463)	**503** (372-683)	661
Gender							
Males	11-12	**111** (102-122)	**100** (91.4-110)	**152** (136-174)	**260** (195-367)	**393** (260-598)	628
Females	11-12	**154** (137-174)	**143** (126-162)	**221** (201-254)	**357** (305-495)	**562** (453-831)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**113** (105-121)	**109** (103-130)	**210** (193-228)	**334** (301-364)	**413** (374-466)	889
Age group							
20-49 years	11-12	**109** (96.8-122)	**108** (99.0-126)	**204** (178-228)	**303** (248-357)	**399** (341-457)	534
50 years and older	11-12	**120** (109-133)	**121** (95.0-151)	**219** (202-263)	**366** (301-413)	**448** (369-498)	355
Gender							
Males	11-12	**118** (108-129)	**130** (105-149)	**224** (202-248)	**360** (287-379)	**435** (374-503)	535
Females	11-12	**106** (94.4-120)	**106** (89.0-121)	**190** (151-219)	**266** (232-357)	**380** (288-481)	354
Nonsmokers							
Total	11-12	**53.9** (50.1-58.0)	**52.0** (49.0-57.0)	**95.0** (84.0-105)	**175** (148-202)	**264** (196-313)	1321
Age group							
20-49 years	11-12	**58.6** (53.3-64.5)	**62.0** (53.0-68.0)	**107** (96.0-122)	**187** (167-223)	**266** (210-334)	663
50 years and older	11-12	**49.1** (42.6-56.6)	**47.0** (41.0-55.0)	**82.0** (67.0-95.0)	**139** (113-226)	**259** (141-348)	658
Gender							
Males	11-12	**66.5** (58.9-75.1)	**66.0** (55.0-78.0)	**119** (101-128)	**198** (168-251)	**277** (209-377)	628
Females	11-12	**45.5** (41.9-49.3)	**46.0** (43.0-49.0)	**75.0** (67.0-93.0)	**141** (112-186)	**232** (156-303)	693

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 2-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**123** (114-133)	**126** (116-133)	**192** (169-207)	**288** (245-321)	**356** (303-412)	889
Age group							
20-49 years	11-12	**112** (103-121)	**109** (103-116)	**175** (154-192)	**258** (221-290)	**327** (258-529)	534
50 years and older	11-12	**146** (130-164)	**146** (131-159)	**215** (183-271)	**318** (243-356)	**376** (309-472)	355
Gender							
Males	11-12	**114** (104-126)	**116** (101-128)	**175** (148-193)	**264** (206-327)	**385** (242-442)	535
Females	11-12	**135** (122-150)	**141** (123-153)	**218** (189-245)	**303** (247-336)	**356** (303-529)	354
Nonsmokers							
Total	11-12	**62.4** (57.9-67.3)	**57.9** (54.5-60.6)	**91.4** (79.2-100)	**153** (120-179)	**207** (162-282)	1320
Age group							
20-49 years	11-12	**63.0** (58.8-67.5)	**59.5** (54.5-63.5)	**90.0** (81.2-99.1)	**144** (114-170)	**185** (162-291)	662
50 years and older	11-12	**61.7** (54.2-70.1)	**56.7** (48.7-64.8)	**92.3** (72.6-105)	**156** (120-203)	**218** (156-303)	658
Gender							
Males	11-12	**57.9** (52.3-64.2)	**53.3** (49.1-56.7)	**78.7** (66.5-101)	**145** (109-182)	**184** (144-281)	627
Females	11-12	**66.2** (60.3-72.7)	**61.7** (57.1-68.3)	**93.1** (84.2-103)	**156** (116-193)	**226** (163-292)	693

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 3-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**140** (125-157)	**146** (124-164)	**273** (230-328)	**517** (444-550)	**635** (572-698)	890
Age group							
20-49 years	11-12	**137** (117-160)	**141** (116-167)	**268** (211-324)	**510** (400-576)	**637** (563-691)	534
50 years and older	11-12	**145** (130-163)	**152** (127-183)	**286** (223-375)	**525** (422-633)	**633** (495-784)	356
Gender							
Males	11-12	**146** (128-166)	**162** (130-185)	**315** (264-377)	**550** (525-625)	**698** (625-790)	535
Females	11-12	**133** (116-152)	**129** (113-153)	**256** (198-286)	**389** (323-480)	**504** (401-649)	355
Nonsmokers							
Total	11-12	**48.8** (44.8-53.2)	**48.0** (44.0-54.0)	**90.0** (81.0-100)	**170** (139-202)	**245** (202-296)	1323
Age group							
20-49 years	11-12	**53.6** (47.8-60.1)	**56.0** (47.0-64.0)	**109** (90.0-128)	**190** (166-215)	**284** (206-372)	663
50 years and older	11-12	**44.1** (37.8-51.5)	**43.0** (34.0-54.0)	**76.0** (63.0-91.0)	**135** (101-186)	**221** (146-265)	660
Gender							
Males	11-12	**59.7** (51.6-69.0)	**59.0** (48.0-68.0)	**111** (91.0-135)	**195** (162-251)	**285** (211-393)	629
Females	11-12	**41.5** (38.0-45.3)	**40.0** (37.0-45.0)	**80.0** (65.0-87.0)	**135** (105-175)	**206** (173-217)	694

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 3-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**153** (144-163)	**160** (147-173)	**255** (229-280)	**370** (347-410)	**460** (416-497)	890
Age group							
20-49 years	11-12	**140** (129-153)	**145** (128-162)	**230** (208-255)	**353** (296-387)	**416** (361-525)	534
50 years and older	11-12	**177** (160-195)	**193** (161-222)	**300** (255-346)	**427** (348-446)	**474** (407-560)	356
Gender							
Males	11-12	**142** (132-152)	**153** (130-162)	**229** (214-250)	**354** (324-406)	**460** (405-474)	535
Females	11-12	**169** (149-191)	**176** (151-204)	**278** (245-327)	**391** (361-421)	**466** (410-667)	355
Nonsmokers							
Total	11-12	**56.6** (52.3-61.3)	**52.2** (48.6-56.1)	**82.8** (75.0-95.2)	**148** (121-168)	**203** (157-300)	1322
Age group							
20-49 years	11-12	**57.7** (53.2-62.6)	**52.2** (47.7-57.8)	**82.6** (74.9-95.1)	**150** (118-171)	**201** (163-250)	662
50 years and older	11-12	**55.5** (48.5-63.5)	**52.2** (44.5-60.0)	**82.8** (69.8-102)	**143** (110-172)	**208** (147-338)	660
Gender							
Males	11-12	**52.0** (46.2-58.5)	**48.0** (42.0-54.2)	**76.7** (63.7-93.6)	**139** (107-164)	**185** (140-269)	628
Females	11-12	**60.6** (54.9-66.9)	**55.8** (51.0-61.6)	**87.0** (76.3-105)	**149** (124-178)	**231** (153-334)	694

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 4-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**38.2** (35.2-41.5)	**42.0** (35.0-46.0)	**75.0** (67.0-82.0)	**116** (102-137)	**148** (134-178)	879
Age group							
20-49 years	11-12	**36.3** (32.4-40.7)	**36.0** (31.0-46.0)	**73.0** (61.0-82.0)	**107** (98.0-125)	**144** (115-182)	529
50 years and older	11-12	**41.6** (36.8-46.9)	**46.0** (39.0-51.0)	**77.0** (66.0-99.0)	**132** (114-148)	**156** (126-202)	350
Gender							
Males	11-12	**35.1** (30.6-40.2)	**35.0** (31.0-44.0)	**74.0** (63.0-83.0)	**121** (100-148)	**154** (126-189)	529
Females	11-12	**42.5** (37.1-48.6)	**48.0** (39.0-53.0)	**76.0** (63.0-90.0)	**110** (96.0-146)	**147** (117-182)	350
Nonsmokers							
Total	11-12	**17.7** (16.5-19.0)	**16.0** (15.0-17.0)	**30.0** (27.0-34.0)	**57.0** (45.0-72.0)	**84.0** (74.0-97.0)	1320
Age group							
20-49 years	11-12	**19.6** (17.5-22.0)	**18.0** (15.0-22.0)	**35.0** (31.0-41.0)	**67.0** (50.0-82.0)	**90.0** (72.0-117)	662
50 years and older	11-12	**15.8** (14.0-17.8)	**14.0** (12.0-17.0)	**26.0** (23.0-29.0)	**40.0** (34.0-62.0)	**81.0** (44.0-134)	658
Gender							
Males	11-12	**19.8** (17.6-22.3)	**20.0** (16.0-23.0)	**34.0** (30.0-38.0)	**63.0** (45.0-81.0)	**84.0** (68.0-107)	627
Females	11-12	**16.1** (14.7-17.7)	**14.0** (12.0-16.0)	**26.0** (22.0-31.0)	**49.0** (40.0-73.0)	**84.0** (62.0-121)	693

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 4-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**41.6** (37.5-46.1)	**43.5** (39.6-46.7)	**75.8** (62.4-91.1)	**124** (103-144)	**147** (135-159)	879
Age group							
20-49 years	11-12	**37.2** (33.0-42.1)	**39.4** (35.4-43.4)	**62.9** (55.2-76.9)	**112** (90.7-130)	**135** (121-175)	529
50 years and older	11-12	**50.0** (43.6-57.5)	**53.8** (45.2-61.2)	**91.1** (76.5-105)	**143** (96.2-158)	**154** (136-188)	350
Gender							
Males	11-12	**34.0** (29.4-39.3)	**37.6** (33.8-41.8)	**58.5** (51.9-67.2)	**96.2** (78.7-107)	**121** (92.4-159)	529
Females	11-12	**53.6** (46.1-62.2)	**58.9** (45.7-62.9)	**103** (75.0-124)	**143** (121-154)	**159** (144-210)	350
Nonsmokers							
Total	11-12	**20.4** (19.1-21.9)	**19.7** (18.5-21.0)	**30.2** (26.5-33.3)	**50.7** (41.8-65.0)	**79.6** (51.9-111)	1319
Age group							
20-49 years	11-12	**21.0** (19.2-22.9)	**20.3** (18.6-22.2)	**30.9** (26.3-35.1)	**51.3** (43.9-66.7)	**80.5** (54.6-117)	661
50 years and older	11-12	**19.8** (17.8-22.1)	**18.6** (17.7-21.0)	**29.6** (25.5-32.4)	**48.8** (37.3-65.0)	**79.6** (47.3-111)	658
Gender							
Males	11-12	**17.3** (16.0-18.7)	**17.2** (15.8-18.2)	**25.1** (23.3-27.2)	**39.7** (31.7-51.5)	**56.4** (39.1-111)	626
Females	11-12	**23.4** (21.3-25.7)	**22.2** (20.3-24.5)	**34.5** (29.6-38.5)	**55.3** (47.3-79.6)	**88.8** (56.5-148)	693

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxypyrene

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**243** (213-278)	**243** (204-289)	**493** (412-566)	**820** (698-1010)	**1230** (918-1620)	889
Age group							
20-49 years	11-12	**247** (204-300)	**243** (204-303)	**493** (383-627)	**831** (674-1180)	**1230** (774-2010)	533
50 years and older	11-12	**237** (209-269)	**238** (166-303)	**489** (384-543)	**785** (603-1120)	**1120** (773-1530)	356
Gender							
Males	11-12	**238** (204-279)	**239** (202-295)	**518** (445-628)	**866** (773-1080)	**1230** (1020-1380)	535
Females	11-12	**250** (211-295)	**243** (199-295)	**436** (342-549)	**730** (536-1210)	**1180** (620-2520)	354
Nonsmokers							
Total	11-12	**82.8** (76.4-89.7)	**85.0** (78.0-94.0)	**151** (138-174)	**271** (232-310)	**406** (327-450)	1322
Age group							
20-49 years	11-12	**99.0** (87.7-112)	**101** (92.0-114)	**195** (168-227)	**319** (278-376)	**447** (349-501)	663
50 years and older	11-12	**68.0** (60.5-76.5)	**71.0** (58.0-85.0)	**121** (100-135)	**193** (167-213)	**303** (205-424)	659
Gender							
Males	11-12	**93.9** (84.9-104)	**96.0** (86.0-109)	**175** (145-198)	**304** (231-415)	**450** (334-599)	628
Females	11-12	**74.8** (67.9-82.3)	**75.0** (65.0-85.0)	**136** (121-158)	**248** (198-302)	**350** (280-415)	694

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 1-Hydroxypyrene (creatinine corrected)

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**266** (246-289)	**271** (256-289)	**435** (392-466)	**688** (561-804)	**904** (711-1070)	889
Age group							
20-49 years	11-12	**254** (226-285)	**256** (219-288)	**417** (374-482)	**700** (522-869)	**959** (589-1300)	533
50 years and older	11-12	**288** (261-318)	**301** (264-350)	**450** (385-561)	**662** (572-883)	**899** (744-1070)	356
Gender							
Males	11-12	**231** (212-251)	**233** (208-260)	**385** (340-418)	**542** (482-678)	**804** (580-993)	535
Females	11-12	**319** (277-367)	**330** (290-385)	**493** (411-646)	**769** (587-966)	**959** (646-1270)	354
Nonsmokers							
Total	11-12	**96.8** (90.8-103)	**92.6** (88.1-100)	**149** (140-162)	**243** (211-271)	**335** (280-438)	1321
Age group							
20-49 years	11-12	**107** (99.6-114)	**105** (94.2-114)	**163** (147-183)	**252** (225-278)	**313** (270-371)	662
50 years and older	11-12	**87.1** (77.6-97.8)	**84.7** (74.6-90.9)	**126** (113-146)	**218** (182-280)	**371** (224-569)	659
Gender							
Males	11-12	**82.1** (74.1-90.9)	**80.8** (72.3-86.1)	**122** (109-135)	**206** (163-279)	**298** (225-478)	627
Females	11-12	**111** (101-120)	**104** (94.2-119)	**169** (154-183)	**258** (224-295)	**371** (307-460)	694

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxynapthalene (1-Naphthol)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**9.59** (8.38-11.0)	**10.7** (8.57-12.1)	**20.1** (17.5-22.4)	**33.6** (28.2-37.1)	**42.6** (35.7-49.0)	890
Age group							
20-49 years	11-12	**8.75** (7.31-10.5)	**10.2** (7.81-11.9)	**18.6** (15.0-21.7)	**29.1** (23.5-36.4)	**37.1** (32.7-48.4)	534
50 years and older	11-12	**11.2** (9.78-12.7)	**11.8** (8.54-14.7)	**22.7** (18.5-26.0)	**38.8** (27.0-43.3)	**44.5** (38.8-147)	356
Gender							
Males	11-12	**9.21** (7.46-11.4)	**10.9** (8.66-12.5)	**21.3** (17.5-24.2)	**35.7** (26.6-42.6)	**43.3** (36.5-49.0)	535
Females	11-12	**10.1** (9.01-11.3)	**10.1** (8.08-12.1)	**18.5** (15.8-21.4)	**32.7** (23.5-35.9)	**41.0** (35.1-58.5)	355
Nonsmokers							
Total	11-12	**1.19** (1.09-1.29)	**1.09** (.976-1.20)	**2.36** (2.13-2.50)	**5.46** (4.58-6.63)	**10.3** (7.49-12.4)	1324
Age group							
20-49 years	11-12	**1.03** (.956-1.12)	**.967** (.833-1.10)	**1.94** (1.79-2.35)	**4.76** (3.48-6.39)	**8.63** (6.63-11.9)	663
50 years and older	11-12	**1.38** (1.19-1.60)	**1.25** (.976-1.60)	**2.58** (2.20-2.96)	**5.83** (4.60-7.74)	**11.6** (8.99-16.0)	661
Gender							
Males	11-12	**1.35** (1.19-1.54)	**1.21** (.989-1.51)	**2.53** (2.26-2.89)	**5.82** (5.03-6.96)	**10.4** (6.77-19.2)	629
Females	11-12	**1.07** (.913-1.25)	**.976** (.860-1.14)	**2.07** (1.82-2.50)	**4.97** (3.42-7.26)	**10.3** (5.83-12.9)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.044.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 1-Hydroxynapthalene (1-Naphthol) (creatinine corrected)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**10.5** (9.06-12.1)	**12.0** (9.83-13.1)	**18.4** (15.8-20.0)	**29.1** (24.0-36.4)	**38.8** (32.3-46.1)	890
Age group							
20-49 years	11-12	**8.99** (7.66-10.5)	**9.39** (8.04-12.0)	**15.6** (13.7-18.3)	**24.8** (20.1-31.3)	**36.6** (29.3-39.0)	534
50 years and older	11-12	**13.6** (11.4-16.2)	**13.6** (13.0-17.2)	**20.3** (17.6-26.3)	**34.7** (25.3-42.2)	**42.2** (29.6-298)	356
Gender							
Males	11-12	**8.92** (7.41-10.7)	**9.46** (8.27-11.8)	**14.3** (13.1-18.1)	**22.2** (18.8-26.6)	**31.3** (23.3-38.8)	535
Females	11-12	**12.8** (10.6-15.5)	**14.2** (12.6-15.8)	**20.7** (18.6-28.4)	**36.4** (28.7-41.9)	**44.0** (36.6-50.3)	355
Nonsmokers							
Total	11-12	**1.37** (1.25-1.51)	**1.17** (1.05-1.32)	**2.43** (2.03-2.90)	**5.39** (4.56-6.86)	**9.93** (7.86-12.4)	1323
Age group							
20-49 years	11-12	**1.11** (1.00-1.24)	**.987** (.849-1.13)	**1.90** (1.69-2.31)	**3.62** (3.16-4.97)	**6.62** (5.19-8.79)	662
50 years and older	11-12	**1.73** (1.51-1.98)	**1.49** (1.18-1.76)	**3.06** (2.45-4.07)	**7.51** (5.54-10.6)	**15.8** (9.93-19.1)	661
Gender							
Males	11-12	**1.18** (1.03-1.34)	**.963** (.800-1.18)	**1.94** (1.68-2.45)	**4.08** (3.18-6.65)	**8.60** (6.62-12.2)	628
Females	11-12	**1.56** (1.35-1.80)	**1.39** (1.17-1.65)	**2.88** (2.27-3.42)	**5.91** (5.19-7.40)	**10.5** (7.80-13.6)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxynapthalene (2-Naphthol)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**12.4** (11.0-13.8)	**13.1** (11.7-14.8)	**24.4** (20.9-27.7)	**36.8** (32.4-45.1)	**48.9** (44.6-51.6)	890
Age group							
20-49 years	11-12	**12.2** (10.4-14.3)	**13.5** (10.9-16.0)	**24.1** (20.3-28.2)	**33.2** (30.0-43.4)	**46.2** (34.4-51.2)	534
50 years and older	11-12	**12.7** (11.1-14.5)	**12.7** (10.6-15.8)	**25.0** (19.8-30.2)	**44.6** (36.1-51.1)	**54.1** (36.6-85.2)	356
Gender							
Males	11-12	**11.9** (10.1-14.0)	**13.0** (11.2-15.5)	**25.6** (21.3-28.7)	**41.5** (31.2-51.1)	**51.2** (36.6-60.6)	535
Females	11-12	**13.0** (11.7-14.4)	**13.3** (10.9-15.0)	**23.6** (19.8-27.5)	**36.1** (29.1-45.6)	**45.6** (35.9-52.8)	355
Nonsmokers							
Total	11-12	**3.17** (2.87-3.51)	**3.22** (2.81-3.72)	**6.35** (5.53-7.35)	**13.1** (11.0-15.2)	**19.3** (15.8-21.6)	1324
Age group							
20-49 years	11-12	**3.73** (3.20-4.34)	**3.95** (3.19-4.53)	**8.19** (6.31-10.4)	**15.3** (12.0-19.1)	**21.1** (17.9-24.2)	663
50 years and older	11-12	**2.67** (2.33-3.05)	**2.54** (2.28-3.22)	**5.27** (4.37-6.05)	**10.5** (8.44-11.5)	**15.0** (11.5-20.0)	661
Gender							
Males	11-12	**3.40** (3.07-3.76)	**3.48** (2.99-4.07)	**6.26** (5.42-7.04)	**11.5** (10.7-14.4)	**16.9** (14.3-22.5)	629
Females	11-12	**3.01** (2.58-3.50)	**2.91** (2.47-3.74)	**6.61** (5.29-8.56)	**13.6** (11.3-16.6)	**20.5** (16.6-21.8)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.042.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary 2-Hydroxynapthalene (2-Naphthol) (creatinine corrected)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**13.5** (12.3-14.8)	**14.3** (13.2-15.5)	**21.0** (19.1-22.7)	**28.7** (24.8-32.6)	**34.6** (30.0-39.4)	890
Age group							
20-49 years	11-12	**12.5** (11.2-14.0)	**13.0** (11.3-14.5)	**19.2** (17.6-20.8)	**26.9** (22.6-30.8)	**33.2** (28.0-41.3)	534
50 years and older	11-12	**15.4** (13.9-17.1)	**17.6** (14.9-18.6)	**23.6** (21.4-25.5)	**31.4** (25.8-35.7)	**35.7** (29.0-41.3)	356
Gender							
Males	11-12	**11.5** (10.2-12.9)	**12.4** (10.9-13.5)	**18.1** (15.4-19.6)	**23.7** (20.1-28.6)	**29.0** (23.6-35.7)	535
Females	11-12	**16.6** (14.7-18.7)	**18.1** (15.2-20.2)	**24.2** (21.4-28.5)	**33.2** (27.7-39.4)	**39.4** (34.5-43.0)	355
Nonsmokers							
Total	11-12	**3.69** (3.46-3.93)	**3.42** (3.13-3.84)	**6.50** (5.74-7.24)	**11.9** (10.0-12.6)	**15.5** (13.5-17.9)	1323
Age group							
20-49 years	11-12	**4.02** (3.58-4.53)	**3.82** (3.21-4.31)	**7.35** (6.22-8.90)	**12.8** (11.6-13.7)	**16.6** (14.6-20.1)	662
50 years and older	11-12	**3.35** (2.99-3.76)	**3.18** (2.54-3.57)	**5.72** (4.64-6.86)	**9.63** (8.40-11.5)	**13.0** (10.0-17.3)	661
Gender							
Males	11-12	**2.97** (2.69-3.27)	**2.79** (2.48-3.23)	**4.81** (4.17-5.74)	**8.72** (7.23-9.62)	**12.1** (9.22-14.6)	628
Females	11-12	**4.38** (3.95-4.86)	**4.18** (3.44-5.03)	**7.66** (7.15-8.92)	**13.2** (12.1-15.5)	**17.9** (15.8-20.5)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html**

Urinary N-Acetyl-S-(benzyl)-L-cysteine

Metabolite of Toluene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**6.47** (5.58-7.51)	**6.47** (5.44-7.59)	**13.2** (11.0-16.9)	**25.8** (18.2-38.7)	**41.8** (28.8-83.4)	889
Age group							
20-49 years	11-12	**6.78** (5.74-8.01)	**6.47** (5.39-8.37)	**13.6** (11.2-17.3)	**29.9** (17.1-45.3)	**44.5** (25.9-132)	532
50 years and older	11-12	**6.00** (5.06-7.10)	**5.92** (4.93-7.28)	**12.4** (9.09-17.3)	**22.5** (18.2-28.7)	**33.9** (25.6-51.5)	357
Gender							
Males	11-12	**6.85** (5.73-8.18)	**7.09** (5.88-8.37)	**14.8** (11.2-17.3)	**28.8** (18.2-42.8)	**42.0** (28.8-114)	536
Females	11-12	**6.04** (5.02-7.26)	**5.92** (4.89-6.99)	**11.9** (8.55-17.0)	**20.7** (16.1-34.4)	**40.5** (22.5-60.3)	353
Nonsmokers							
Total	11-12	**6.45** (5.91-7.05)	**6.32** (5.95-6.96)	**11.8** (10.1-13.8)	**23.2** (19.0-29.0)	**37.0** (29.5-53.9)	1308
Age group							
20-49 years	11-12	**6.55** (5.72-7.50)	**6.24** (5.35-8.01)	**12.3** (10.0-16.2)	**27.5** (18.8-34.2)	**40.5** (33.1-54.9)	655
50 years and older	11-12	**6.35** (5.76-7.00)	**6.53** (5.91-7.16)	**10.9** (9.83-13.4)	**20.1** (17.5-25.4)	**32.7** (25.3-39.7)	653
Gender							
Males	11-12	**6.96** (6.24-7.76)	**6.86** (6.21-7.82)	**12.2** (10.1-14.0)	**22.0** (17.6-32.6)	**39.5** (24.2-72.4)	625
Females	11-12	**6.07** (5.40-6.83)	**6.05** (5.35-6.81)	**11.8** (9.46-15.9)	**24.4** (19.1-29.7)	**35.9** (29.5-53.9)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Toluene_BiomonitoringSummary.html

Urinary N-Acetyl-S-(benzyl)-L-cysteine (creatinine corrected)

Metabolite of Toluene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**7.10** (6.51-7.73)	**6.26** (5.79-7.08)	**11.5** (9.67-13.3)	**20.4** (15.4-25.2)	**32.0** (20.6-52.9)	889
Age group							
20-49 years	11-12	**6.98** (6.08-8.02)	**6.30** (5.49-7.11)	**9.83** (8.70-12.4)	**20.6** (13.6-32.0)	**32.0** (16.5-138)	532
50 years and older	11-12	**7.29** (6.52-8.15)	**6.12** (5.79-7.99)	**14.9** (10.5-15.3)	**19.7** (16.2-23.8)	**29.3** (23.1-47.7)	357
Gender							
Males	11-12	**6.65** (5.86-7.55)	**5.91** (5.34-7.02)	**9.71** (8.82-12.6)	**20.4** (13.8-30.4)	**30.4** (16.7-138)	536
Females	11-12	**7.70** (6.70-8.85)	**7.11** (5.66-7.63)	**12.9** (10.6-15.2)	**21.0** (16.5-27.6)	**40.0** (24.9-51.8)	353
Nonsmokers							
Total	11-12	**7.50** (6.89-8.16)	**6.72** (6.23-7.47)	**12.7** (11.1-14.0)	**23.0** (19.0-26.2)	**39.4** (27.4-49.1)	1307
Age group							
20-49 years	11-12	**7.08** (6.45-7.76)	**6.39** (5.90-6.82)	**11.7** (10.0-13.7)	**19.7** (17.0-24.5)	**31.8** (23.2-44.7)	654
50 years and older	11-12	**7.99** (7.24-8.82)	**7.30** (6.59-7.96)	**13.5** (11.3-16.0)	**26.1** (18.2-37.3)	**44.1** (31.0-55.5)	653
Gender							
Males	11-12	**6.06** (5.51-6.68)	**5.56** (5.20-5.86)	**8.56** (7.89-10.0)	**17.0** (12.7-20.6)	**26.5** (18.2-39.6)	624
Females	11-12	**8.90** (7.90-10.0)	**8.11** (7.11-9.37)	**15.3** (13.0-17.6)	**26.1** (22.8-31.8)	**44.7** (31.0-55.3)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Toluene_BiomonitoringSummary.html**

Urinary N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**28.4** (25.2-32.0)	**27.5** (24.1-34.2)	**53.8** (47.2-61.8)	**98.1** (73.2-132)	**138** (98.9-169)	889
Age group							
20-49 years	11-12	**29.8** (25.0-35.6)	**31.7** (23.9-38.8)	**54.8** (47.2-70.9)	**106** (73.6-142)	**142** (101-222)	532
50 years and older	11-12	**26.2** (21.8-31.4)	**25.4** (18.8-31.4)	**47.5** (38.5-62.7)	**80.7** (64.2-116)	**129** (70.6-154)	357
Gender							
Males	11-12	**28.5** (24.3-33.5)	**28.6** (23.5-37.9)	**53.8** (46.5-63.8)	**98.9** (72.6-131)	**138** (98.2-154)	536
Females	11-12	**28.3** (24.5-32.7)	**25.4** (23.9-31.1)	**52.4** (42.6-66.5)	**94.3** (57.7-142)	**142** (72.9-222)	353
Nonsmokers							
Total	11-12	**12.9** (12.2-13.7)	**12.3** (11.0-13.8)	**19.9** (18.6-21.2)	**30.5** (28.3-33.3)	**41.5** (34.8-50.9)	1308
Age group							
20-49 years	11-12	**13.6** (12.3-15.0)	**12.8** (10.8-15.0)	**21.2** (18.6-24.7)	**33.2** (28.0-43.3)	**50.7** (34.8-74.9)	655
50 years and older	11-12	**12.2** (11.3-13.2)	**11.9** (10.6-13.5)	**18.7** (16.7-20.5)	**29.1** (23.2-32.9)	**35.8** (28.3-50.6)	653
Gender							
Males	11-12	**14.4** (13.4-15.6)	**14.4** (13.0-15.5)	**21.6** (20.2-24.1)	**31.8** (28.9-36.2)	**39.7** (34.4-52.5)	625
Females	11-12	*	**10.4** (<LOD-12.3)	**18.0** (16.4-19.8)	**28.2** (23.7-34.5)	**43.3** (30.4-56.5)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 9.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html**

Urinary N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrylamide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**31.1** (28.0-34.6)	**32.1** (28.0-36.9)	**44.6** (40.2-51.7)	**64.6** (57.9-71.3)	**78.3** (71.0-84.4)	889
Age group							
20-49 years	11-12	**30.7** (27.0-35.0)	**32.1** (27.7-36.3)	**44.0** (39.1-54.8)	**68.9** (55.4-83.4)	**84.4** (71.0-98.0)	532
50 years and older	11-12	**31.8** (27.7-36.5)	**32.1** (27.7-40.2)	**46.2** (39.1-53.8)	**60.7** (48.4-72.6)	**72.6** (53.2-95.4)	357
Gender							
Males	11-12	**27.7** (24.7-31.1)	**28.0** (25.5-32.0)	**39.1** (34.1-44.3)	**54.7** (46.2-61.2)	**68.1** (57.3-81.5)	536
Females	11-12	*	**38.1** (<LOD-42.8)	**53.2** (44.0-61.8)	**71.3** (60.7-84.4)	**84.4** (71.0-95.4)	353
Nonsmokers							
Total	11-12	**15.0** (14.1-15.9)	**15.1** (14.1-16.2)	**21.0** (20.2-23.1)	**28.9** (27.7-31.7)	**37.3** (32.0-50.9)	1307
Age group							
20-49 years	11-12	**14.6** (13.5-15.8)	**14.1** (13.6-15.2)	**20.8** (19.0-23.2)	**31.7** (27.0-38.9)	**41.8** (32.1-64.8)	654
50 years and older	11-12	**15.4** (14.2-16.7)	**15.9** (14.4-17.1)	**21.5** (19.9-23.8)	**27.7** (24.9-30.9)	**32.1** (28.6-41.3)	653
Gender							
Males	11-12	**12.5** (11.7-13.5)	**13.0** (12.0-14.1)	**16.6** (15.3-18.0)	**23.5** (20.7-25.6)	**28.5** (24.9-34.3)	624
Females	11-12	*	**17.3** (16.5-18.5)	**24.6** (22.8-27.0)	**33.3** (29.2-40.4)	**50.6** (36.5-64.8)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carbamoylethyl)-L-cysteine

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**111** (95.0-129)	**119** (89.5-142)	**225** (196-256)	**397** (297-507)	**507** (370-686)	889
Age group							
20-49 years	11-12	**119** (95.8-147)	**129** (101-161)	**254** (195-305)	**420** (344-524)	**541** (420-880)	532
50 years and older	11-12	**98.6** (82.1-118)	**86.9** (80.2-138)	**201** (149-243)	**303** (254-400)	**407** (324-529)	357
Gender							
Males	11-12	**116** (95.3-142)	**131** (106-151)	**256** (215-276)	**422** (341-519)	**530** (398-982)	536
Females	11-12	**104** (90.0-120)	**101** (82.1-129)	**197** (160-243)	**348** (251-420)	**420** (316-880)	353
Nonsmokers							
Total	11-12	**36.5** (33.8-39.3)	**37.6** (34.9-40.5)	**64.3** (60.9-68.0)	**112** (99.7-121)	**157** (137-192)	1308
Age group							
20-49 years	11-12	**38.9** (33.9-44.6)	**41.4** (35.1-47.0)	**71.1** (61.4-78.5)	**127** (101-170)	**193** (141-299)	655
50 years and older	11-12	**34.0** (31.5-36.8)	**35.3** (32.5-38.8)	**59.7** (54.8-64.3)	**92.6** (78.8-116)	**129** (103-145)	653
Gender							
Males	11-12	**46.5** (43.6-49.7)	**48.6** (42.8-53.4)	**76.8** (69.6-82.7)	**129** (112-142)	**161** (143-183)	625
Females	11-12	**30.0** (26.9-33.4)	**30.7** (28.7-32.6)	**55.2** (49.0-59.7)	**97.0** (84.0-111)	**145** (101-257)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.2.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html**

Urinary N-Acetyl-S-(2-carbamoylethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrylamide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**121** (110-134)	**128** (115-140)	**180** (162-198)	**253** (229-325)	**337** (278-400)	889
Age group							
20-49 years	11-12	**122** (106-140)	**131** (115-145)	**184** (155-218)	**282** (222-335)	**357** (300-429)	532
50 years and older	11-12	**120** (108-134)	**124** (106-144)	**175** (149-199)	**235** (178-282)	**282** (235-353)	357
Gender							
Males	11-12	**113** (101-127)	**118** (100-138)	**175** (153-186)	**230** (191-278)	**327** (238-434)	536
Females	11-12	**132** (115-152)	**136** (117-161)	**192** (161-235)	**286** (233-343)	**343** (282-398)	353
Nonsmokers							
Total	11-12	**42.4** (39.9-44.9)	**41.8** (39.0-44.9)	**61.2** (57.8-63.5)	**88.1** (79.2-100)	**118** (106-131)	1307
Age group							
20-49 years	11-12	**42.0** (38.1-46.2)	**40.1** (36.6-44.0)	**59.6** (55.8-63.8)	**91.0** (75.6-113)	**128** (98.1-173)	654
50 years and older	11-12	**42.8** (39.3-46.6)	**43.6** (38.9-48.5)	**61.5** (56.7-65.6)	**84.8** (72.9-105)	**112** (90.4-155)	653
Gender							
Males	11-12	**40.5** (38.0-43.2)	**39.0** (35.6-42.1)	**60.4** (52.6-64.3)	**82.5** (75.6-91.0)	**108** (93.8-116)	624
Females	11-12	**43.9** (40.4-47.8)	**44.6** (40.0-47.9)	**62.1** (57.7-65.3)	**91.6** (76.8-113)	**128** (97.3-162)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acrylamide_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Acrylamide_FactSheet.html

Urinary N-Acetyl-S-(2-carboxyethyl)-L-cysteine

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**228** (203-256)	**245** (212-273)	**430** (382-477)	**769** (642-935)	**1030** (869-1320)	889
Age group							
20-49 years	11-12	**202** (176-232)	**221** (195-252)	**377** (332-426)	**654** (598-745)	**886** (743-1020)	532
50 years and older	11-12	**277** (235-326)	**282** (212-373)	**551** (430-664)	**974** (598-1320)	**1310** (956-1810)	357
Gender							
Males	11-12	**232** (200-268)	**258** (208-287)	**453** (403-546)	**855** (636-1130)	**1240** (956-1450)	536
Females	11-12	**223** (197-251)	**224** (182-294)	**385** (332-455)	**692** (527-869)	**929** (706-1130)	353
Nonsmokers							
Total	11-12	**80.6** (74.3-87.5)	**86.7** (79.2-94.7)	**155** (143-170)	**260** (236-296)	**367** (310-448)	1308
Age group							
20-49 years	11-12	**73.7** (65.2-83.4)	**82.4** (73.1-93.2)	**144** (128-161)	**256** (217-284)	**320** (262-411)	655
50 years and older	11-12	**88.8** (80.7-97.8)	**94.6** (82.0-104)	**173** (148-192)	**302** (236-350)	**459** (317-528)	653
Gender							
Males	11-12	**109** (99.6-120)	**110** (97.1-127)	**191** (164-217)	**320** (273-367)	**448** (349-483)	625
Females	11-12	**63.1** (56.4-70.7)	**65.5** (53.3-81.0)	**128** (114-147)	**220** (187-245)	**284** (242-359)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 8.0.

Urinary N-Acetyl-S-(2-carboxyethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrolein

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**250** (224-278)	**254** (226-285)	**410** (373-447)	**607** (492-757)	**815** (656-966)	889
Age group							
20-49 years	11-12	**208** (187-232)	**206** (181-228)	**353** (307-394)	**489** (443-532)	**640** (509-840)	532
50 years and older	11-12	**337** (289-393)	**338** (290-395)	**512** (397-636)	**757** (559-1070)	**966** (607-1510)	357
Gender							
Males	11-12	**225** (197-257)	**228** (202-251)	**368** (306-423)	**510** (431-618)	**634** (540-757)	536
Females	11-12	**284** (256-315)	**291** (254-335)	**455** (419-540)	**749** (542-933)	**948** (749-1070)	353
Nonsmokers							
Total	11-12	**93.6** (87.6-100)	**92.1** (85.1-101)	**143** (132-154)	**206** (190-235)	**278** (251-308)	1307
Age group							
20-49 years	11-12	**79.5** (73.6-85.8)	**78.6** (72.5-85.3)	**119** (107-136)	**176** (153-194)	**202** (190-226)	654
50 years and older	11-12	**112** (102-122)	**107** (102-114)	**167** (152-188)	**277** (221-300)	**351** (300-404)	653
Gender							
Males	11-12	**94.9** (87.5-103)	**88.8** (80.4-102)	**138** (122-154)	**203** (173-277)	**300** (221-351)	624
Females	11-12	**92.6** (84.9-101)	**96.8** (82.8-105)	**146** (132-162)	**206** (193-235)	**269** (221-308)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(3-hydroxypropyl)-L-cysteine

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1090** (968-1230)	**1090** (952-1350)	**2360** (1920-2800)	**3950** (3550-4250)	**5070** (4360-5840)	889
Age group							
20-49 years	11-12	**999** (857-1170)	**982** (786-1250)	**2100** (1760-2710)	**3610** (3090-4100)	**4570** (4100-5020)	532
50 years and older	11-12	**1260** (1060-1500)	**1360** (1030-1730)	**2670** (2080-3310)	**4800** (3850-5770)	**5840** (4830-6220)	357
Gender							
Males	11-12	**1090** (917-1300)	**1110** (938-1470)	**2530** (2080-3110)	**4100** (3550-4360)	**5400** (4060-6220)	536
Females	11-12	**1090** (1000-1180)	**1060** (898-1210)	**2040** (1770-2630)	**3570** (2940-4730)	**4830** (3670-5600)	353
Nonsmokers							
Total	11-12	**224** (208-241)	**226** (210-245)	**413** (382-450)	**715** (616-873)	**1060** (916-1230)	1308
Age group							
20-49 years	11-12	**239** (211-270)	**249** (216-282)	**434** (391-490)	**768** (579-951)	**1080** (844-1270)	655
50 years and older	11-12	**208** (185-235)	**211** (186-229)	**382** (304-465)	**672** (524-919)	**1040** (852-1270)	653
Gender							
Males	11-12	**294** (271-318)	**297** (277-320)	**480** (410-516)	**872** (724-919)	**1130** (919-1240)	625
Females	11-12	**179** (161-200)	**178** (157-196)	**341** (288-411)	**616** (524-817)	**1000** (654-1430)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 13.0.

Urinary N-Acetyl-S-(3-hydroxypropyl)-L-cysteine (creatinine corrected)

Metabolite of Acrolein

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1200** (1070-1330)	**1220** (1030-1440)	**2350** (2000-2730)	**3780** (3030-4700)	**4790** (3950-5910)	889
Age group							
20-49 years	11-12	**1030** (901-1180)	**1030** (838-1210)	**1840** (1620-2260)	**3240** (2740-4220)	**4540** (3430-5760)	532
50 years and older	11-12	**1540** (1320-1790)	**1750** (1410-2110)	**2990** (2440-3360)	**4120** (3030-6230)	**5310** (3780-7420)	357
Gender							
Males	11-12	**1060** (939-1200)	**1040** (943-1230)	**1840** (1600-2240)	**3070** (2600-3890)	**4540** (3070-5420)	536
Females	11-12	**1390** (1180-1640)	**1510** (1220-1840)	**2990** (2400-3380)	**4120** (3060-5760)	**5590** (4040-7530)	353
Nonsmokers							
Total	11-12	**260** (244-277)	**242** (223-259)	**390** (365-415)	**641** (585-711)	**865** (748-1010)	1307
Age group							
20-49 years	11-12	**258** (234-284)	**234** (212-259)	**389** (346-449)	**643** (553-815)	**880** (693-1080)	654
50 years and older	11-12	**262** (233-294)	**250** (221-275)	**390** (324-457)	**624** (521-785)	**844** (704-1110)	653
Gender							
Males	11-12	**256** (237-276)	**245** (224-260)	**375** (326-418)	**589** (514-664)	**740** (638-843)	624
Females	11-12	**263** (242-286)	**237** (212-271)	**407** (373-460)	**687** (585-837)	**1010** (828-1180)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(2-cyanoethyl)-L-cysteine

Metabolite of Acrylonitrile

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**122** (106-141)	**140** (119-166)	**277** (240-310)	**504** (439-580)	**717** (513-827)	889
Age group							
20-49 years	11-12	**114** (90.4-143)	**132** (105-172)	**265** (214-306)	**515** (372-717)	**717** (467-888)	532
50 years and older	11-12	**137** (118-159)	**146** (125-184)	**306** (232-344)	**481** (384-699)	**705** (439-846)	357
Gender							
Males	11-12	**123** (98.8-153)	**156** (131-183)	**306** (261-355)	**552** (463-745)	**780** (608-858)	536
Females	11-12	**121** (104-140)	**128** (116-146)	**240** (201-277)	**403** (289-652)	**652** (344-786)	353
Nonsmokers							
Total	11-12	**1.50** (1.35-1.67)	**1.33** (1.22-1.45)	**2.35** (2.16-2.52)	**4.81** (3.79-5.80)	**12.1** (7.05-18.2)	1308
Age group							
20-49 years	11-12	**1.67** (1.38-2.02)	**1.45** (1.25-1.65)	**2.49** (2.23-3.00)	**5.84** (4.64-10.3)	**13.4** (7.05-79.9)	655
50 years and older	11-12	**1.34** (1.18-1.53)	**1.23** (1.07-1.36)	**2.19** (1.83-2.44)	**3.65** (3.03-4.36)	**6.84** (3.89-10.6)	653
Gender							
Males	11-12	**1.90** (1.65-2.20)	**1.64** (1.44-1.85)	**2.96** (2.53-3.24)	**7.05** (4.06-12.4)	**14.7** (8.19-58.5)	625
Females	11-12	**1.24** (1.06-1.45)	**1.19** (1.02-1.26)	**1.90** (1.74-2.09)	**3.55** (2.95-4.36)	**6.84** (3.97-10.8)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.

Urinary N-Acetyl-S-(2-cyanoethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrylonitrile

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**134** (118-151)	**166** (147-181)	**263** (238-294)	**411** (342-462)	**537** (442-614)	889
Age group							
20-49 years	11-12	**117** (97.8-141)	**145** (124-165)	**236** (213-275)	**364** (296-442)	**503** (364-637)	532
50 years and older	11-12	**167** (147-190)	**204** (171-233)	**300** (247-356)	**453** (346-522)	**542** (458-641)	357
Gender							
Males	11-12	**120** (102-140)	**146** (126-166)	**231** (209-264)	**359** (323-435)	**473** (414-622)	536
Females	11-12	**154** (125-190)	**202** (161-230)	**294** (269-317)	**453** (342-565)	**565** (453-657)	353
Nonsmokers							
Total	11-12	**1.75** (1.57-1.94)	**1.48** (1.32-1.62)	**2.32** (2.03-2.62)	**4.43** (3.48-5.84)	**8.86** (6.48-14.2)	1307
Age group							
20-49 years	11-12	**1.80** (1.51-2.14)	**1.49** (1.29-1.70)	**2.41** (2.10-2.72)	**5.29** (3.56-7.88)	**13.9** (6.06-54.1)	654
50 years and older	11-12	**1.69** (1.50-1.90)	**1.48** (1.32-1.62)	**2.19** (1.88-2.64)	**3.74** (2.87-5.46)	**6.90** (4.34-13.9)	653
Gender							
Males	11-12	**1.66** (1.44-1.90)	**1.36** (1.21-1.53)	**2.03** (1.80-2.57)	**4.95** (3.05-8.86)	**13.7** (6.48-25.7)	624
Females	11-12	**1.82** (1.58-2.10)	**1.56** (1.45-1.71)	**2.51** (2.16-2.81)	**4.41** (3.39-5.64)	**7.07** (4.86-23.6)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1308
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	655
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	625
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 12.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine (creatinine corrected)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1307
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	654
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	624
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1308
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	655
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	625
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 6.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html**

Urinary N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine (creatinine corrected)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1307
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	654
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	624
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(dimethylphenyl)-L-cysteine

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1308
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	655
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	625
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary N-Acetyl-S-(dimethylphenyl)-L-cysteine (creatinine corrected)

Metabolite of Xylene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1307
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	654
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	624
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine

Metabolite of N,N-Dimethylformamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**415** (364-473)	**419** (357-496)	**763** (665-910)	**1250** (1080-1520)	**1810** (1360-2050)	889
Age group							
20-49 years	11-12	**382** (330-441)	**404** (341-482)	**720** (623-886)	**1140** (939-1360)	**1360** (1140-1830)	532
50 years and older	11-12	**478** (402-568)	**491** (353-626)	**842** (700-1080)	**1800** (1310-2040)	**2230** (1390-3210)	357
Gender							
Males	11-12	**405** (339-484)	**419** (323-514)	**842** (670-1000)	**1360** (1050-1830)	**1830** (1250-2280)	536
Females	11-12	**429** (384-478)	**429** (366-530)	**742** (620-918)	**1230** (898-1470)	**1470** (1230-2020)	353
Nonsmokers							
Total	11-12	**109** (102-116)	**111** (106-122)	**213** (198-231)	**359** (311-406)	**468** (402-553)	1308
Age group							
20-49 years	11-12	**95.7** (84.6-108)	**98.9** (90.8-108)	**185** (164-213)	**329** (268-379)	**468** (319-560)	655
50 years and older	11-12	**125** (116-135)	**129** (123-140)	**242** (215-285)	**375** (335-418)	**468** (418-612)	653
Gender							
Males	11-12	**127** (117-138)	**133** (117-150)	**230** (208-242)	**351** (303-402)	**464** (375-529)	625
Females	11-12	**96.2** (88.2-105)	**95.7** (90.0-105)	**195** (176-222)	**359** (296-430)	**484** (406-588)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 5.5.

Urinary N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine (creatinine corrected)

Metabolite of N,N-Dimethylformamide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**455** (390-531)	**470** (423-564)	**753** (641-891)	**1060** (950-1240)	**1300** (1080-1490)	889
Age group							
20-49 years	11-12	**393** (336-460)	**408** (319-486)	**635** (514-783)	**950** (811-1090)	**1190** (1000-1410)	532
50 years and older	11-12	**581** (497-678)	**631** (521-741)	**942** (752-1020)	**1290** (969-1470)	**1400** (1070-1620)	357
Gender							
Males	11-12	**393** (332-466)	**408** (334-489)	**635** (511-746)	**927** (712-1200)	**1060** (809-1450)	536
Females	11-12	**547** (471-634)	**595** (512-681)	**942** (795-1030)	**1190** (1020-1450)	**1400** (1190-1610)	353
Nonsmokers							
Total	11-12	**126** (119-134)	**128** (119-137)	**212** (196-227)	**320** (299-337)	**382** (352-455)	1307
Age group							
20-49 years	11-12	**103** (93.6-114)	**106** (97.5-116)	**171** (157-185)	**245** (218-292)	**337** (265-376)	654
50 years and older	11-12	**157** (145-170)	**153** (133-178)	**268** (227-299)	**369** (326-398)	**469** (392-590)	653
Gender							
Males	11-12	**110** (101-120)	**116** (100-130)	**175** (166-195)	**268** (226-296)	**335** (280-414)	624
Females	11-12	**141** (132-151)	**139** (129-154)	**240** (216-272)	**352** (320-376)	**398** (377-476)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**333** (293-378)	**364** (312-407)	**590** (534-665)	**973** (854-1180)	**1220** (989-1550)	889
Age group							
20-49 years	11-12	**337** (290-392)	**381** (317-420)	**585** (500-708)	**971** (788-1150)	**1220** (953-1550)	532
50 years and older	11-12	**327** (283-377)	**341** (278-417)	**608** (503-725)	**983** (841-1240)	**1240** (973-1460)	357
Gender							
Males	11-12	**357** (306-416)	**391** (355-428)	**656** (538-821)	**1180** (844-1460)	**1460** (1070-1790)	536
Females	11-12	**305** (265-352)	**312** (258-400)	**554** (445-622)	**855** (635-956)	**956** (813-1140)	353
Nonsmokers							
Total	11-12	**231** (215-248)	**258** (229-272)	**416** (397-439)	**599** (553-633)	**730** (666-785)	1308
Age group							
20-49 years	11-12	**228** (204-256)	**253** (220-299)	**426** (384-476)	**617** (553-679)	**721** (672-771)	655
50 years and older	11-12	**235** (217-254)	**262** (228-272)	**403** (356-438)	**576** (513-647)	**764** (599-808)	653
Gender							
Males	11-12	**292** (268-319)	**327** (286-375)	**466** (424-530)	**637** (565-697)	**756** (672-848)	625
Females	11-12	**192** (175-210)	**206** (186-222)	**338** (312-373)	**541** (501-585)	**713** (585-792)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 5.0.

Urinary N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine (creatinine corrected)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**365** (340-392)	**361** (344-377)	**468** (431-529)	**653** (565-714)	**750** (666-827)	889
Age group							
20-49 years	11-12	**347** (322-374)	**333** (311-356)	**439** (404-498)	**625** (549-714)	**737** (666-819)	532
50 years and older	11-12	**397** (359-439)	**395** (365-439)	**500** (457-564)	**655** (564-771)	**805** (639-866)	357
Gender							
Males	11-12	**347** (320-375)	**349** (323-374)	**452** (414-492)	**588** (507-714)	**750** (588-866)	536
Females	11-12	**390** (358-424)	**376** (344-432)	**504** (441-600)	**661** (623-714)	**771** (711-820)	353
Nonsmokers							
Total	11-12	**269** (257-281)	**267** (252-279)	**343** (329-356)	**443** (420-455)	**514** (462-554)	1307
Age group							
20-49 years	11-12	**246** (231-263)	**241** (225-263)	**310** (292-334)	**390** (350-431)	**460** (415-529)	654
50 years and older	11-12	**295** (279-312)	**289** (269-317)	**378** (355-410)	**473** (445-514)	**543** (488-609)	653
Gender							
Males	11-12	**254** (241-268)	**250** (235-266)	**329** (310-349)	**413** (390-430)	**475** (410-610)	624
Females	11-12	**281** (265-297)	**278** (263-298)	**352** (335-374)	**456** (433-504)	**529** (476-557)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**1.04** (.805-1.21)	**2.81** (2.20-3.85)	**6.22** (5.18-7.75)	**8.99** (7.71-10.0)	889
Age group							
20-49 years	11-12	*	**.793** (<LOD-1.07)	**2.63** (1.94-3.39)	**6.07** (3.82-8.53)	**8.56** (6.91-9.88)	532
50 years and older	11-12	**1.51** (1.26-1.80)	**1.30** (1.07-1.60)	**3.10** (2.21-4.92)	**7.71** (5.02-9.23)	**9.43** (7.79-12.7)	357
Gender							
Males	11-12	*	**.904** (.708-1.19)	**2.63** (1.82-4.60)	**6.22** (4.87-9.09)	**9.43** (7.67-10.1)	536
Females	11-12	**1.37** (1.18-1.59)	**1.13** (.820-1.47)	**2.96** (2.33-3.96)	**6.32** (5.12-7.44)	**7.95** (7.07-11.1)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1308
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	655
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	653
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	625
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine (creatinine corrected)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**1.50** (1.16-1.90)	**3.06** (2.73-3.72)	**5.68** (4.54-6.91)	**7.84** (5.66-11.0)	889
Age group							
20-49 years	11-12	*	**1.25** (<LOD-1.77)	**2.84** (2.36-3.36)	**5.30** (3.77-6.45)	**6.91** (5.75-9.68)	532
50 years and older	11-12	**1.83** (1.49-2.25)	**1.68** (1.40-2.37)	**3.75** (2.91-4.74)	**6.86** (4.32-10.3)	**8.30** (5.61-15.0)	357
Gender							
Males	11-12	*	**1.26** (.934-1.63)	**2.75** (1.93-3.26)	**4.83** (3.54-5.68)	**6.34** (4.51-10.4)	536
Females	11-12	**1.75** (1.37-2.23)	**1.90** (1.22-2.69)	**3.77** (2.92-5.30)	**6.86** (5.30-8.30)	**8.56** (6.73-13.0)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1307
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	654
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	653
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	624
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**57.5** (51.3-64.6)	**64.0** (54.6-77.0)	**121** (107-144)	**204** (184-228)	**257** (230-286)	889
Age group							
20-49 years	11-12	**51.6** (43.7-60.8)	**56.2** (45.6-71.5)	**106** (91.1-120)	**179** (150-208)	**226** (191-285)	532
50 years and older	11-12	**69.0** (58.7-81.2)	**83.3** (63.0-97.8)	**163** (115-190)	**230** (189-280)	**286** (219-423)	357
Gender							
Males	11-12	**55.4** (46.2-66.4)	**62.5** (46.7-77.3)	**142** (108-164)	**219** (186-266)	**285** (228-343)	536
Females	11-12	**60.3** (54.3-67.1)	**68.8** (56.2-81.2)	**117** (92.7-134)	**184** (153-204)	**223** (189-265)	353
Nonsmokers							
Total	11-12	**6.99** (6.32-7.73)	**7.31** (6.82-7.98)	**13.4** (12.5-14.4)	**21.8** (19.8-23.6)	**28.3** (25.7-31.2)	1308
Age group							
20-49 years	11-12	**7.04** (5.98-8.31)	**7.56** (6.48-8.80)	**13.6** (12.2-15.8)	**22.9** (20.6-26.0)	**36.2** (26.0-48.9)	655
50 years and older	11-12	**6.93** (6.25-7.68)	**7.13** (6.58-7.98)	**13.3** (11.2-14.4)	**20.2** (18.1-22.5)	**25.2** (21.6-28.9)	653
Gender							
Males	11-12	**9.13** (8.33-10.0)	**9.56** (8.52-10.7)	**14.7** (13.6-16.5)	**23.4** (20.3-27.7)	**29.9** (26.7-39.4)	625
Females	11-12	**5.63** (4.83-6.56)	**5.83** (4.89-6.78)	**11.3** (10.1-13.1)	**19.9** (16.6-23.2)	**25.7** (21.8-31.2)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.

Urinary N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine (creatinine corrected)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**63.1** (55.1-72.2)	**70.9** (58.4-82.8)	**127** (105-146)	**196** (166-232)	**255** (208-306)	889
Age group							
20-49 years	11-12	**53.1** (44.9-62.8)	**58.9** (45.6-70.9)	**102** (78.6-131)	**164** (138-182)	**209** (168-279)	532
50 years and older	11-12	**83.9** (71.9-97.9)	**94.4** (76.8-113)	**151** (135-178)	**244** (171-309)	**271** (227-371)	357
Gender							
Males	11-12	**53.8** (46.1-62.8)	**59.5** (50.0-71.6)	**101** (80.5-125)	**164** (138-184)	**202** (164-245)	536
Females	11-12	**77.0** (63.6-93.1)	**92.1** (68.0-112)	**148** (132-176)	**243** (179-294)	**299** (243-371)	353
Nonsmokers							
Total	11-12	**8.12** (7.41-8.89)	**7.90** (7.09-8.78)	**12.5** (11.7-13.6)	**18.7** (16.8-21.1)	**23.9** (21.1-27.5)	1307
Age group							
20-49 years	11-12	**7.61** (6.64-8.71)	**7.49** (6.07-8.86)	**12.2** (10.5-13.7)	**17.7** (15.3-20.2)	**24.6** (18.7-33.7)	654
50 years and older	11-12	**8.71** (7.95-9.54)	**8.10** (7.55-9.08)	**12.7** (11.8-14.0)	**19.8** (16.2-22.3)	**22.6** (19.8-25.6)	653
Gender							
Males	11-12	**7.95** (7.32-8.63)	**7.70** (7.06-8.48)	**12.1** (10.9-13.3)	**18.1** (15.4-20.1)	**22.1** (19.1-24.1)	624
Females	11-12	**8.26** (7.23-9.43)	**8.03** (6.71-9.42)	**12.6** (11.6-14.1)	**19.7** (16.2-23.9)	**25.3** (21.4-34.9)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1308
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	655
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	625
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine (creatinine corrected)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1307
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	654
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	624
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxyethyl)-L-cysteine

Metabolite of Acrylonitrile, Ethylene oxide, and Vinyl chloride

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.97** (1.74-2.22)	**2.00** (1.71-2.19)	**3.96** (3.37-4.81)	**7.86** (5.88-10.2)	**12.5** (9.56-14.4)	889
Age group							
20-49 years	11-12	**2.06** (1.79-2.38)	**2.14** (1.77-2.41)	**3.94** (3.37-4.96)	**7.86** (5.49-11.7)	**12.4** (9.23-13.9)	532
50 years and older	11-12	**1.81** (1.45-2.26)	**1.58** (1.20-2.23)	**4.01** (2.63-5.65)	**8.76** (4.97-14.7)	**14.4** (6.18-27.5)	357
Gender							
Males	11-12	**1.71** (1.46-2.01)	**1.49** (1.24-1.84)	**3.37** (2.50-4.23)	**8.82** (5.53-12.5)	**12.6** (6.69-20.2)	536
Females	11-12	**2.33** (2.07-2.63)	**2.50** (2.19-2.94)	**4.58** (3.82-5.28)	**7.76** (5.74-10.9)	**10.9** (7.88-14.7)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**.934** (.830-1.06)	**1.56** (1.33-1.74)	**2.10** (1.77-2.67)	1308
Age group							
20-49 years	11-12	*	**< LOD**	**1.02** (.861-1.14)	**1.65** (1.45-2.00)	**2.67** (1.98-3.66)	655
50 years and older	11-12	*	**< LOD**	**.873** (.669-1.09)	**1.33** (1.09-1.73)	**1.75** (1.42-2.50)	653
Gender							
Males	11-12	*	**< LOD**	**.896** (.748-1.13)	**1.51** (1.32-1.74)	**1.85** (1.63-3.04)	625
Females	11-12	*	**< LOD**	**.960** (.818-1.07)	**1.56** (1.23-1.98)	**2.42** (1.75-2.81)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxyethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrylonitrile, Ethylene oxide, and Vinyl chloride

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**2.15** (1.87-2.48)	**2.24** (1.77-2.64)	**4.25** (3.26-5.35)	**7.76** (5.82-8.71)	**11.6** (7.83-15.4)	889
Age group							
20-49 years	11-12	**2.13** (1.90-2.38)	**2.36** (1.71-2.70)	**4.12** (3.60-4.73)	**6.80** (5.82-7.83)	**8.86** (7.76-14.1)	532
50 years and older	11-12	**2.20** (1.72-2.81)	**2.15** (1.55-2.85)	**4.66** (2.57-7.59)	**8.54** (5.13-13.1)	**11.7** (5.69-18.3)	357
Gender							
Males	11-12	**1.66** (1.45-1.91)	**1.54** (1.33-1.99)	**3.27** (2.70-3.81)	**5.69** (4.81-6.58)	**6.92** (5.74-8.54)	536
Females	11-12	**2.98** (2.47-3.59)	**2.99** (2.39-3.32)	**5.47** (4.31-7.76)	**11.3** (7.59-13.8)	**13.1** (7.89-19.0)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**1.25** (1.14-1.46)	**1.98** (1.72-2.36)	**2.79** (2.30-3.26)	1307
Age group							
20-49 years	11-12	*	**< LOD**	**1.29** (1.15-1.50)	**2.02** (1.78-2.50)	**2.77** (2.31-3.26)	654
50 years and older	11-12	*	**< LOD**	**1.24** (1.08-1.43)	**1.93** (1.60-2.30)	**2.79** (2.22-3.23)	653
Gender							
Males	11-12	*	**< LOD**	**.930** (.815-1.08)	**1.46** (1.18-1.70)	**1.84** (1.62-2.27)	624
Females	11-12	*	**< LOD**	**1.57** (1.41-1.77)	**2.38** (2.06-2.98)	**3.25** (2.50-3.86)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxypropyl)-L-cysteine

Metabolite of Propylene oxide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**105** (91.4-121)	**110** (97.3-124)	**221** (195-239)	**370** (306-416)	**552** (401-731)	889
Age group							
20-49 years	11-12	**98.7** (83.2-117)	**110** (101-117)	**207** (175-244)	**354** (275-401)	**492** (354-784)	532
50 years and older	11-12	**117** (90.7-150)	**112** (82.9-172)	**229** (195-292)	**416** (284-611)	**611** (388-1390)	357
Gender							
Males	11-12	**104** (86.5-125)	**111** (94.5-130)	**232** (184-259)	**375** (292-462)	**498** (395-727)	536
Females	11-12	**107** (93.8-121)	**110** (91.8-127)	**216** (194-235)	**359** (259-552)	**552** (292-826)	353
Nonsmokers							
Total	11-12	**52.6** (47.4-58.3)	**48.1** (44.1-54.7)	**91.8** (81.4-106)	**190** (155-230)	**509** (289-717)	1308
Age group							
20-49 years	11-12	**55.8** (49.5-63.0)	**52.6** (45.8-58.8)	**99.7** (84.9-122)	**194** (153-293)	**406** (199-810)	655
50 years and older	11-12	**49.2** (41.1-58.9)	**45.2** (38.0-53.1)	**85.5** (68.7-105)	**189** (134-307)	**523** (192-947)	653
Gender							
Males	11-12	**59.1** (51.6-67.7)	**57.0** (47.4-65.4)	**93.1** (76.3-119)	**155** (134-215)	**268** (188-640)	625
Females	11-12	**47.8** (41.1-55.5)	**41.1** (33.9-48.9)	**91.2** (73.5-114)	**225** (171-349)	**550** (306-879)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.3.

Urinary N-Acetyl-S-(2-hydroxypropyl)-L-cysteine (creatinine corrected)

Metabolite of Propylene oxide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**115** (99.4-134)	**118** (99.5-135)	**203** (167-245)	**326** (275-399)	**457** (332-617)	889
Age group							
20-49 years	11-12	**102** (90.6-114)	**107** (87.9-121)	**188** (154-216)	**296** (241-366)	**395** (298-438)	532
50 years and older	11-12	**142** (110-182)	**138** (106-172)	**226** (172-312)	**393** (266-617)	**589** (303-1450)	357
Gender							
Males	11-12	**101** (85.1-120)	**102** (84.5-125)	**162** (138-201)	**261** (212-358)	**368** (262-574)	536
Females	11-12	**136** (116-160)	**139** (120-176)	**256** (207-298)	**393** (298-519)	**519** (346-617)	353
Nonsmokers							
Total	11-12	**61.0** (54.8-67.9)	**50.8** (47.4-55.0)	**88.0** (77.1-97.6)	**174** (148-227)	**529** (304-963)	1307
Age group							
20-49 years	11-12	**60.2** (54.0-67.1)	**50.8** (48.3-55.2)	**93.6** (79.1-104)	**168** (136-306)	**396** (186-943)	654
50 years and older	11-12	**61.9** (51.8-74.0)	**51.5** (46.1-57.7)	**82.6** (71.2-99.1)	**181** (129-390)	**630** (181-1910)	653
Gender							
Males	11-12	**51.4** (45.6-58.0)	**48.7** (43.8-52.6)	**75.1** (63.1-81.5)	**113** (96.5-144)	**227** (133-453)	624
Females	11-12	**70.1** (58.1-84.5)	**54.6** (46.8-63.9)	**105** (88.7-134)	**304** (171-474)	**943** (313-2260)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine

Metabolite of Crotonaldehyde

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1790** (1620-1980)	**2000** (1630-2330)	**3810** (3170-4370)	**6920** (5460-7500)	**7910** (7610-8720)	889
Age group							
20-49 years	11-12	**1610** (1390-1860)	**1670** (1300-2250)	**3380** (2810-4020)	**5500** (4510-6920)	**7710** (6300-8880)	532
50 years and older	11-12	**2140** (1810-2510)	**2490** (1860-2970)	**4460** (3840-5410)	**7540** (6790-7830)	**8720** (7500-9650)	357
Gender							
Males	11-12	**1760** (1510-2050)	**2050** (1370-2610)	**4020** (3210-4460)	**7000** (5350-7760)	**8130** (7680-9120)	536
Females	11-12	**1830** (1680-1990)	**2000** (1680-2220)	**3570** (2970-4190)	**6410** (4780-7500)	**7910** (6990-8880)	353
Nonsmokers							
Total	11-12	**334** (315-354)	**342** (310-369)	**587** (528-631)	**917** (834-1020)	**1260** (991-1890)	1308
Age group							
20-49 years	11-12	**331** (299-367)	**341** (295-385)	**604** (524-679)	**939** (834-1040)	**1120** (984-1680)	655
50 years and older	11-12	**337** (310-367)	**343** (291-411)	**553** (491-641)	**889** (790-1030)	**1390** (892-2120)	653
Gender							
Males	11-12	**407** (379-436)	**422** (366-467)	**659** (600-706)	**992** (889-1080)	**1390** (1030-1680)	625
Females	11-12	**285** (258-315)	**276** (241-312)	**495** (466-553)	**857** (651-1050)	**1150** (809-2490)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.0.

Urinary N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine (creatinine corrected)

Metabolite of Crotonaldehyde

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1960** (1720-2240)	**2160** (1800-2420)	**3970** (3460-4840)	**6470** (5410-7880)	**8060** (6620-9140)	889
Age group							
20-49 years	11-12	**1650** (1380-1980)	**1700** (1370-2020)	**3360** (2670-4140)	**5920** (5230-7250)	**8060** (5920-9070)	532
50 years and older	11-12	**2600** (2250-2990)	**2890** (2580-3310)	**5000** (3830-5820)	**7020** (5710-9130)	**8380** (5870-	357
Gender							
Males	11-12	**1710** (1490-1960)	**1850** (1440-2230)	**3250** (2670-3830)	**5820** (4560-6780)	**7720** (5820-9130)	536
Females	11-12	**2330** (1940-2800)	**2710** (2110-3280)	**5210** (3780-5870)	**7100** (5710-9070)	**9140** (7250-	353
Nonsmokers							
Total	11-12	**388** (362-416)	**359** (325-389)	**514** (479-553)	**744** (674-923)	**1080** (914-1360)	1307
Age group							
20-49 years	11-12	**357** (322-395)	**309** (287-339)	**467** (412-558)	**730** (616-956)	**1210** (760-1730)	654
50 years and older	11-12	**424** (396-455)	**393** (362-429)	**536** (493-601)	**796** (712-934)	**1060** (923-1300)	653
Gender							
Males	11-12	**353** (332-375)	**329** (297-363)	**483** (429-530)	**711** (606-770)	**938** (712-1080)	624
Females	11-12	**418** (379-461)	**372** (343-412)	**531** (486-591)	**859** (706-1060)	**1330** (932-2490)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(phenyl)-L-cysteine

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**.647** (<LOD-.778)	**1.23** (1.05-1.40)	**2.04** (1.69-2.75)	**3.11** (2.08-3.76)	889
Age group							
20-49 years	11-12	*	**.647** (<LOD-.759)	**1.25** (1.05-1.47)	**2.22** (1.69-3.04)	**3.11** (1.84-3.86)	532
50 years and older	11-12	*	**.638** (<LOD-.890)	**1.14** (.921-1.42)	**1.74** (1.42-2.86)	**3.24** (1.78-3.78)	357
Gender							
Males	11-12	*	**.699** (<LOD-.908)	**1.29** (1.11-1.48)	**2.86** (1.63-3.58)	**3.58** (2.49-4.13)	536
Females	11-12	*	**< LOD**	**1.10** (.921-1.38)	**1.69** (1.30-2.34)	**2.16** (1.70-2.67)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**.966** (.893-1.10)	**1.85** (1.56-2.36)	**3.08** (2.18-3.79)	1308
Age group							
20-49 years	11-12	*	**< LOD**	**1.09** (.923-1.30)	**2.18** (1.73-2.75)	**3.31** (2.41-3.96)	655
50 years and older	11-12	*	**< LOD**	**.902** (.779-1.03)	**1.51** (1.24-2.51)	**2.84** (1.42-4.02)	653
Gender							
Males	11-12	*	**.648** (<LOD-.780)	**1.21** (.965-1.31)	**1.82** (1.51-2.92)	**3.49** (1.73-7.93)	625
Females	11-12	*	**< LOD**	**.822** (.664-.965)	**1.91** (1.31-2.53)	**2.84** (1.83-3.50)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html**

Urinary N-Acetyl-S-(phenyl)-L-cysteine (creatinine corrected)

Metabolite of Benzene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**1.35** (1.18-1.57)	**2.23** (1.86-2.49)	**2.51** (2.37-2.83)	889
Age group							
20-49 years	11-12	*	**< LOD**	**1.33** (1.03-1.77)	**2.23** (1.78-2.49)	**2.55** (2.25-3.03)	532
50 years and older	11-12	*	**< LOD**	**1.37** (1.21-1.56)	**2.13** (1.59-2.36)	**2.36** (1.93-2.65)	357
Gender							
Males	11-12	*	**.778** (<LOD-.902)	**1.29** (.968-1.63)	**2.23** (1.77-2.49)	**2.49** (1.92-2.98)	536
Females	11-12	*	**< LOD**	**1.41** (1.24-1.63)	**2.12** (1.70-2.49)	**2.63** (2.23-3.03)	353
Nonsmokers							
Total	11-12	*	**.783** (<LOD-.815)	**1.26** (1.15-1.37)	**2.03** (1.77-2.55)	**3.26** (2.59-4.15)	1307
Age group							
20-49 years	11-12	*	**.800** (<LOD-.865)	**1.29** (1.15-1.46)	**2.36** (1.84-2.79)	**3.26** (2.55-4.71)	654
50 years and older	11-12	*	**.771** (<LOD-.847)	**1.25** (1.06-1.46)	**1.93** (1.67-2.36)	**2.83** (1.98-4.81)	653
Gender							
Males	11-12	*	**.642** (<LOD-.719)	**1.03** (.885-1.12)	**1.67** (1.34-2.04)	**2.53** (1.84-3.80)	624
Females	11-12	*	**< LOD**	**1.51** (1.27-1.70)	**2.36** (1.93-3.21)	**3.86** (2.73-4.81)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html**

Urinary *t,t*-Muconic acid

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**121** (111-131)	**116** (101-126)	**254** (215-285)	**450** (377-533)	**651** (502-1050)	889
Age group							
20-49 years	11-12	**116** (104-128)	**109** (90.8-130)	**242** (201-288)	**483** (353-615)	**676** (500-1160)	532
50 years and older	11-12	**130** (110-154)	**126** (101-175)	**269** (203-315)	**429** (322-538)	**571** (455-1260)	357
Gender							
Males	11-12	**122** (108-138)	**118** (98.5-151)	**264** (226-299)	**442** (333-538)	**622** (457-1160)	536
Females	11-12	**119** (104-136)	**113** (92.9-123)	**217** (173-299)	**455** (361-615)	**692** (430-1340)	353
Nonsmokers							
Total	11-12	**63.4** (57.3-70.1)	**59.2** (50.6-68.6)	**124** (109-140)	**265** (235-298)	**403** (352-488)	1308
Age group							
20-49 years	11-12	**63.8** (57.4-71.0)	**56.3** (48.6-67.7)	**128** (115-156)	**297** (254-358)	**426** (357-676)	655
50 years and older	11-12	**62.9** (54.2-73.0)	**60.9** (51.4-71.2)	**118** (98.0-151)	**228** (167-285)	**367** (265-425)	653
Gender							
Males	11-12	**78.4** (69.2-88.7)	**74.6** (63.0-85.7)	**148** (126-159)	**290** (265-364)	**528** (348-770)	625
Females	11-12	**53.4** (48.2-59.2)	**49.2** (41.7-53.4)	**105** (85.8-125)	**246** (195-259)	**368** (259-418)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 20.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html**

Urinary *t,t*-Muconic acid (creatinine corrected)

Metabolite of Benzene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**132** (117-150)	**128** (112-155)	**232** (215-263)	**403** (335-478)	**610** (478-719)	889
Age group							
20-49 years	11-12	**119** (104-137)	**112** (90.0-131)	**228** (183-275)	**442** (347-508)	**600** (469-688)	532
50 years and older	11-12	**158** (137-183)	**170** (129-192)	**234** (215-268)	**351** (319-453)	**629** (373-1140)	357
Gender							
Males	11-12	**119** (103-137)	**122** (99.6-144)	**220** (192-239)	**335** (278-400)	**498** (403-600)	536
Females	11-12	**152** (128-180)	**162** (111-188)	**254** (212-324)	**508** (344-629)	**674** (549-985)	353
Nonsmokers							
Total	11-12	**73.8** (67.1-81.1)	**69.0** (61.1-78.5)	**128** (110-143)	**260** (211-309)	**413** (319-505)	1307
Age group							
20-49 years	11-12	**69.2** (62.0-77.2)	**62.2** (56.4-72.1)	**133** (108-152)	**270** (193-331)	**413** (324-479)	654
50 years and older	11-12	**79.2** (69.4-90.3)	**78.4** (63.0-86.6)	**128** (105-158)	**230** (196-310)	**437** (278-616)	653
Gender							
Males	11-12	**68.5** (60.5-77.6)	**63.2** (55.6-74.7)	**109** (97.2-131)	**235** (185-278)	**363** (319-446)	624
Females	11-12	**78.3** (70.0-87.7)	**75.6** (63.0-86.0)	**144** (119-167)	**278** (210-349)	**447** (310-596)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzene_FactSheet.html

Urinary N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine**

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.21** (1.04-1.41)	**1.04** (.840-1.25)	**2.23** (1.75-2.79)	**4.37** (3.20-6.16)	**6.26** (5.05-8.62)	889
Age group							
20-49 years	11-12	**1.16** (.997-1.35)	**.957** (.807-1.14)	**2.09** (1.43-2.57)	**4.37** (2.88-6.16)	**6.26** (4.34-10.2)	532
50 years and older	11-12	**1.29** (1.07-1.57)	**1.25** (.813-1.51)	**2.56** (1.88-3.20)	**4.34** (3.20-6.31)	**6.34** (4.37-9.02)	357
Gender							
Males	11-12	**1.33** (1.08-1.63)	**1.16** (.840-1.48)	**2.57** (2.07-3.20)	**5.53** (3.54-6.85)	**7.23** (4.72-17.2)	536
Females	11-12	**1.08** (.950-1.22)	**.943** (.772-1.16)	**1.76** (1.38-2.27)	**3.44** (2.59-4.59)	**5.22** (3.26-7.92)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.35** (1.15-1.63)	**1.87** (1.63-2.16)	1308
Age group							
20-49 years	11-12	*	**< LOD**	**.791** (<LOD-.898)	**1.56** (1.24-1.69)	**1.95** (1.80-2.41)	655
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.28** (.979-1.61)	**1.75** (1.32-1.93)	653
Gender							
Males	11-12	*	**< LOD**	**.803** (<LOD-.906)	**1.60** (1.17-1.87)	**1.93** (1.64-2.67)	625
Females	11-12	*	**< LOD**	**< LOD**	**1.28** (1.06-1.47)	**1.73** (1.38-2.13)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Concentrations of N-Acetyl-S-(1-phenyl- + (2-phenyl-2-hydroxyethyl)-L-cysteine were measured together and are reported as N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html**

Urinary N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine (creatinine corrected)**

Metabolite of Styrene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.33** (1.18-1.48)	**1.28** (1.15-1.44)	**2.43** (1.93-2.75)	**3.75** (3.10-4.16)	**4.64** (4.06-6.42)	889
Age group							
20-49 years	11-12	**1.20** (1.04-1.38)	**1.15** (.940-1.44)	**2.06** (1.82-2.54)	**3.39** (2.91-4.28)	**4.61** (3.73-7.53)	532
50 years and older	11-12	**1.57** (1.39-1.78)	**1.44** (1.26-1.72)	**2.74** (2.03-3.24)	**4.02** (3.30-4.28)	**4.85** (4.05-6.42)	357
Gender							
Males	11-12	**1.29** (1.12-1.48)	**1.19** (1.07-1.33)	**2.06** (1.82-2.75)	**3.73** (2.95-4.13)	**4.33** (3.82-9.42)	536
Females	11-12	**1.38** (1.20-1.57)	**1.41** (1.20-1.65)	**2.52** (2.20-2.74)	**3.98** (3.09-4.61)	**4.75** (4.02-6.42)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.90** (1.77-2.06)	**2.61** (2.15-3.30)	1307
Age group							
20-49 years	11-12	*	**< LOD**	**1.15** (<LOD-1.34)	**1.96** (1.65-2.36)	**2.75** (2.15-3.81)	654
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.83** (1.71-2.05)	**2.25** (1.98-3.54)	653
Gender							
Males	11-12	*	**< LOD**	**.901** (<LOD-1.01)	**1.33** (1.18-1.50)	**1.77** (1.46-2.15)	624
Females	11-12	*	**< LOD**	**< LOD**	**2.15** (1.91-2.62)	**3.30** (2.44-4.13)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**Concentrations of N-Acetyl-S-(1-phenyl- + (2-phenyl-2-hydroxyethyl)-L-cysteine were measured together and are reported as N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary N-Acetyl-S-(*n*-propyl)-L-cysteine

Metabolite of 1-Bromopropane

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**3.85** (3.23-4.58)	**2.93** (2.33-3.88)	**9.54** (6.79-13.5)	**24.6** (18.6-45.1)	**64.8** (29.9-105)	882
Age group							
20-49 years	11-12	**4.13** (3.29-5.18)	**3.45** (2.33-4.79)	**9.80** (7.05-14.9)	**24.3** (17.0-56.8)	**64.8** (24.3-105)	530
50 years and older	11-12	**3.41** (2.43-4.79)	**2.52** (1.71-3.70)	**7.66** (3.89-18.2)	**25.1** (18.2-52.7)	**68.7** (21.7-163)	352
Gender							
Males	11-12	**3.96** (2.99-5.24)	**2.88** (2.17-4.24)	**10.4** (5.69-18.6)	**29.9** (18.1-78.6)	**105** (28.4-177)	531
Females	11-12	**3.72** (3.25-4.26)	**3.03** (2.27-4.13)	**8.55** (6.62-11.6)	**22.8** (15.4-28.4)	**45.1** (24.6-68.7)	351
Nonsmokers							
Total	11-12	**4.80** (4.24-5.43)	**4.40** (3.85-5.22)	**12.2** (10.4-14.9)	**30.0** (24.6-39.2)	**56.1** (35.7-78.6)	1266
Age group							
20-49 years	11-12	**5.18** (4.47-6.01)	**4.82** (3.71-5.91)	**13.2** (10.4-17.5)	**32.4** (24.1-43.5)	**64.4** (36.1-94.2)	640
50 years and older	11-12	**4.41** (3.48-5.59)	**4.23** (3.11-5.41)	**10.5** (8.49-15.7)	**27.4** (18.6-39.2)	**43.7** (27.4-72.9)	626
Gender							
Males	11-12	**5.35** (4.57-6.27)	**4.98** (4.04-6.19)	**12.5** (10.3-15.5)	**33.3** (24.4-45.7)	**60.9** (31.1-84.4)	604
Females	11-12	**4.39** (3.78-5.10)	**4.11** (3.27-5.08)	**11.8** (9.69-15.9)	**28.7** (20.8-39.7)	**45.2** (33.5-69.4)	662

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.2.

Urinary N-Acetyl-S-(*n*-propyl)-L-cysteine (creatinine corrected)

Metabolite of 1-Bromopropane

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**4.22** (3.72-4.80)	**4.05** (3.24-4.84)	**8.60** (7.75-9.61)	**26.3** (15.3-37.8)	**62.0** (31.9-87.5)	882
Age group							
20-49 years	11-12	**4.26** (3.65-4.97)	**4.31** (3.13-5.00)	**8.82** (7.67-11.3)	**23.9** (13.5-37.3)	**48.5** (23.9-87.5)	530
50 years and older	11-12	**4.16** (3.00-5.77)	**3.61** (2.23-6.05)	**7.55** (6.05-12.0)	**36.1** (11.0-71.6)	**71.6** (30.3-92.8)	352
Gender							
Males	11-12	**3.84** (3.14-4.69)	**3.79** (2.93-4.68)	**8.28** (6.09-12.2)	**25.3** (12.9-51.2)	**62.0** (22.0-87.5)	531
Females	11-12	**4.75** (3.92-5.75)	**4.47** (2.93-6.06)	**8.71** (7.32-12.0)	**28.1** (13.0-47.7)	**48.5** (33.8-92.8)	351
Nonsmokers							
Total	11-12	**5.56** (4.92-6.28)	**5.31** (4.54-6.00)	**14.0** (12.1-16.6)	**36.0** (26.4-46.1)	**51.8** (41.3-65.2)	1265
Age group							
20-49 years	11-12	**5.62** (4.97-6.35)	**5.31** (4.30-6.39)	**15.6** (12.8-21.1)	**36.4** (29.2-46.5)	**52.6** (41.6-65.3)	639
50 years and older	11-12	**5.49** (4.34-6.94)	**5.31** (4.14-7.00)	**12.6** (9.63-17.8)	**32.7** (21.0-44.4)	**49.9** (32.7-71.8)	626
Gender							
Males	11-12	**4.63** (3.97-5.41)	**4.26** (3.53-5.50)	**11.1** (8.72-14.0)	**32.7** (20.9-37.9)	**46.1** (32.7-61.5)	603
Females	11-12	**6.44** (5.33-7.78)	**6.35** (4.81-8.17)	**17.0** (12.7-24.7)	**37.1** (29.3-50.3)	**60.9** (43.8-80.0)	662

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(trichlorovinyl)-L-cysteine

Metabolite of Tetrachloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1308
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	655
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	625
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 3.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary N-Acetyl-S-(trichlorovinyl)-L-cysteine (creatinine corrected)

Metabolite of Tetrachloroethene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1307
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	654
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	624
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Urinary 2-Aminothiazoline-4-carboxylic acid

Metabolite of Cyanide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**117** (101-137)	**136** (116-154)	**251** (215-303)	**439** (342-515)	**608** (491-759)	889
Age group							
20-49 years	11-12	**115** (95.3-139)	**136** (108-165)	**235** (197-306)	**439** (327-515)	**560** (439-730)	532
50 years and older	11-12	**121** (96.2-153)	**132** (99.4-162)	**274** (175-342)	**487** (327-669)	**716** (487-926)	357
Gender							
Males	11-12	**88.2** (73.3-106)	**99.4** (78.7-122)	**187** (163-228)	**309** (246-381)	**403** (304-730)	536
Females	11-12	**168** (141-200)	**173** (155-207)	**335** (252-439)	**551** (446-689)	**751** (531-997)	353
Nonsmokers							
Total	11-12	**95.9** (88.2-104)	**102** (95.2-108)	**184** (170-209)	**323** (282-364)	**433** (364-501)	1308
Age group							
20-49 years	11-12	**92.8** (83.1-104)	**99.3** (82.8-106)	**180** (157-212)	**314** (270-391)	**461** (349-534)	655
50 years and older	11-12	**99.5** (90.1-110)	**108** (94.6-125)	**192** (176-220)	**331** (293-363)	**414** (356-501)	653
Gender							
Males	11-12	**80.3** (72.5-89.0)	**81.0** (70.0-96.2)	**147** (132-175)	**264** (217-378)	**407** (271-501)	625
Females	11-12	**111** (98.4-124)	**121** (103-147)	**218** (191-257)	**342** (312-363)	**475** (397-531)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 15.0.

Urinary 2-Aminothiazoline-4-carboxylic acid (creatinine corrected)

Metabolite of Cyanide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**129** (116-143)	**138** (118-157)	**246** (220-286)	**411** (363-446)	**514** (440-608)	889
Age group							
20-49 years	11-12	**119** (105-134)	**131** (114-155)	**224** (203-260)	**360** (285-406)	**412** (363-514)	532
50 years and older	11-12	**148** (125-174)	**141** (116-185)	**327** (252-399)	**477** (439-616)	**623** (477-765)	357
Gender							
Males	11-12	**85.7** (75.9-96.8)	**91.1** (81.1-101)	**151** (133-167)	**266** (207-327)	**393** (286-477)	536
Females	11-12	**214** (193-237)	**220** (203-251)	**363** (307-409)	**495** (440-575)	**640** (450-868)	353
Nonsmokers							
Total	11-12	**111** (102-121)	**120** (109-132)	**217** (195-233)	**348** (316-369)	**418** (372-489)	1307
Age group							
20-49 years	11-12	**100** (91.0-110)	**107** (93.3-118)	**193** (169-209)	**313** (260-350)	**373** (339-411)	654
50 years and older	11-12	**125** (114-138)	**132** (118-148)	**240** (220-279)	**372** (333-415)	**489** (418-546)	653
Gender							
Males	11-12	**69.8** (61.1-79.8)	**68.6** (57.5-77.9)	**123** (109-143)	**225** (180-279)	**319** (250-407)	624
Females	11-12	**162** (147-179)	**170** (153-189)	**274** (236-308)	**374** (350-420)	**478** (400-546)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Mandelic acid

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**283** (244-330)	**283** (255-351)	**499** (454-597)	**899** (737-1000)	**1200** (969-1420)	889
Age group							
20-49 years	11-12	**278** (228-340)	**287** (252-373)	**501** (437-607)	**890** (677-1070)	**1200** (958-1610)	532
50 years and older	11-12	**292** (260-328)	**268** (242-336)	**483** (449-597)	**929** (661-1050)	**1200** (953-1270)	357
Gender							
Males	11-12	**298** (242-366)	**319** (263-374)	**630** (479-720)	**1010** (835-1250)	**1390** (1130-1610)	536
Females	11-12	**266** (237-299)	**261** (236-297)	**455** (390-493)	**662** (536-806)	**850** (705-1060)	353
Nonsmokers							
Total	11-12	**129** (118-142)	**139** (121-157)	**236** (196-269)	**355** (312-395)	**465** (396-534)	1308
Age group							
20-49 years	11-12	**139** (122-158)	**151** (131-179)	**264** (227-297)	**388** (322-449)	**530** (420-657)	655
50 years and older	11-12	**120** (109-131)	**131** (108-147)	**196** (174-236)	**339** (258-360)	**415** (355-490)	653
Gender							
Males	11-12	**161** (148-175)	**169** (142-191)	**260** (230-300)	**377** (315-452)	**505** (388-672)	625
Females	11-12	**108** (95.6-123)	**117** (99.8-138)	**193** (168-238)	**340** (279-408)	**449** (366-504)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 12.0.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html**
Factsheet: **http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html**

Urinary Mandelic acid (creatinine corrected)

Metabolite of Styrene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**311** (280-345)	**311** (282-328)	**475** (432-531)	**723** (610-835)	**882** (785-1060)	889
Age group							
20-49 years	11-12	**287** (256-321)	**286** (244-321)	**443** (420-483)	**701** (609-787)	**836** (769-968)	532
50 years and older	11-12	**355** (318-396)	**334** (316-384)	**516** (438-608)	**785** (541-1130)	**968** (686-1160)	357
Gender							
Males	11-12	**289** (252-332)	**280** (243-319)	**440** (405-488)	**736** (552-835)	**882** (736-1150)	536
Females	11-12	**340** (303-382)	**330** (313-381)	**531** (427-609)	**675** (608-880)	**880** (675-968)	353
Nonsmokers							
Total	11-12	**150** (141-160)	**147** (137-158)	**198** (185-222)	**284** (257-316)	**361** (324-400)	1307
Age group							
20-49 years	11-12	**150** (140-161)	**147** (138-156)	**194** (184-222)	**271** (245-317)	**361** (285-410)	654
50 years and older	11-12	**151** (138-164)	**147** (131-165)	**200** (176-240)	**295** (256-326)	**361** (305-471)	653
Gender							
Males	11-12	**140** (134-147)	**137** (126-146)	**180** (165-197)	**238** (224-264)	**308** (268-354)	624
Females	11-12	**159** (145-174)	**158** (145-173)	**222** (199-241)	**317** (269-361)	**385** (352-454)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary 2-Methylhippuric acid

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**99.4** (87.4-113)	**105** (94.6-114)	**181** (163-209)	**287** (250-369)	**408** (337-434)	889
Age group							
20-49 years	11-12	**94.5** (81.6-109)	**105** (93.9-112)	**175** (155-198)	**276** (222-353)	**407** (264-453)	532
50 years and older	11-12	**108** (95.0-123)	**104** (88.1-137)	**192** (169-217)	**324** (238-398)	**423** (366-477)	357
Gender							
Males	11-12	**105** (85.8-129)	**113** (96.2-142)	**208** (174-250)	**353** (253-408)	**408** (308-475)	536
Females	11-12	**92.6** (84.7-101)	**94.6** (89.1-104)	**157** (133-176)	**232** (203-275)	**327** (242-426)	353
Nonsmokers							
Total	11-12	**25.9** (23.0-29.0)	**24.9** (21.4-27.4)	**55.0** (46.5-64.8)	**109** (95.2-138)	**170** (129-211)	1308
Age group							
20-49 years	11-12	**28.3** (24.9-32.1)	**25.9** (22.5-29.9)	**62.0** (48.6-72.4)	**114** (95.2-146)	**170** (127-211)	655
50 years and older	11-12	**23.5** (19.9-27.7)	**23.4** (18.6-27.5)	**49.6** (38.8-62.3)	**107** (77.3-149)	**170** (113-224)	653
Gender							
Males	11-12	**31.0** (24.8-38.9)	**27.3** (20.9-34.8)	**65.1** (43.8-86.8)	**147** (91.9-188)	**200** (116-580)	625
Females	11-12	**22.3** (19.4-25.7)	**22.4** (19.7-25.6)	**49.0** (39.6-58.0)	**98.7** (74.9-111)	**138** (107-172)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 5.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 2-Methylhippuric acid (creatinine corrected)

Metabolite of Xylene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**109** (96.5-123)	**116** (99.3-134)	**199** (175-229)	**330** (252-374)	**382** (339-440)	889
Age group							
20-49 years	11-12	**97.4** (83.6-113)	**95.4** (80.8-112)	**193** (160-211)	**324** (232-357)	**377** (339-438)	532
50 years and older	11-12	**131** (119-145)	**142** (124-157)	**214** (182-248)	**332** (252-398)	**423** (330-486)	357
Gender							
Males	11-12	**102** (86.0-122)	**101** (85.6-126)	**177** (139-226)	**332** (201-376)	**374** (339-409)	536
Females	11-12	**118** (97.2-144)	**138** (104-159)	**229** (186-270)	**330** (270-398)	**416** (324-533)	353
Nonsmokers							
Total	11-12	**30.1** (27.0-33.6)	**28.0** (24.1-32.6)	**59.6** (52.1-65.5)	**110** (97.2-130)	**156** (134-197)	1307
Age group							
20-49 years	11-12	**30.6** (27.4-34.1)	**28.5** (26.1-32.3)	**58.5** (47.5-68.4)	**96.9** (85.6-117)	**146** (100-201)	654
50 years and older	11-12	**29.5** (25.7-34.0)	**28.0** (21.7-35.4)	**60.8** (51.8-72.3)	**132** (110-141)	**159** (142-201)	653
Gender							
Males	11-12	**27.1** (22.2-33.0)	**26.1** (21.8-31.7)	**54.6** (41.8-71.5)	**94.8** (79.2-123)	**140** (98.9-175)	624
Females	11-12	**32.7** (29.4-36.5)	**30.4** (26.7-36.0)	**62.5** (54.5-69.5)	**133** (109-140)	**175** (146-204)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 3-and 4-Methylhippuric acid

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**668** (576-775)	**715** (601-866)	**1320** (1140-1510)	**2080** (1960-2400)	**2850** (2380-3410)	889
Age group							
20-49 years	11-12	**616** (520-731)	**711** (585-866)	**1260** (1080-1410)	**1920** (1700-2290)	**2590** (2080-2960)	532
50 years and older	11-12	**763** (656-886)	**722** (590-1020)	**1500** (1160-1970)	**2400** (1900-3930)	**3610** (2400-4710)	357
Gender							
Males	11-12	**693** (548-877)	**854** (599-983)	**1500** (1200-1770)	**2270** (1880-2960)	**3170** (2070-3940)	536
Females	11-12	**637** (575-706)	**658** (590-810)	**1090** (994-1250)	**1970** (1490-2400)	**2430** (2060-2860)	353
Nonsmokers							
Total	11-12	**173** (158-189)	**165** (144-192)	**372** (311-467)	**789** (688-952)	**1330** (1170-1470)	1308
Age group							
20-49 years	11-12	**172** (150-197)	**159** (137-196)	**376** (304-467)	**789** (683-967)	**1290** (949-1560)	655
50 years and older	11-12	**174** (151-200)	**168** (132-208)	**359** (291-506)	**789** (609-1070)	**1370** (1030-1590)	653
Gender							
Males	11-12	**203** (167-247)	**187** (143-229)	**399** (298-578)	**941** (694-1230)	**1450** (1030-1660)	625
Females	11-12	**152** (134-171)	**148** (126-166)	**353** (276-462)	**730** (609-897)	**1210** (846-1470)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 8.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Urinary 3-and 4-Methylhippuric acid (creatinine corrected)

Metabolite of Xylene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**732** (647-828)	**800** (738-854)	**1300** (1110-1550)	**1990** (1690-2170)	**2260** (2050-2510)	889
Age group							
20-49 years	11-12	**635** (551-732)	**656** (547-806)	**1160** (1040-1320)	**1960** (1520-2060)	**2170** (2000-2490)	532
50 years and older	11-12	**927** (831-1030)	**971** (850-1110)	**1550** (1210-1750)	**2050** (1690-2570)	**2470** (1960-2890)	357
Gender							
Males	11-12	**673** (558-812)	**739** (583-870)	**1110** (933-1320)	**1730** (1380-2050)	**2080** (1880-2380)	536
Females	11-12	**813** (688-961)	**952** (795-1080)	**1580** (1300-1770)	**2080** (1940-2250)	**2470** (2050-3140)	353
Nonsmokers							
Total	11-12	**201** (187-215)	**164** (148-188)	**388** (342-452)	**767** (707-803)	**1060** (922-1210)	1307
Age group							
20-49 years	11-12	**186** (170-203)	**154** (137-184)	**374** (310-416)	**620** (545-733)	**776** (696-960)	654
50 years and older	11-12	**218** (197-243)	**169** (149-193)	**460** (342-578)	**942** (798-1060)	**1290** (1030-1520)	653
Gender							
Males	11-12	**177** (151-207)	**147** (120-180)	**338** (247-462)	**647** (530-739)	**841** (675-1140)	624
Females	11-12	**223** (206-240)	**179** (161-206)	**447** (374-540)	**853** (770-1020)	**1290** (960-1520)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html**

Urinary Phenylglyoxylic acid

Metabolite of Ethylbenzene and Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**309** (274-348)	**347** (304-387)	**554** (479-660)	**900** (768-1040)	**1140** (973-1530)	889
Age group							
20-49 years	11-12	**304** (259-358)	**355** (292-407)	**571** (459-710)	**900** (743-1060)	**1120** (900-1280)	532
50 years and older	11-12	**316** (273-365)	**333** (254-424)	**530** (462-664)	**911** (673-1530)	**1530** (782-1730)	357
Gender							
Males	11-12	**323** (274-382)	**383** (323-424)	**631** (501-782)	**1060** (831-1310)	**1340** (1000-1730)	536
Females	11-12	**291** (262-323)	**316** (274-355)	**505** (447-616)	**771** (664-879)	**991** (771-1120)	353
Nonsmokers							
Total	11-12	**160** (146-175)	**184** (168-197)	**298** (268-325)	**425** (392-468)	**566** (478-655)	1308
Age group							
20-49 years	11-12	**160** (142-180)	**186** (160-211)	**312** (276-359)	**464** (413-562)	**630** (540-732)	655
50 years and older	11-12	**160** (144-177)	**178** (160-198)	**278** (240-312)	**394** (366-431)	**486** (420-596)	653
Gender							
Males	11-12	**195** (172-221)	**217** (190-252)	**338** (306-377)	**464** (419-559)	**573** (540-598)	625
Females	11-12	**136** (124-150)	**145** (134-164)	**240** (220-275)	**392** (342-438)	**524** (397-712)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 12.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Ethylbenzene_BiomonitoringSummary.html
Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary Phenylglyoxylic acid (creatinine corrected)

Metabolite of Ethylbenzene and Styrene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**338** (306-374)	**350** (306-397)	**507** (444-573)	**681** (579-767)	**782** (679-959)	889
Age group							
20-49 years	11-12	**313** (281-350)	**313** (266-386)	**476** (407-536)	**620** (544-699)	**749** (630-841)	532
50 years and older	11-12	**384** (338-436)	**400** (374-429)	**579** (473-712)	**726** (583-874)	**874** (716-1120)	357
Gender							
Males	11-12	**314** (285-346)	**322** (283-383)	**481** (407-528)	**600** (536-717)	**731** (590-874)	536
Females	11-12	**371** (319-432)	**379** (295-470)	**562** (461-670)	**726** (630-841)	**841** (716-1120)	353
Nonsmokers							
Total	11-12	**186** (172-200)	**194** (178-209)	**255** (240-271)	**329** (313-354)	**394** (357-420)	1307
Age group							
20-49 years	11-12	**172** (160-186)	**175** (159-197)	**235** (225-255)	**303** (276-331)	**362** (321-417)	654
50 years and older	11-12	**201** (186-217)	**209** (193-228)	**277** (259-291)	**357** (329-379)	**407** (367-448)	653
Gender							
Males	11-12	**169** (155-185)	**169** (158-188)	**228** (219-236)	**310** (278-331)	**360** (329-400)	624
Females	11-12	**200** (184-216)	**206** (194-227)	**273** (252-290)	**346** (318-394)	**407** (358-472)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Ethylbenzene_BiomonitoringSummary.html
Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Styrene_FactSheet.html

Urinary 2-Thioxothiazolidine-4-carboxylic acid

Metabolite of Carbon disulfide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**11.4** (9.99-12.9)	**10.0** (8.04-12.1)	**24.0** (19.7-26.8)	**50.5** (41.7-63.8)	**84.5** (61.2-183)	889
Age group							
20-49 years	11-12	**11.0** (9.26-13.2)	**10.0** (7.54-12.9)	**23.3** (14.8-29.3)	**42.9** (33.7-63.8)	**84.0** (63.8-145)	532
50 years and older	11-12	**11.9** (9.84-14.4)	**9.92** (7.55-13.1)	**26.3** (18.4-33.9)	**61.2** (35.8-89.6)	**140** (61.2-399)	357
Gender							
Males	11-12	**11.7** (10.4-13.2)	**10.7** (9.01-12.2)	**24.0** (18.2-35.3)	**53.4** (42.5-69.7)	**93.3** (61.2-183)	536
Females	11-12	**11.0** (9.07-13.3)	**8.93** (6.86-12.4)	**23.8** (14.8-26.3)	**47.5** (32.5-69.3)	**84.5** (38.7-317)	353
Nonsmokers							
Total	11-12	**8.83** (7.94-9.82)	**6.91** (6.12-7.68)	**18.7** (14.9-22.6)	**56.3** (38.4-71.0)	**115** (77.0-144)	1308
Age group							
20-49 years	11-12	**8.87** (7.60-10.3)	**6.67** (5.20-8.51)	**18.9** (13.1-27.6)	**62.3** (37.1-98.4)	**115** (71.0-157)	655
50 years and older	11-12	**8.78** (7.65-10.1)	**6.95** (6.18-7.86)	**18.3** (13.0-23.6)	**48.8** (34.0-60.7)	**104** (60.2-176)	653
Gender							
Males	11-12	**11.4** (9.61-13.5)	**8.14** (7.07-10.3)	**27.7** (20.5-32.3)	**77.0** (53.2-135)	**176** (100-244)	625
Females	11-12	**7.20** (6.61-7.84)	**5.65** (4.68-6.44)	**13.2** (11.0-17.0)	**37.0** (27.9-46.0)	**74.2** (52.5-103)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 3.5.

Urinary 2-Thioxothiazolidine-4-carboxylic acid (creatinine corrected)

Metabolite of Carbon disulfide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**12.5** (11.1-14.0)	**11.0** (9.01-12.7)	**20.7** (17.1-25.9)	**58.6** (40.5-75.1)	**93.8** (75.1-135)	889
Age group							
20-49 years	11-12	**11.4** (10.3-12.6)	**10.0** (8.35-12.4)	**18.3** (16.3-23.5)	**42.4** (37.8-54.3)	**81.6** (54.3-146)	532
50 years and older	11-12	**14.5** (11.7-17.8)	**11.7** (9.17-15.2)	**25.0** (19.0-44.9)	**75.1** (28.1-89.5)	**93.8** (75.1-179)	357
Gender							
Males	11-12	**11.3** (10.1-12.7)	**9.55** (8.13-12.4)	**20.0** (15.8-26.3)	**47.0** (38.4-60.2)	**81.5** (59.5-118)	536
Females	11-12	**14.0** (12.0-16.3)	**11.9** (9.26-13.4)	**23.5** (18.5-29.3)	**75.1** (39.4-89.5)	**93.8** (58.6-334)	353
Nonsmokers							
Total	11-12	**10.3** (9.13-11.5)	**8.26** (7.19-9.46)	**20.3** (17.6-23.3)	**54.8** (43.7-69.2)	**108** (79.5-170)	1307
Age group							
20-49 years	11-12	**9.57** (8.16-11.2)	**7.68** (6.50-9.19)	**19.4** (13.8-28.4)	**53.7** (33.8-84.5)	**107** (57.9-153)	654
50 years and older	11-12	**11.0** (9.45-12.9)	**9.08** (7.42-10.3)	**21.6** (17.8-24.1)	**55.7** (41.0-73.2)	**136** (69.2-222)	653
Gender							
Males	11-12	**9.90** (8.36-11.7)	**7.75** (5.99-10.2)	**21.7** (18.4-27.6)	**55.7** (41.0-82.0)	**135** (57.9-234)	624
Females	11-12	**10.5** (9.29-12.0)	**8.96** (7.21-10.1)	**19.0** (14.3-24.8)	**51.4** (39.7-67.3)	**107** (73.2-158)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Special Analysis of Pooled Samples for Select Chemicals

Statement of need

In the National Biomonitoring Program, the decision to pool samples before making chemical measurements has been driven by at least two factors:

- The need to improve the sensitivity of the measurement; that is, the chemical concentrations are so low that a larger sample volume is necessary to achieve lower limits of detection and greater likelihood of detectable results; and
- The need to reduce the number of samples analyzed, based on weighing the costs of the analysis against a low frequency of detectable results.

Pooled Samples in the *Updated Tables*

This release of the *Updated Tables* includes NHANES 2005-2006 and 2007-2008 results for chemicals that were measured in samples created from pools of serum samples. The historical data tables for these chemicals with results for NHANES survey periods prior to 2005-2006 are included and show results for individual sample measurements. Each historical data table is presented before its corresponding pooled sample data table. PCBs 114 and 123 and the brominated flame retardant BDE 209 were not measured prior to NHANES 2005-2006; therefore, for these chemicals only the pooled data tables are presented. In addition, five organochlorine pesticides were not measured after NHANES 2003-2004, so there are no pooled data tables for these chemicals.

Overview of Sample Pooling

Beginning with NHANES 2005-2006, the CDC is using a weighted pooled-sample design to measure serum concentrations of dioxins, furans, polychlorinated biphenyls (PCBs), organochlorine pesticides and metabolites, and the brominated flame retardants (polybrominated diphenyl ethers and the polybrominated diphenyl, PBB 153). In previous NHANES survey periods, measurements were made on individual serum samples from the U.S. population using stratified multistage selection.

Although NHANES sampling weights can be incorporated to make pooled sample estimates representative of the non-institutionalized U.S. population, there are statistical estimation challenges. Measurements of these chemicals in individuals tend to have a log-normal distribution with central tendency best estimated using a geometric mean. However, the measured value for a pooled sample is comparable to an arithmetic average of measurements in individuals. Consequently, the pooled sample result is expected to be higher than the geometric mean of multiple individual results. Another challenge is that direct calculation of the design effects required for accurate standard error and confidence interval estimation is not possible because samples are pooled across the design cells of the original survey. For these reasons, data tables showing the pooled sample results present only weighted arithmetic means and unadjusted standard errors for each category.

Interpreting the Data

The following cautions and suggestions apply to the pooled sample results and data tables:

a) Individual sample data, as explained above, tend to be log-normally distributed with central tendency best estimated using a geometric mean. Pooled data are comparable to an arithmetic mean of individual sample results and therefore, pooled data results are expected to be higher than the geometric mean of individual sample results. Therefore, the weighted arithmetic means from pooled samples are expected to be higher than the geometric means provided in the historical (companion) data tables or in other publications based on data provided on individual results.

b) The standard errors are unadjusted and therefore, do not reflect the design effects of the survey. In many cases, the standard errors are based on very few pooled sample measurements and cannot be expected to accurately reflect the true imprecision of the weighted arithmetic mean estimates. Therefore, when the unadjusted standard error was more than 30% of the weighted arithmetic mean, this is noted with a double asterisk (**) and footnoted.

Additional information about sample pooling is available from the following sources:

Geometric mean estimation from pooled samples (2007)

http://www.ncbi.nlm.nih.gov/pubmed/17618673

Characterizing populations of individuals using pooled samples (2010)

http://www.ncbi.nlm.nih.gov/pubmed/19002216

Use of pooled samples from the National Health and Nutrition Examination Survey (2012)

http://www.ncbi.nlm.nih.gov/pubmed/22492247

Estimation of exposure distributions from pooled samples (2014)

http://www.ncbi.nlm.nih.gov/pubmed/25213192

Serum Oxychlordane (lipid adjusted)

Metabolite of Chlordane

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	20.8 (17.8-23.0)	34.4 (30.5-38.6)	44.8 (40.2-49.6)	1661
	01-02	11.4 (<LOD-12.5)	11.1 (<LOD-12.5)	21.7 (19.3-24.4)	36.4 (31.5-41.4)	49.7 (42.0-61.2)	2249
	03-04	9.37 (8.69-10.1)	10.3 (9.20-11.0)	18.0 (16.8-20.1)	29.0 (26.8-32.1)	37.7 (34.8-43.8)	1978
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	663
	01-02	*	< LOD	< LOD	< LOD	11.5 (<LOD-12.6)	752
	03-04	*	< LOD	< LOD	9.20 (<LOD-11.5)	11.5 (8.10-18.9)	595
20 years and older	99-00	*	< LOD	23.3 (21.0-25.9)	37.7 (32.3-43.5)	47.7 (43.1-50.8)	998
	01-02	12.9 (11.7-14.3)	13.3 (11.4-14.9)	23.9 (21.2-26.7)	38.5 (33.4-45.9)	53.1 (44.1-65.9)	1497
	03-04	10.6 (9.82-11.5)	11.4 (10.6-12.4)	19.9 (17.9-21.5)	31.3 (28.8-33.2)	39.2 (36.5-44.8)	1383
Gender							
Males	99-00	*	< LOD	18.1 (16.1-19.6)	31.3 (25.9-38.2)	42.4 (35.3-49.6)	793
	01-02	11.1 (<LOD-12.6)	11.1 (<LOD-12.6)	20.6 (16.6-24.9)	33.1 (27.5-43.8)	48.1 (40.2-56.9)	1049
	03-04	9.10 (8.20-10.1)	9.90 (8.30-11.2)	17.1 (15.6-18.4)	27.6 (25.3-32.2)	36.0 (32.7-39.2)	963
Females	99-00	*	< LOD	22.3 (20.1-25.9)	36.9 (31.5-40.3)	46.2 (39.1-51.8)	868
	01-02	11.7 (10.7-12.7)	11.0 (<LOD-12.9)	23.1 (20.7-25.0)	37.5 (34.5-42.1)	52.8 (42.7-70.0)	1200
	03-04	9.63 (8.89-10.4)	10.6 (9.10-11.3)	20.1 (17.4-21.7)	30.3 (27.5-32.7)	41.9 (36.3-45.5)	1015
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	16.3 (<LOD-19.9)	28.9 (18.8-42.0)	39.9 (26.8-61.0)	628
	01-02	*	< LOD	13.9 (11.0-18.4)	27.2 (21.0-33.1)	37.9 (29.9-42.0)	557
	03-04	*	< LOD	12.8 (10.1-15.8)	22.9 (15.8-31.4)	31.4 (22.4-51.6)	462
Non-Hispanic blacks	99-00	*	< LOD	18.7 (<LOD-32.2)	39.9 (26.5-47.3)	48.6 (43.5-65.5)	350
	01-02	11.7 (<LOD-13.6)	< LOD	22.8 (17.2-28.3)	41.4 (30.6-53.7)	56.5 (41.8-73.5)	501
	03-04	8.74 (<LOD-10.2)	8.70 (<LOD-10.6)	18.9 (15.9-21.5)	35.1 (25.4-40.2)	44.2 (37.7-56.8)	493
Non-Hispanic whites	99-00	*	< LOD	21.8 (18.6-24.6)	34.2 (28.9-40.9)	44.0 (37.2-49.8)	559
	01-02	12.1 (11.0-13.3)	11.8 (10.5-13.9)	23.0 (20.1-25.7)	37.5 (31.6-45.1)	52.2 (41.0-67.4)	1031
	03-04	10.2 (9.36-11.1)	11.2 (10.0-12.1)	19.7 (17.2-21.7)	30.3 (26.8-33.6)	37.7 (34.3-45.5)	898

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 14.5, 10.5, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum Oxychlordane (lipid adjusted)

Metabolite of Chlordane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**4.80**	1.1	9
		07-08	**3.52**	0.52	6
	20-39	05-06	**6.50**	1.06	12
		07-08	**6.93**	0.75	15
	40-59	05-06	**14.9**	1.4	12
		07-08	**12.1**	0.5	16
	60+	05-06	**25.4**	2.5	15
		07-08	**26.1**	1.4	23
Non-Hispanic White Female	12-19	05-06	**2.98**	0.3	10
		07-08	**3.66**	0.74	7
	20-39	05-06	**5.64**	0.56	16
		07-08	**5.79**	0.51	13
	40-59	05-06	**13.7**	1	13
		07-08	**11.8**	0.8	17
	60+	05-06	**28.9**	2.6	17
		07-08	**31.8**	2.3	21
Non-Hispanic Black Male	12-19	05-06	**4.08**	0.49	13
		07-08	**2.80**	0.75	6
	20-39	05-06	**4.53**	0.9	6
		07-08	**5.72**	0.28	6
	40-59	05-06	**12.0**	1	5
		07-08	**12.1**	1.1	6
	60+	05-06	**32.7**	5.3	5
		07-08	**26.6**	2.5	8
Non-Hispanic Black Female	12-19	05-06	**2.92**	0.31	14
		07-08	*	*	5
	20-39	05-06	**5.56**	0.68	7
		07-08	**4.45**	0.79	8
	40-59	05-06	**14.5**	0.8	7
		07-08	**14.3**	1	8
	60+	05-06	**52.9**	11.7	5
		07-08	**38.1**	1.7	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum Oxychlordane (lipid adjusted)

Metabolite of Chlordane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**2.54**	0.33	11
		07-08	**2.76**	0.45	6
	20-39	05-06	**5.84**	1.22	9
		07-08	**4.93**	0.38	9
	40-59	05-06	**11.0**	1.4	4
		07-08	**12.0**	0.7	6
	60+	05-06	**18.6**	2.4	4
		07-08	**21.9**	2.2	5
Mexican American Female	12-19	05-06	**2.39**	0.25	16
		07-08	*	*	5
	20-39	05-06	**4.39**	0.5	9
		07-08	**4.17**	0.55	8
	40-59	05-06	**13.7**	1.8	6
		07-08	**13.4**	2.2	6
	60+	05-06	**27.4**	3.8	3
		07-08	**28.2**	4.3	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum Oxychlordane (whole weight)

Metabolite of Chlordane

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**.140** (.120-.150)	**.260** (.200-.290)	**.310** (.290-.340)	1661
	01-02	**.070** (<LOD-.077)	**.070** (<LOD-.080)	**.140** (.130-.160)	**.250** (.220-.300)	**.350** (.290-.440)	2249
	03-04	**.057** (.053-.062)	**.063** (.058-.068)	**.119** (.106-.133)	**.204** (.189-.213)	**.269** (.246-.291)	1978
Age group							
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	663
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.060** (<LOD-.070)	752
	03-04	*	**< LOD**	**< LOD**	**.047** (<LOD-.063)	**.066** (.048-.092)	595
20 years and older	99-00	*	**< LOD**	**.150** (.140-.180)	**.280** (.230-.300)	**.330** (.300-.400)	998
	01-02	**.082** (.074-.091)	**.080** (.070-.090)	**.160** (.140-.180)	**.270** (.230-.320)	**.370** (.310-.450)	1497
	03-04	**.067** (.061-.073)	**.073** (.066-.079)	**.130** (.115-.146)	**.210** (.203-.227)	**.286** (.258-.320)	1383
Gender							
Males	99-00	*	**< LOD**	**.120** (.100-.140)	**.220** (.180-.280)	**.300** (.260-.340)	793
	01-02	**.069** (<LOD-.079)	**.070** (<LOD-.080)	**.130** (.120-.160)	**.230** (.190-.300)	**.320** (.250-.430)	1049
	03-04	**.056** (.050-.063)	**.063** (.055-.076)	**.115** (.100-.126)	**.189** (.168-.207)	**.258** (.216-.302)	963
Females	99-00	*	**< LOD**	**.140** (.130-.170)	**.270** (.200-.310)	**.320** (.290-.400)	868
	01-02	**.071** (.065-.077)	**.070** (<LOD-.080)	**.150** (.130-.160)	**.260** (.230-.310)	**.370** (.280-.510)	1200
	03-04	**.058** (.053-.064)	**.063** (.057-.068)	**.126** (.104-.146)	**.208** (.199-.231)	**.286** (.245-.331)	1015
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**.100** (<LOD-.130)	**.210** (.130-.320)	**.290** (.190-.410)	628
	01-02	*	**< LOD**	**.100** (.070-.130)	**.200** (.150-.240)	**.280** (.210-.360)	557
	03-04	*	**< LOD**	**.083** (.066-.104)	**.149** (.108-.230)	**.230** (.148-.373)	462
Non-Hispanic blacks	99-00	*	**< LOD**	**.110** (<LOD-.170)	**.240** (.170-.290)	**.320** (.240-.430)	350
	01-02	**.066** (<LOD-.077)	**< LOD**	**.130** (.090-.170)	**.260** (.180-.350)	**.350** (.240-.560)	501
	03-04	**.049** (<LOD-.057)	**.050** (<LOD-.062)	**.112** (.087-.136)	**.225** (.165-.287)	**.315** (.253-.348)	493
Non-Hispanic whites	99-00	*	**< LOD**	**.140** (.120-.170)	**.270** (.200-.300)	**.320** (.280-.380)	559
	01-02	**.075** (.068-.083)	**.080** (.070-.090)	**.150** (.130-.170)	**.250** (.220-.310)	**.370** (.280-.450)	1031
	03-04	**.063** (.058-.070)	**.070** (.063-.077)	**.128** (.110-.148)	**.207** (.190-.223)	**.271** (.242-.315)	898

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum Oxychlordane (whole weight)

Metabolite of Chlordane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.026**	0.006	9
		07-08	**.018**	0.003	6
	20-39	05-06	**.049**	0.01	12
		07-08	**.047**	0.006	15
	40-59	05-06	**.113**	0.013	12
		07-08	**.089**	0.005	16
	60+	05-06	**.171**	0.015	15
		07-08	**.167**	0.009	23
Non-Hispanic White Female	12-19	05-06	**.016**	0.002	10
		07-08	**.017**	0.004	7
	20-39	05-06	**.037**	0.004	16
		07-08	**.035**	0.003	13
	40-59	05-06	**.101**	0.01	13
		07-08	**.079**	0.006	17
	60+	05-06	**.210**	0.017	17
		07-08	**.214**	0.017	21
Non-Hispanic Black Male	12-19	05-06	**.020**	0.002	13
		07-08	**.013**	0.003	6
	20-39	05-06	**.027**	0.005	6
		07-08	**.032**	0.002	6
	40-59	05-06	**.076**	0.006	5
		07-08	**.077**	0.007	6
	60+	05-06	**.193**	0.028	5
		07-08	**.162**	0.017	8
Non-Hispanic Black Female	12-19	05-06	**.014**	0.001	14
		07-08	*	*	5
	20-39	05-06	**.032**	0.004	7
		07-08	**.022**	0.004	8
	40-59	05-06	**.093**	0.006	7
		07-08	**.086**	0.008	8
	60+	05-06	**.347**	0.067	5
		07-08	**.229**	0.012	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum Oxychlordane (whole weight)

Metabolite of Chlordane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.014**	0.002	11
		07-08	**.014**	0.002	6
	20-39	05-06	**.041**	0.007	9
		07-08	**.034**	0.004	9
	40-59	05-06	**.089**	0.014	4
		07-08	**.087**	0.009	6
	60+	05-06	**.137**	0.025	4
		07-08	**.156**	0.011	5
Mexican American Female	12-19	05-06	**.013**	0.001	16
		07-08	*	*	5
	20-39	05-06	**.029**	0.003	9
		07-08	**.024**	0.004	8
	40-59	05-06	**.100**	0.011	6
		07-08	**.090**	0.014	6
	60+	05-06	**.208**	0.035	3
		07-08	**.193**	0.03	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum *trans*-Nonachlor (lipid adjusted)

Metabolite of Chlordane

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**18.3** (16.7-20.0)	**17.9** (16.1-20.1)	**31.9** (28.9-36.0)	**55.1** (48.4-62.6)	**79.4** (67.6-88.1)	1933
	01-02	**17.0** (15.2-18.9)	**17.9** (15.5-20.5)	**33.7** (30.2-37.2)	**56.3** (49.6-66.0)	**78.2** (64.0-113)	2286
	03-04	**14.7** (13.1-16.5)	**14.8** (13.5-17.0)	**30.2** (26.7-32.5)	**49.0** (42.6-54.7)	**68.3** (58.6-82.3)	1955
Age group							
12-19 years	99-00	*	**< LOD**	**< LOD**	**18.8** (<LOD-20.6)	**25.2** (19.1-28.4)	664
	01-02	*	**< LOD**	**< LOD**	**13.4** (11.8-16.4)	**19.2** (15.2-23.5)	758
	03-04	*	**< LOD**	**8.70** (<LOD-12.5)	**16.1** (10.7-23.7)	**22.6** (16.1-34.6)	589
20 years and older	99-00	**20.8** (19.0-22.8)	**20.7** (18.0-23.5)	**35.4** (30.9-40.3)	**59.9** (51.8-67.6)	**82.7** (74.9-89.6)	1269
	01-02	**19.8** (17.6-22.3)	**20.9** (19.0-23.1)	**36.6** (32.8-41.1)	**60.6** (52.5-69.9)	**84.9** (66.0-123)	1528
	03-04	**16.9** (15.1-18.9)	**17.3** (14.6-20.0)	**31.8** (28.9-35.3)	**51.4** (45.9-58.6)	**74.7** (59.8-90.0)	1366
Gender							
Males	99-00	**17.7** (16.5-19.1)	**17.2** (14.9-20.1)	**30.2** (27.7-34.2)	**51.1** (47.3-58.6)	**78.2** (60.2-88.1)	922
	01-02	**17.0** (14.8-19.5)	**18.3** (14.8-21.1)	**34.4** (28.3-39.3)	**54.8** (45.0-68.9)	**78.2** (59.7-113)	1062
	03-04	**14.8** (12.7-17.3)	**14.6** (12.2-18.0)	**30.8** (26.7-35.3)	**51.0** (42.0-59.4)	**68.6** (56.0-93.8)	955
Females	99-00	**18.8** (16.7-21.1)	**18.4** (16.1-22.2)	**32.9** (29.0-38.3)	**59.0** (48.4-67.6)	**80.8** (71.5-95.5)	1011
	01-02	**17.0** (15.4-18.7)	**17.6** (15.0-20.3)	**32.8** (30.4-36.7)	**56.9** (51.9-65.5)	**78.1** (65.5-111)	1224
	03-04	**14.5** (13.1-16.1)	**15.0** (13.8-16.3)	**28.2** (25.3-32.8)	**48.1** (41.4-52.7)	**68.3** (56.8-79.9)	1000
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**25.1** (22.7-29.5)	**40.7** (35.1-51.8)	**56.3** (45.8-77.2)	650
	01-02	**11.9** (<LOD-14.6)	**10.6** (<LOD-14.5)	**26.0** (19.3-30.4)	**47.9** (36.3-57.2)	**59.8** (49.3-74.1)	558
	03-04	**10.2** (7.86-13.2)	**9.10** (<LOD-11.1)	**20.7** (11.1-34.7)	**39.5** (25.9-65.5)	**62.2** (36.0-93.4)	457
Non-Hispanic blacks	99-00	**20.3** (17.0-24.1)	**17.5** (15.4-23.5)	**35.7** (28.9-45.5)	**77.0** (60.8-90.7)	**107** (84.0-143)	404
	01-02	**18.8** (15.4-22.9)	**19.2** (14.7-22.0)	**36.8** (28.3-50.5)	**73.6** (50.8-110)	**112** (68.7-160)	514
	03-04	**14.4** (12.2-17.0)	**13.8** (11.2-16.3)	**30.8** (26.5-36.1)	**59.9** (47.7-77.7)	**86.6** (56.8-129)	486
Non-Hispanic whites	99-00	**19.1** (17.2-21.1)	**19.0** (16.9-22.2)	**32.8** (28.0-37.6)	**52.5** (44.9-64.4)	**74.0** (62.3-86.7)	722
	01-02	**17.5** (15.6-19.7)	**19.0** (16.3-21.1)	**34.0** (29.7-38.1)	**55.5** (45.9-69.4)	**78.7** (59.1-126)	1052
	03-04	**15.8** (13.7-18.2)	**16.0** (13.8-19.3)	**30.8** (26.4-35.0)	**48.8** (42.1-55.7)	**67.6** (57.5-87.3)	889

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 14.5, 10.5, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum *trans*-Nonachlor (lipid adjusted)

Metabolite of Chlordane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	****9.03**	2.84	9
		07-08	**6.06**	1.08	6
	20-39	05-06	**11.3**	2	12
		07-08	**11.1**	1.5	15
	40-59	05-06	**26.9**	3.9	12
		07-08	**21.5**	1.2	16
	60+	05-06	**49.4**	7.9	15
		07-08	**50.6**	4.2	23
Non-Hispanic White Female	12-19	05-06	**4.94**	0.52	10
		07-08	**6.70**	0.89	7
	20-39	05-06	**9.70**	1.44	16
		07-08	**8.95**	0.97	13
	40-59	05-06	**21.8**	2.3	13
		07-08	**16.4**	1.5	17
	60+	05-06	**50.2**	6.1	17
		07-08	**51.7**	6.1	21
Non-Hispanic Black Male	12-19	05-06	**6.50**	0.67	13
		07-08	**4.71**	0.65	6
	20-39	05-06	**8.24**	0.86	6
		07-08	**8.87**	0.97	6
	40-59	05-06	**22.0**	2.6	5
		07-08	**21.7**	2.1	6
	60+	05-06	**66.4**	13.2	5
		07-08	**54.4**	4.9	8
Non-Hispanic Black Female	12-19	05-06	**4.44**	0.54	14
		07-08	****3.39**	1.18	5
	20-39	05-06	**9.32**	1.22	7
		07-08	**6.42**	0.6	8
	40-59	05-06	**24.1**	1.5	7
		07-08	**20.4**	1.7	8
	60+	05-06	**89.0**	15.4	5
		07-08	**68.0**	3.9	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.77 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum *trans*-Nonachlor (lipid adjusted)

Metabolite of Chlordane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**3.71**	0.49	11
		07-08	**3.91**	0.81	6
	20-39	05-06	**7.58**	0.75	9
		07-08	**8.43**	0.97	9
	40-59	05-06	**18.8**	2.4	4
		07-08	**24.5**	2.9	6
	60+	05-06	**30.7**	6.3	4
		07-08	**40.3**	4.5	5
Mexican American Female	12-19	05-06	**3.53**	0.23	16
		07-08	*	*	5
	20-39	05-06	**6.40**	0.75	9
		07-08	**7.55**	0.9	8
	40-59	05-06	**18.5**	1.7	6
		07-08	**22.6**	4.4	6
	60+	05-06	**46.4**	9.8	3
		07-08	**46.9**	8	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.77 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum *trans*-Nonachlor (whole weight)

Metabolite of Chlordane

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.109** (.099-.119)	**.110** (.090-.120)	**.210** (.190-.240)	**.370** (.330-.420)	**.550** (.470-.630)	1933
	01-02	**.104** (.093-.116)	**.110** (.100-.120)	**.220** (.190-.250)	**.390** (.330-.480)	**.590** (.430-.800)	2286
	03-04	**.089** (.080-.100)	**.094** (.084-.108)	**.191** (.171-.211)	**.324** (.290-.371)	**.470** (.410-.558)	1955
Age group							
12-19 years	99-00	*	**< LOD**	**< LOD**	**.090** (<LOD-.110)	**.120** (.100-.130)	664
	01-02	*	**< LOD**	**< LOD**	**.070** (.060-.080)	**.090** (.080-.130)	758
	03-04	*	**< LOD**	**.041** (<LOD-.060)	**.081** (.054-.117)	**.109** (.081-.161)	589
20 years and older	99-00	**.128** (.116-.141)	**.130** (.110-.150)	**.230** (.210-.260)	**.400** (.360-.460)	**.580** (.490-.690)	1269
	01-02	**.125** (.111-.141)	**.130** (.120-.150)	**.240** (.210-.280)	**.420** (.350-.540)	**.640** (.470-.840)	1528
	03-04	**.106** (.095-.119)	**.112** (.096-.127)	**.210** (.186-.237)	**.355** (.301-.405)	**.520** (.430-.594)	1366
Gender							
Males	99-00	**.106** (.098-.114)	**.100** (.090-.120)	**.210** (.180-.220)	**.350** (.310-.400)	**.520** (.400-.630)	922
	01-02	**.105** (.091-.122)	**.110** (.090-.130)	**.220** (.190-.260)	**.380** (.310-.500)	**.580** (.390-.830)	1062
	03-04	**.092** (.079-.108)	**.098** (.085-.126)	**.202** (.177-.232)	**.343** (.285-.395)	**.458** (.395-.594)	955
Females	99-00	**.111** (.099-.125)	**.110** (.090-.130)	**.220** (.190-.250)	**.390** (.310-.460)	**.580** (.460-.690)	1011
	01-02	**.103** (.093-.113)	**.110** (.090-.120)	**.220** (.180-.240)	**.400** (.340-.450)	**.590** (.430-.830)	1224
	03-04	**.087** (.078-.097)	**.092** (.079-.098)	**.183** (.161-.210)	**.317** (.286-.367)	**.470** (.409-.565)	1000
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**.170** (.120-.210)	**.310** (.240-.340)	**.390** (.320-.520)	650
	01-02	**.071** (<LOD-.091)	**.060** (<LOD-.090)	**.160** (.120-.210)	**.330** (.270-.390)	**.470** (.360-.590)	558
	03-04	**.062** (.047-.082)	**.055** (<LOD-.069)	**.135** (.069-.237)	**.288** (.158-.559)	**.414** (.279-.651)	457
Non-Hispanic blacks	99-00	**.112** (.093-.134)	**.100** (.080-.130)	**.220** (.180-.300)	**.490** (.340-.600)	**.760** (.510-.960)	404
	01-02	**.106** (.085-.131)	**.110** (.080-.130)	**.220** (.160-.310)	**.490** (.320-.680)	**.680** (.410-1.20)	514
	03-04	**.080** (.068-.096)	**.078** (.061-.093)	**.186** (.145-.242)	**.417** (.272-.565)	**.573** (.497-.684)	486
Non-Hispanic whites	99-00	**.116** (.104-.129)	**.120** (.100-.140)	**.220** (.190-.240)	**.370** (.300-.440)	**.510** (.440-.630)	722
	01-02	**.108** (.096-.122)	**.120** (.100-.130)	**.220** (.190-.250)	**.390** (.310-.490)	**.600** (.400-.930)	1052
	03-04	**.098** (.085-.113)	**.103** (.090-.124)	**.205** (.173-.234)	**.327** (.288-.390)	**.461** (.397-.576)	889

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum *trans*-Nonachlor(whole weight)

Metabolite of Chlordane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	**.030**	0.005	6
	20-39	05-06	**.086**	0.019	12
		07-08	**.076**	0.011	15
	40-59	05-06	**.206**	0.034	12
		07-08	**.159**	0.012	16
	60+	05-06	**.331**	0.049	15
		07-08	**.325**	0.028	23
Non-Hispanic White Female	12-19	05-06	**.026**	0.003	10
		07-08	**.031**	0.004	7
	20-39	05-06	**.063**	0.01	16
		07-08	**.054**	0.007	13
	40-59	05-06	**.161**	0.019	13
		07-08	**.108**	0.009	17
	60+	05-06	**.362**	0.04	17
		07-08	**.352**	0.045	21
Non-Hispanic Black Male	12-19	05-06	**.032**	0.003	13
		07-08	**.022**	0.003	6
	20-39	05-06	**.049**	0.006	6
		07-08	**.050**	0.006	6
	40-59	05-06	**.140**	0.014	5
		07-08	**.138**	0.013	6
	60+	05-06	**.390**	0.071	5
		07-08	**.331**	0.032	8
Non-Hispanic Black Female	12-19	05-06	**.022**	0.003	14
		07-08	*	*	5
	20-39	05-06	**.054**	0.007	7
		07-08	**.032**	0.003	8
	40-59	05-06	**.154**	0.009	7
		07-08	**.124**	0.012	8
	60+	05-06	**.588**	0.088	5
		07-08	**.409**	0.027	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum *trans*-Nonachlor(whole weight)

Metabolite of Chlordane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.020**	0.002	11
		07-08	**.020**	0.004	6
	20-39	05-06	**.054**	0.005	9
		07-08	**.058**	0.008	9
	40-59	05-06	**.153**	0.022	4
		07-08	**.176**	0.024	6
	60+	05-06	**.228**	0.06	4
		07-08	**.289**	0.028	5
Mexican American Female	12-19	05-06	**.019**	0.001	16
		07-08	*	*	5
	20-39	05-06	**.042**	0.005	9
		07-08	**.044**	0.006	8
	40-59	05-06	**.135**	0.011	6
		07-08	**.151**	0.029	6
	60+	05-06	**.360**	0.095	3
		07-08	**.323**	0.058	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum *p,p'*-Dichlorodiphenyltrichloroethane (DDT) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**28.0** (21.9-34.0)	1679
	01-02	*	< LOD	< LOD	< LOD	**26.6** (22.5-36.0)	2305
	03-04	*	< LOD	< LOD	**11.9** (10.0-15.1)	**19.5** (15.1-27.5)	1965
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	677
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	**9.10** (<LOD-12.2)	595
20 years and older	99-00	*	< LOD	< LOD	< LOD	**30.5** (23.0-37.3)	1002
	01-02	*	< LOD	< LOD	< LOD	**28.1** (23.8-39.0)	1549
	03-04	*	< LOD	< LOD	**12.9** (10.3-16.5)	**20.7** (15.9-28.7)	1370
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**25.1** (<LOD-39.3)	799
	01-02	*	< LOD	< LOD	< LOD	**21.6** (<LOD-25.8)	1073
	03-04	*	< LOD	< LOD	**10.6** (9.10-13.7)	**15.2** (11.8-26.9)	959
Females	99-00	*	< LOD	< LOD	< LOD	**29.4** (23.0-35.8)	880
	01-02	*	< LOD	< LOD	**18.3** (<LOD-21.9)	**36.6** (25.5-54.3)	1232
	03-04	*	< LOD	< LOD	**14.0** (10.8-17.5)	**21.0** (18.0-27.8)	1006
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	**61.3** (27.0-155)	**155** (59.3-590)	635
	01-02	*	< LOD	< LOD	**83.1** (33.3-236)	**293** (104-541)	566
	03-04	*	< LOD	**8.90** (<LOD-12.9)	**24.0** (18.6-33.3)	**48.6** (31.1-71.1)	461
Non-Hispanic blacks	99-00	*	< LOD	< LOD	**22.3** (<LOD-31.5)	**31.5** (23.2-65.0)	356
	01-02	*	< LOD	< LOD	**23.2** (<LOD-40.9)	**40.9** (21.2-95.8)	514
	03-04	*	< LOD	**9.00** (<LOD-10.4)	**17.5** (14.8-23.2)	**30.7** (19.0-53.4)	490
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	564
	01-02	*	< LOD	< LOD	< LOD	**17.9** (<LOD-20.7)	1061
	03-04	*	< LOD	< LOD	**9.70** (8.50-11.2)	**12.9** (10.7-16.6)	890

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 20.7, 17.4, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*- Dichlorodiphenyltrichloroethane (DDT) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**2.23**	0.15	9
		07-08	*	*	6
	20-39	05-06	****10.7**	8.4	12
		07-08	**2.05**	0.37	15
	40-59	05-06	**3.79**	0.26	12
		07-08	**2.81**	0.25	16
	60+	05-06	**5.68**	0.54	15
		07-08	**4.85**	0.47	23
Non-Hispanic White Female	12-19	05-06	**2.27**	0.45	10
		07-08	*	*	7
	20-39	05-06	**2.72**	0.22	16
		07-08	*	*	13
	40-59	05-06	**3.81**	0.41	13
		07-08	**2.90**	0.23	17
	60+	05-06	**6.21**	0.41	17
		07-08	**6.37**	0.91	21
Non-Hispanic Black Male	12-19	05-06	****4.98**	1.85	13
		07-08	*	*	6
	20-39	05-06	****7.55**	3.07	6
		07-08	**1.80**	0.37	6
	40-59	05-06	****7.42**	3.13	5
		07-08	**4.68**	0.69	6
	60+	05-06	**14.9**	3.2	5
		07-08	**6.57**	0.83	8
Non-Hispanic Black Female	12-19	05-06	**2.59**	0.34	14
		07-08	*	*	5
	20-39	05-06	****14.5**	10.8	7
		07-08	*	*	8
	40-59	05-06	**7.36**	1.11	7
		07-08	**5.86**	0.51	8
	60+	05-06	****32.5**	11.5	5
		07-08	**19.3**	3	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyltrichloroethane (DDT) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	****118**	67	11
		07-08	*****	*	6
	20-39	05-06	****46.9**	16	9
		07-08	**18.6**	4.2	9
	40-59	05-06	****107**	62	4
		07-08	****14.7**	7.1	6
	60+	05-06	**7.14**	1.69	4
		07-08	****17.5**	16.1	5
Mexican American Female	12-19	05-06	****21.5**	12.2	16
		07-08	*****	*	5
	20-39	05-06	****47.9**	27.9	9
		07-08	****40.4**	28	8
	40-59	05-06	****33.7**	15.9	6
		07-08	**11.8**	3.1	6
	60+	05-06	**17.3**	4.8	3
		07-08	****119**	151	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyltrichloroethane (DDT) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	.170 (.130-.220)	1679
	01-02	*	< LOD	< LOD	< LOD	.180 (.160-.220)	2305
	03-04	*	< LOD	< LOD	.078 (.065-.097)	.128 (.098-.167)	1965
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	677
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	.048 (<LOD-.069)	595
20 years and older	99-00	*	< LOD	< LOD	< LOD	.190 (.150-.230)	1002
	01-02	*	< LOD	< LOD	< LOD	.200 (.170-.260)	1549
	03-04	*	< LOD	< LOD	.084 (.068-.106)	.142 (.105-.189)	1370
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	.150 (<LOD-.240)	799
	01-02	*	< LOD	< LOD	< LOD	.150 (<LOD-.180)	1073
	03-04	*	< LOD	< LOD	.071 (.059-.095)	.108 (.078-.180)	959
Females	99-00	*	< LOD	< LOD	< LOD	.190 (.150-.230)	880
	01-02	*	< LOD	< LOD	.130 (<LOD-.150)	.240 (.180-.400)	1232
	03-04	*	< LOD	< LOD	.087 (.071-.106)	.146 (.106-.207)	1006
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	.400 (.190-1.00)	1.00 (.330-4.26)	635
	01-02	*	< LOD	< LOD	.530 (.250-1.34)	1.62 (.570-4.01)	566
	03-04	*	< LOD	.063 (<LOD-.079)	.146 (.114-.203)	.313 (.189-.627)	461
Non-Hispanic blacks	99-00	*	< LOD	< LOD	.120 (<LOD-.170)	.180 (.140-.420)	356
	01-02	*	< LOD	< LOD	.130 (<LOD-.290)	.250 (.120-.530)	514
	03-04	*	< LOD	.051 (<LOD-.061)	.112 (.080-.143)	.201 (.132-.343)	490
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	564
	01-02	*	< LOD	< LOD	< LOD	.130 (<LOD-.140)	1061
	03-04	*	< LOD	< LOD	.064 (.054-.075)	.086 (.074-.107)	890

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyltrichloroethane (DDT) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.012**	0.001	9
		07-08	*	*	6
	20-39	05-06	**.088	0.072	12
		07-08	**.014**	0.003	15
	40-59	05-06	**.028**	0.002	12
		07-08	**.021**	0.002	16
	60+	05-06	**.038**	0.003	15
		07-08	**.031**	0.003	23
Non-Hispanic White Female	12-19	05-06	**.012**	0.002	10
		07-08	*	*	7
	20-39	05-06	**.018**	0.002	16
		07-08	*	*	13
	40-59	05-06	**.028**	0.003	13
		07-08	**.019**	0.002	17
	60+	05-06	**.045**	0.003	17
		07-08	**.043**	0.006	21
Non-Hispanic Black Male	12-19	05-06	**.025	0.01	13
		07-08	*	*	6
	20-39	05-06	**.047	0.02	6
		07-08	**.010**	0.002	6
	40-59	05-06	**.048	0.021	5
		07-08	**.030**	0.004	6
	60+	05-06	**.088**	0.019	5
		07-08	**.040**	0.005	8
Non-Hispanic Black Female	12-19	05-06	**.013**	0.002	14
		07-08	*	*	5
	20-39	05-06	**.085	0.064	7
		07-08	*	*	8
	40-59	05-06	**.047**	0.007	7
		07-08	**.035**	0.003	8
	60+	05-06	**.216	0.078	5
		07-08	**.115**	0.017	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyltrichloroethane (DDT) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.632	0.352	11
		07-08	*	*	6
	20-39	05-06	**.349	0.127	9
		07-08	.129	0.029	9
	40-59	05-06	**.864	0.515	4
		07-08	**.108	0.052	6
	60+	05-06	.053	0.015	4
		07-08	**.131	0.121	5
Mexican American Female	12-19	05-06	**.117	0.068	16
		07-08	*	*	5
	20-39	05-06	**.293	0.163	9
		07-08	**.233	0.159	8
	40-59	05-06	**.239	0.107	6
		07-08	.081	0.022	6
	60+	05-06	**.138	0.05	3
		07-08	**.820	1.049	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
* Not reported: proportion of results below limit of detection was too high to provide a valid result.
**Standard error of the mean estimate is >30%.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyldichloroethene (DDE) (lipid adjusted)

Metabolite of Dichlorodiphenyltrichloroethane

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**260** (226-298)	**226** (184-278)	**537** (476-631)	**1150** (976-1350)	**1830** (1410-2300)	1964
	01-02	**295** (267-327)	**251** (228-278)	**598** (521-699)	**1410** (1210-1500)	**2320** (1830-2780)	2298
	03-04	**238** (195-292)	**203** (163-275)	**509** (376-655)	**1170** (836-1570)	**1860** (1400-2380)	1956
Age group							
12-19 years	99-00	**118** (102-135)	**108** (97.7-119)	**185** (141-237)	**339** (243-479)	**528** (339-812)	686
	01-02	**124** (106-146)	**113** (100-140)	**213** (172-253)	**319** (282-389)	**456** (343-722)	758
	03-04	**105** (84.7-129)	**93.6** (81.0-114)	**167** (123-240)	**341** (211-586)	**522** (313-1430)	588
20 years and older	99-00	**297** (256-344)	**269** (213-323)	**608** (530-693)	**1260** (1030-1550)	**2020** (1520-2730)	1278
	01-02	**338** (303-376)	**285** (249-337)	**695** (595-798)	**1480** (1310-1700)	**2550** (1980-3080)	1540
	03-04	**268** (217-332)	**233** (175-314)	**557** (420-734)	**1270** (877-1800)	**1990** (1500-2470)	1368
Gender							
Males	99-00	**249** (220-283)	**223** (182-262)	**494** (380-578)	**1010** (789-1130)	**1430** (1080-2160)	937
	01-02	**285** (252-323)	**248** (222-285)	**520** (441-627)	**1160** (937-1360)	**1900** (1580-2490)	1069
	03-04	**235** (193-288)	**200** (164-262)	**466** (331-653)	**1000** (763-1400)	**1610** (1210-2320)	955
Females	99-00	**270** (226-322)	**234** (184-302)	**601** (492-711)	**1350** (1040-1720)	**2210** (1570-2810)	1027
	01-02	**305** (273-341)	**256** (219-297)	**708** (567-844)	**1480** (1410-1710)	**2670** (1940-3300)	1229
	03-04	**241** (193-301)	**207** (161-281)	**539** (386-735)	**1250** (813-1900)	**2010** (1500-2450)	1001
Race/ethnicity							
Mexican Americans	99-00	**674** (574-792)	**624** (545-701)	**1350** (1090-1660)	**3090** (2040-4950)	**4950** (3070-9350)	657
	01-02	**652** (569-747)	**561** (455-690)	**1400** (1050-1950)	**4110** (2520-6550)	**7080** (3080-15600)	566
	03-04	**444** (362-545)	**373** (283-522)	**875** (608-1170)	**2150** (1520-2470)	**3290** (2380-9240)	457
Non-Hispanic blacks	99-00	**295** (241-362)	**251** (199-313)	**668** (492-874)	**1850** (1040-2220)	**2300** (1560-5680)	416
	01-02	**324** (262-400)	**248** (223-296)	**762** (583-999)	**1620** (1180-2980)	**3260** (1270-6900)	515
	03-04	**262** (233-295)	**216** (173-267)	**589** (453-747)	**1620** (1130-2310)	**2860** (1880-3440)	487
Non-Hispanic whites	99-00	**217** (189-249)	**194** (162-238)	**438** (355-507)	**825** (647-1010)	**1160** (1010-1350)	732
	01-02	**253** (226-284)	**225** (203-254)	**463** (402-558)	**1150** (878-1340)	**1640** (1410-1940)	1053
	03-04	**208** (165-263)	**177** (148-238)	**417** (302-564)	**907** (574-1480)	**1490** (909-2300)	888

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 18.6, 8.3, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyldichloroethene (DDE) (lipid adjusted)

Metabolite of Dichlorodiphenyltrichloroethane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**113**	20	9
		07-08	**86.7**	7.7	6
	20-39	05-06	****399**	280	12
		07-08	**113**	11	15
	40-59	05-06	**220**	19	12
		07-08	**176**	14	16
	60+	05-06	**696**	53	15
		07-08	**502**	46	23
Non-Hispanic White Female	12-19	05-06	**83.6**	6.7	10
		07-08	**70.2**	14.9	7
	20-39	05-06	**102**	7	16
		07-08	**91.8**	6.3	13
	40-59	05-06	**276**	36	13
		07-08	**179**	12	17
	60+	05-06	**736**	71	17
		07-08	**521**	46	21
Non-Hispanic Black Male	12-19	05-06	**141**	21	13
		07-08	**91.5**	8.5	6
	20-39	05-06	**236**	59	6
		07-08	**123**	12	6
	40-59	05-06	**454**	70	5
		07-08	**333**	20	6
	60+	05-06	**1910**	448	5
		07-08	**854**	88	8
Non-Hispanic Black Female	12-19	05-06	**81.8**	4.8	14
		07-08	**63.6**	8.4	5
	20-39	05-06	****237**	87	7
		07-08	**105**	10	8
	40-59	05-06	**691**	130	7
		07-08	**495**	82	8
	60+	05-06	**2110**	398	5
		07-08	**2390**	354	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 4.02 and 1.4.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyldichloroethene (DDE) (lipid adjusted)

Metabolite of Dichlorodiphenyltrichloroethane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	****2450**	1272	11
		07-08	**265**	39	6
	20-39	05-06	**1730**	472	9
		07-08	**1090**	233	9
	40-59	05-06	****2160**	845	4
		07-08	**1010**	149	6
	60+	05-06	****1180**	394	4
		07-08	**1160**	223	5
Mexican American Female	12-19	05-06	**464**	118	16
		07-08	**164**	34	5
	20-39	05-06	**895**	239	9
		07-08	****653**	301	8
	40-59	05-06	**1320**	121	6
		07-08	**1080**	133	6
	60+	05-06	**1550**	153	3
		07-08	****2960**	1477	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 4.02 and 1.4.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyldichloroethene (DDE) (whole weight)

Metabolite of Dichlorodiphenyltrichloroethane

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.54** (1.33-1.79)	**1.31** (1.09-1.66)	**3.50** (2.97-4.27)	**7.49** (6.14-9.25)	**11.6** (9.25-14.8)	1964
	01-02	**1.81** (1.64-2.01)	**1.57** (1.37-1.72)	**3.97** (3.43-4.59)	**8.81** (7.85-10.1)	**15.4** (12.9-17.6)	2298
	03-04	**1.45** (1.18-1.79)	**1.26** (1.00-1.58)	**3.16** (2.40-4.21)	**7.07** (5.55-9.80)	**12.1** (8.37-16.0)	1956
Age group							
12-19 years	99-00	**.561** (.488-.646)	**.520** (.430-.600)	**.870** (.680-1.18)	**1.52** (1.13-2.25)	**2.32** (1.76-3.56)	686
	01-02	**.623** (.534-.726)	**.590** (.500-.730)	**1.00** (.820-1.22)	**1.65** (1.39-2.07)	**2.30** (1.91-3.14)	758
	03-04	**.516** (.419-.635)	**.456** (.385-.557)	**.796** (.611-1.19)	**1.69** (.994-2.69)	**2.51** (1.56-6.71)	588
20 years and older	99-00	**1.83** (1.56-2.14)	**1.61** (1.26-2.07)	**4.17** (3.48-4.66)	**8.12** (6.37-10.6)	**12.3** (9.87-16.7)	1278
	01-02	**2.14** (1.91-2.39)	**1.77** (1.61-2.05)	**4.59** (4.10-5.26)	**9.75** (8.34-11.5)	**16.8** (13.7-19.1)	1540
	03-04	**1.69** (1.36-2.10)	**1.46** (1.12-1.96)	**3.68** (2.66-4.96)	**7.91** (6.01-11.0)	**12.8** (9.25-16.8)	1368
Gender							
Males	99-00	**1.49** (1.30-1.70)	**1.25** (1.10-1.44)	**3.02** (2.57-3.80)	**6.43** (5.40-8.00)	**9.63** (6.63-15.6)	937
	01-02	**1.77** (1.57-2.01)	**1.59** (1.36-1.76)	**3.40** (3.03-4.10)	**7.48** (6.43-8.75)	**13.1** (9.66-17.6)	1069
	03-04	**1.46** (1.18-1.80)	**1.30** (1.04-1.58)	**2.80** (2.18-4.13)	**6.71** (5.51-8.54)	**9.93** (7.51-15.4)	955
Females	99-00	**1.59** (1.32-1.92)	**1.38** (1.03-1.99)	**4.05** (3.15-4.79)	**8.18** (6.36-11.5)	**13.2** (9.81-18.5)	1027
	01-02	**1.85** (1.66-2.06)	**1.49** (1.32-1.75)	**4.57** (3.81-5.47)	**10.2** (9.01-11.9)	**16.8** (13.4-19.7)	1229
	03-04	**1.45** (1.16-1.82)	**1.25** (.965-1.66)	**3.55** (2.43-4.59)	**7.87** (5.41-12.6)	**13.7** (8.50-17.3)	1001
Race/ethnicity							
Mexican Americans	99-00	**3.92** (3.40-4.51)	**3.52** (3.17-3.91)	**8.22** (7.26-10.4)	**22.0** (12.2-32.2)	**32.2** (19.7-48.1)	657
	01-02	**3.92** (3.37-4.57)	**3.53** (2.68-4.34)	**9.34** (7.31-12.5)	**26.6** (17.9-38.3)	**40.9** (26.8-90.5)	566
	03-04	**2.69** (2.18-3.32)	**2.24** (1.70-3.24)	**5.78** (4.54-7.21)	**13.0** (9.53-15.6)	**22.9** (15.3-43.4)	457
Non-Hispanic blacks	99-00	**1.63** (1.31-2.02)	**1.37** (1.11-1.66)	**3.84** (3.01-5.69)	**11.2** (6.57-13.3)	**14.6** (8.88-35.2)	416
	01-02	**1.82** (1.46-2.28)	**1.38** (1.22-1.72)	**4.39** (3.52-6.06)	**10.6** (7.24-17.6)	**19.4** (8.51-49.3)	515
	03-04	**1.47** (1.30-1.65)	**1.20** (.963-1.51)	**3.76** (2.85-4.75)	**9.23** (7.19-14.9)	**16.8** (14.7-20.6)	487
Non-Hispanic whites	99-00	**1.32** (1.14-1.53)	**1.13** (1.01-1.35)	**2.88** (2.34-3.36)	**5.75** (4.62-6.53)	**8.04** (6.32-9.81)	732
	01-02	**1.57** (1.39-1.76)	**1.41** (1.27-1.58)	**3.11** (2.56-3.68)	**7.00** (6.02-8.34)	**11.3** (8.60-13.7)	1053
	03-04	**1.29** (1.01-1.64)	**1.12** (.890-1.49)	**2.63** (1.84-3.90)	**6.36** (3.90-8.71)	**9.71** (6.01-15.0)	888

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyldichloroethene (DDE) (whole weight)

Metabolite of Dichlorodiphenyltrichloroethane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations† (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.592**	0.071	9
		07-08	**.429**	0.031	6
	20-39	05-06	****3.23**	2.4	12
		07-08	**.745**	0.073	15
	40-59	05-06	**1.64**	0.13	12
		07-08	**1.27**	0.09	16
	60+	05-06	**4.72**	0.32	15
		07-08	**3.21**	0.29	23
Non-Hispanic White Female	12-19	05-06	**.444**	0.034	10
		07-08	**.334**	0.079	7
	20-39	05-06	**.657**	0.046	16
		07-08	**.546**	0.037	13
	40-59	05-06	**2.02**	0.27	13
		07-08	**1.18**	0.08	17
	60+	05-06	**5.38**	0.51	17
		07-08	**3.50**	0.31	21
Non-Hispanic Black Male	12-19	05-06	**.705**	0.099	13
		07-08	**.434**	0.044	6
	20-39	05-06	**1.43**	0.39	6
		07-08	**.694**	0.076	6
	40-59	05-06	**2.86**	0.39	5
		07-08	**2.14**	0.15	6
	60+	05-06	**11.4**	2.7	5
		07-08	**5.21**	0.59	8
Non-Hispanic Black Female	12-19	05-06	**.406**	0.025	14
		07-08	**.300**	0.037	5
	20-39	05-06	****1.38**	0.52	7
		07-08	**.524**	0.05	8
	40-59	05-06	**4.51**	0.94	7
		07-08	**2.97**	0.49	8
	60+	05-06	**14.0**	2.5	5
		07-08	**14.4**	2.2	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *p,p'*-Dichlorodiphenyldichloroethene (DDE) (whole weight)

Metabolite of Dichlorodiphenyltrichloroethane

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	****13.0**	6.7	11
		07-08	**1.39**	0.18	6
	20-39	05-06	**12.8**	3.7	9
		07-08	**7.50**	1.68	9
	40-59	05-06	****17.0**	6	4
		07-08	**7.34**	1.34	6
	60+	05-06	****8.69**	3.03	4
		07-08	**8.68**	2.08	5
Mexican American Female	12-19	05-06	**2.52**	0.65	16
		07-08	**.803**	0.172	5
	20-39	05-06	**5.94**	1.49	9
		07-08	****3.80**	1.71	8
	40-59	05-06	**9.64**	0.85	6
		07-08	**7.28**	0.97	6
	60+	05-06	**12.1**	2.3	3
		07-08	****20.4**	10.2	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum Hexachlorobenzene (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1702
	01-02	*	< LOD	< LOD	< LOD	< LOD	2277
	03-04	**15.2** (14.5-15.9)	**14.9** (14.2-15.7)	**19.0** (18.1-20.3)	**24.4** (22.6-26.4)	**28.9** (25.6-32.8)	1961
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	591
	01-02	*	< LOD	< LOD	< LOD	< LOD	747
	03-04	**13.3** (12.5-14.1)	**13.4** (11.5-14.9)	**16.7** (15.5-18.4)	**20.7** (19.7-22.7)	**25.3** (22.7-30.2)	588
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1111
	01-02	*	< LOD	< LOD	< LOD	< LOD	1530
	03-04	**15.5** (14.7-16.2)	**15.1** (14.5-15.9)	**19.4** (18.3-20.9)	**24.8** (22.7-26.6)	**29.0** (25.6-33.6)	1373
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	807
	01-02	*	< LOD	< LOD	< LOD	< LOD	1058
	03-04	**14.5** (13.8-15.3)	**14.2** (13.4-15.0)	**18.1** (17.0-19.3)	**23.6** (21.0-25.6)	**26.9** (25.2-31.3)	957
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	895
	01-02	*	< LOD	< LOD	< LOD	< LOD	1219
	03-04	**15.8** (15.0-16.6)	**15.7** (15.1-16.4)	**20.0** (18.7-21.4)	**24.9** (23.0-28.6)	**29.8** (26.5-33.7)	1004
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	583
	01-02	*	< LOD	< LOD	< LOD	< LOD	554
	03-04	**16.2** (14.9-17.7)	**15.3** (14.7-16.4)	**20.4** (18.3-22.5)	**27.6** (24.7-29.4)	**33.7** (27.6-44.6)	460
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	350
	01-02	*	< LOD	< LOD	< LOD	< LOD	511
	03-04	**14.5** (13.9-15.0)	**14.1** (13.7-15.1)	**18.3** (16.6-19.9)	**22.3** (20.9-24.0)	**26.6** (23.9-30.9)	488
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	636
	01-02	*	< LOD	< LOD	< LOD	< LOD	1052
	03-04	**15.1** (14.4-16.0)	**15.0** (14.2-15.9)	**19.2** (17.9-20.8)	**24.3** (22.3-26.4)	**28.2** (24.9-32.8)	888

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 118.0, 31.4, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Hexachlorobenzene_BiomonitoringSummary.html

Serum Hexachlorobenzene (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**7.62**	1.17	9
		07-08	**12.4**	0.8	6
	20-39	05-06	**7.34**	0.41	12
		07-08	**9.45**	0.46	15
	40-59	05-06	**8.85**	0.38	12
		07-08	**10.1**	0.3	16
	60+	05-06	**11.1**	0.5	15
		07-08	**11.8**	0.5	23
Non-Hispanic White Female	12-19	05-06	**5.44**	0.49	10
		07-08	**7.06**	0.29	7
	20-39	05-06	**7.11**	0.33	16
		07-08	**7.94**	0.23	13
	40-59	05-06	**9.25**	0.44	13
		07-08	**10.8**	0.7	17
	60+	05-06	**13.9**	0.7	17
		07-08	**15.1**	0.7	21
Non-Hispanic Black Male	12-19	05-06	**6.42**	0.37	13
		07-08	**9.67**	0.79	6
	20-39	05-06	**5.77**	0.38	6
		07-08	**9.11**	0.58	6
	40-59	05-06	**7.19**	0.45	5
		07-08	**9.58**	0.43	6
	60+	05-06	**10.9**	1.6	5
		07-08	**10.3**	0.6	8
Non-Hispanic Black Female	12-19	05-06	**4.41**	0.27	14
		07-08	**7.20**	0.57	5
	20-39	05-06	**5.90**	0.64	7
		07-08	**7.04**	0.3	8
	40-59	05-06	**9.19**	0.42	7
		07-08	**9.90**	0.58	8
	60+	05-06	**18.1**	1.9	5
		07-08	**15.1**	1.2	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 4.17 and 1.4.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorobenzene_BiomonitoringSummary.html

Serum Hexachlorobenzene (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**6.25**	0.43	11
		07-08	**9.49**	0.7	6
	20-39	05-06	**9.61**	1.74	9
		07-08	**9.47**	0.57	9
	40-59	05-06	**14.0**	1.9	4
		07-08	****20.6**	8.3	6
	60+	05-06	**10.5**	1.3	4
		07-08	**12.1**	0.8	5
Mexican American Female	12-19	05-06	**5.93**	0.55	16
		07-08	**6.81**	0.44	5
	20-39	05-06	**9.78**	0.81	9
		07-08	**10.4**	0.7	8
	40-59	05-06	**15.9**	1.4	6
		07-08	**20.6**	2.6	6
	60+	05-06	**19.6**	2.6	3
		07-08	**20.7**	1.9	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 4.17 and 1.4.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorobenzene_BiomonitoringSummary.html

Serum Hexachlorobenzene (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1702
	01-02	*	< LOD	< LOD	< LOD	< LOD	2277
	03-04	**.092** (.088-.097)	**.090** (.086-.095)	**.120** (.113-.126)	**.157** (.145-.167)	**.186** (.169-.212)	1961
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	591
	01-02	*	< LOD	< LOD	< LOD	< LOD	747
	03-04	**.065** (.062-.069)	**.064** (.060-.069)	**.079** (.072-.086)	**.102** (.091-.111)	**.123** (.111-.141)	588
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1111
	01-02	*	< LOD	< LOD	< LOD	< LOD	1530
	03-04	**.097** (.092-.102)	**.095** (.090-.099)	**.123** (.118-.130)	**.160** (.147-.175)	**.191** (.174-.223)	1373
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	807
	01-02	*	< LOD	< LOD	< LOD	< LOD	1058
	03-04	**.090** (.085-.095)	**.087** (.082-.094)	**.115** (.107-.122)	**.147** (.135-.163)	**.179** (.159-.203)	957
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	895
	01-02	*	< LOD	< LOD	< LOD	< LOD	1219
	03-04	**.095** (.089-.100)	**.092** (.088-.099)	**.123** (.118-.132)	**.163** (.148-.176)	**.190** (.176-.226)	1004
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	583
	01-02	*	< LOD	< LOD	< LOD	< LOD	554
	03-04	**.098** (.089-.109)	**.090** (.081-.107)	**.125** (.114-.152)	**.171** (.157-.203)	**.225** (.178-.258)	460
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	350
	01-02	*	< LOD	< LOD	< LOD	< LOD	511
	03-04	**.081** (.077-.085)	**.078** (.073-.083)	**.104** (.095-.118)	**.140** (.127-.155)	**.167** (.145-.196)	488
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	636
	01-02	*	< LOD	< LOD	< LOD	< LOD	1052
	03-04	**.094** (.088-.099)	**.092** (.086-.097)	**.121** (.114-.129)	**.156** (.143-.173)	**.182** (.163-.218)	888

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Hexachlorobenzene_BiomonitoringSummary.html

Serum Hexachlorobenzene (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.043**	0.008	9
		07-08	**.062**	0.003	6
	20-39	05-06	**.054**	0.004	12
		07-08	**.062**	0.003	15
	40-59	05-06	**.067**	0.003	12
		07-08	**.074**	0.003	16
	60+	05-06	**.076**	0.002	15
		07-08	**.075**	0.003	23
Non-Hispanic White Female	12-19	05-06	**.029**	0.003	10
		07-08	**.033**	0.001	7
	20-39	05-06	**.046**	0.002	16
		07-08	**.047**	0.002	13
	40-59	05-06	**.069**	0.005	13
		07-08	**.071**	0.005	17
	60+	05-06	**.102**	0.005	17
		07-08	**.102**	0.004	21
Non-Hispanic Black Male	12-19	05-06	**.032**	0.001	13
		07-08	**.046**	0.004	6
	20-39	05-06	**.034**	0.003	6
		07-08	**.051**	0.003	6
	40-59	05-06	**.046**	0.003	5
		07-08	**.061**	0.003	6
	60+	05-06	**.064**	0.008	5
		07-08	**.062**	0.003	8
Non-Hispanic Black Female	12-19	05-06	**.022**	0.001	14
		07-08	**.034**	0.003	5
	20-39	05-06	**.034**	0.004	7
		07-08	**.035**	0.001	8
	40-59	05-06	**.059**	0.003	7
		07-08	**.059**	0.004	8
	60+	05-06	**.121**	0.012	5
		07-08	**.090**	0.006	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorobenzene_BiomonitoringSummary.html

Serum Hexachlorobenzene (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.034**	0.002	11
		07-08	**.050**	0.003	6
	20-39	05-06	**.066**	0.01	9
		07-08	**.065**	0.006	9
	40-59	05-06	**.113**	0.011	4
		07-08	*****	*	6
	60+	05-06	**.076**	0.011	4
		07-08	**.089**	0.011	5
Mexican American Female	12-19	05-06	**.032**	0.003	16
		07-08	**.033**	0.002	5
	20-39	05-06	**.066**	0.008	9
		07-08	**.060**	0.004	8
	40-59	05-06	**.117**	0.01	6
		07-08	**.138**	0.016	6
	60+	05-06	**.148**	0.02	3
		07-08	**.141**	0.013	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorobenzene_BiomonitoringSummary.html

Serum *beta*-Hexachlorocyclohexane (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**9.68** (<LOD-10.9)	**< LOD**	**19.1** (16.0-21.6)	**42.0** (33.4-50.6)	**68.9** (50.6-89.5)	1893
	01-02	*	**< LOD**	**16.0** (14.2-17.3)	**36.7** (30.4-45.7)	**67.2** (50.3-85.7)	2291
	03-04	*	**< LOD**	**14.1** (12.1-16.5)	**32.1** (27.1-37.8)	**56.5** (43.7-69.4)	1959
Age group							
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**11.7** (<LOD-16.1)	653
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**13.1** (9.70-19.0)	758
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**8.80** (<LOD-14.7)	589
20 years and older	99-00	**10.9** (9.61-12.4)	**< LOD**	**21.1** (18.9-24.0)	**46.0** (35.9-56.8)	**73.4** (52.7-96.0)	1240
	01-02	**9.87** (9.04-10.8)	**7.80** (6.90-8.90)	**17.4** (16.0-20.5)	**39.6** (33.2-52.0)	**71.7** (53.7-96.2)	1533
	03-04	**7.89** (<LOD-9.09)	**< LOD**	**16.3** (13.6-18.4)	**35.2** (29.6-42.5)	**62.2** (48.2-87.6)	1370
Gender							
Males	99-00	*	**< LOD**	**14.6** (10.8-19.1)	**29.8** (23.3-38.7)	**44.9** (32.8-68.9)	901
	01-02	*	**< LOD**	**12.9** (11.1-15.7)	**27.5** (24.0-34.4)	**45.7** (35.2-55.6)	1067
	03-04	*	**< LOD**	**10.4** (8.70-12.5)	**21.6** (17.7-26.4)	**35.3** (26.1-49.9)	952
Females	99-00	**11.1** (9.56-12.8)	**< LOD**	**22.0** (19.1-27.6)	**51.3** (42.2-67.6)	**81.8** (64.4-111)	992
	01-02	**10.2** (9.46-11.0)	**7.70** (6.90-8.50)	**18.5** (16.2-22.7)	**47.5** (37.6-62.0)	**84.7** (62.0-111)	1224
	03-04	**8.43** (<LOD-9.45)	**< LOD**	**18.6** (16.9-21.5)	**41.8** (33.9-51.4)	**70.3** (62.2-98.4)	1007
Race/ethnicity							
Mexican Americans	99-00	**16.7** (13.7-20.2)	**15.5** (11.6-20.4)	**37.7** (29.6-47.3)	**97.9** (62.6-135)	**142** (99.8-199)	632
	01-02	**13.1** (11.6-14.7)	**11.8** (9.60-13.4)	**25.8** (21.1-32.7)	**69.4** (50.8-87.6)	**134** (85.7-166)	563
	03-04	**10.5** (8.66-12.8)	**10.0** (<LOD-12.7)	**23.8** (17.5-29.9)	**50.1** (30.0-70.3)	**70.3** (42.5-123)	460
Non-Hispanic blacks	99-00	*	**< LOD**	**15.4** (12.0-23.1)	**37.9** (30.2-42.2)	**49.9** (40.9-81.1)	403
	01-02	*	**< LOD**	**12.0** (8.20-16.2)	**36.2** (18.4-73.4)	**71.2** (31.9-178)	513
	03-04	*	**< LOD**	**9.70** (8.30-11.9)	**27.1** (21.1-36.3)	**48.2** (34.8-54.3)	487
Non-Hispanic whites	99-00	*	**< LOD**	**17.5** (14.2-20.5)	**34.7** (25.2-46.1)	**51.6** (40.0-70.8)	702
	01-02	*	**< LOD**	**14.4** (11.8-16.8)	**31.9** (26.6-37.8)	**52.0** (37.7-69.5)	1051
	03-04	*	**< LOD**	**12.8** (10.9-14.7)	**27.6** (22.1-32.2)	**40.8** (32.3-56.5)	887

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 9.36, 6.76, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *beta*-Hexachlorocyclohexane (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**3.53	1.51	12
		07-08	*	*	15
	40-59	05-06	**4.44**	0.23	12
		07-08	**3.34**	0.35	16
	60+	05-06	**14.3**	2.1	15
		07-08	**11.3**	2.6	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**2.79**	0.55	16
		07-08	*	*	13
	40-59	05-06	**7.32**	0.81	13
		07-08	**3.90**	1	17
	60+	05-06	**19.6**	1.3	17
		07-08	**17.3**	1.7	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**2.00**	0.39	6
		07-08	*	*	6
	40-59	05-06	**5.64**	1.62	5
		07-08	**3.62**	0.43	6
	60+	05-06	**15.0**	3.5	5
		07-08	**7.79**	1.2	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**3.89	1.98	7
		07-08	*	*	8
	40-59	05-06	**9.50**	1.59	7
		07-08	**6.79**	1.13	8
	60+	05-06	**56.1**	12.3	5
		07-08	**34.4**	5.5	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *beta*-Hexachlorocyclohexane (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**10.7**	2.2	9
		07-08	**5.59**	1.57	9
	40-59	05-06	**23.7	8.6	4
		07-08	**16.6**	5	6
	60+	05-06	**20.5**	1.6	4
		07-08	**21.9**	5.7	5
Mexican American Female	12-19	05-06	**3.50**	0.67	16
		07-08	*	*	5
	20-39	05-06	**12.0**	2.2	9
		07-08	**5.65**	1.61	8
	40-59	05-06	**25.3**	3.5	6
		07-08	**16.8**	2.1	6
	60+	05-06	**36.8**	5.5	3
		07-08	**50.2**	8.6	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *beta*-Hexachlorocyclohexane (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.058** (<LOD-.066)	**< LOD**	**.120** (.100-.150)	**.290** (.220-.360)	**.450** (.360-.560)	1893
	01-02	*	**< LOD**	**.100** (.090-.120)	**.250** (.210-.310)	**.460** (.340-.600)	2291
	03-04	*	**< LOD**	**.092** (.081-.103)	**.216** (.173-.254)	**.372** (.294-.442)	1959
Age group							
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.050** (<LOD-.070)	653
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.080** (.050-.100)	758
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.048** (<LOD-.064)	589
20 years and older	99-00	**.067** (.059-.077)	**< LOD**	**.140** (.120-.160)	**.330** (.240-.410)	**.480** (.410-.620)	1240
	01-02	**.062** (.057-.069)	**.050** (.050-.060)	**.120** (.100-.140)	**.270** (.230-.350)	**.480** (.370-.690)	1533
	03-04	**.050** (<LOD-.058)	**< LOD**	**.103** (.089-.125)	**.234** (.191-.290)	**.412** (.308-.587)	1370
Gender							
Males	99-00	*	**< LOD**	**.090** (.080-.120)	**.210** (.160-.250)	**.290** (.220-.470)	901
	01-02	*	**< LOD**	**.080** (.070-.100)	**.200** (.150-.260)	**.310** (.250-.400)	1067
	03-04	*	**< LOD**	**.072** (.056-.089)	**.144** (.118-.174)	**.222** (.170-.305)	952
Females	99-00	**.065** (.056-.077)	**< LOD**	**.150** (.120-.190)	**.380** (.300-.450)	**.560** (.420-.680)	992
	01-02	**.062** (.057-.067)	**.050** (.040-.050)	**.130** (.110-.150)	**.320** (.260-.400)	**.570** (.450-.710)	1224
	03-04	**.051** (<LOD-.057)	**< LOD**	**.118** (.103-.130)	**.290** (.244-.319)	**.442** (.382-.661)	1007
Race/ethnicity							
Mexican Americans	99-00	**.098** (.080-.119)	**.090** (.070-.110)	**.240** (.200-.310)	**.580** (.390-.840)	**.910** (.580-1.37)	632
	01-02	**.078** (.068-.091)	**.070** (.050-.080)	**.160** (.130-.210)	**.470** (.330-.700)	**1.01** (.620-1.32)	563
	03-04	**.064** (.051-.080)	**.057** (<LOD-.086)	**.139** (.124-.190)	**.331** (.191-.501)	**.521** (.297-.814)	460
Non-Hispanic blacks	99-00	*	**< LOD**	**.100** (.070-.140)	**.250** (.190-.290)	**.360** (.280-.460)	403
	01-02	*	**< LOD**	**.070** (.050-.110)	**.220** (.120-.410)	**.410** (.190-1.05)	513
	03-04	*	**< LOD**	**.065** (.047-.083)	**.167** (.131-.214)	**.281** (.200-.404)	487
Non-Hispanic whites	99-00	*	**< LOD**	**.120** (.100-.140)	**.250** (.170-.340)	**.390** (.280-.510)	702
	01-02	*	**< LOD**	**.090** (.080-.110)	**.210** (.180-.260)	**.350** (.250-.480)	1051
	03-04	*	**< LOD**	**.083** (.073-.096)	**.175** (.146-.220)	**.287** (.221-.372)	887

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *beta*-Hexachlorocyclohexane (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	**.033**	0.002	12
		07-08	**.025**	0.003	16
	60+	05-06	**.095**	0.012	15
		07-08	**.071**	0.015	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**.018**	0.004	16
		07-08	*	*	13
	40-59	05-06	**.055**	0.007	13
		07-08	**.026**	0.007	17
	60+	05-06	**.142**	0.008	17
		07-08	**.117**	0.012	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.012**	0.002	6
		07-08	*	*	6
	40-59	05-06	**.036**	0.011	5
		07-08	**.023**	0.003	6
	60+	05-06	**.087**	0.018	5
		07-08	**.047**	0.007	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	**.062**	0.011	7
		07-08	**.041**	0.007	8
	60+	05-06	**.369**	0.07	5
		07-08	**.204**	0.029	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *beta*-Hexachlorocyclohexane (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.075**	0.015	9
		07-08	**.041**	0.013	9
	40-59	05-06	*	*	4
		07-08	**.120**	0.038	6
	60+	05-06	**.150**	0.02	4
		07-08	**.171**	0.058	5
Mexican American Female	12-19	05-06	**.019**	0.003	16
		07-08	*	*	5
	20-39	05-06	**.082**	0.016	9
		07-08	**.033**	0.009	8
	40-59	05-06	**.186**	0.025	6
		07-08	**.114**	0.015	6
	60+	05-06	**.275**	0.037	3
		07-08	**.344**	0.06	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *gamma*-Hexachlorocyclohexane (Lindane) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1799
	01-02	*	< LOD	< LOD	< LOD	< LOD	2280
	03-04	*	< LOD	< LOD	< LOD	< LOD	1960
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	660
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	< LOD	< LOD	< LOD	593
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1139
	01-02	*	< LOD	< LOD	< LOD	< LOD	1522
	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	863
	01-02	*	< LOD	< LOD	< LOD	< LOD	1060
	03-04	*	< LOD	< LOD	< LOD	< LOD	952
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	936
	01-02	*	< LOD	< LOD	< LOD	< LOD	1220
	03-04	*	< LOD	< LOD	< LOD	< LOD	1008
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	631
	01-02	*	< LOD	< LOD	< LOD	< LOD	563
	03-04	*	< LOD	< LOD	< LOD	< LOD	461
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	380
	01-02	*	< LOD	< LOD	< LOD	< LOD	509
	03-04	*	< LOD	< LOD	< LOD	< LOD	490
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	646
	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	884

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 14.5, 10.5, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *gamma*-Hexachlorocyclohexane (Lindane) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *gamma*-Hexachlorocyclohexane (Lindane) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *gamma*-Hexachlorocyclohexane (Lindane) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1799
	01-02	*	< LOD	< LOD	< LOD	< LOD	2280
	03-04	*	< LOD	< LOD	< LOD	< LOD	1960
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	660
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	< LOD	< LOD	< LOD	593
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1139
	01-02	*	< LOD	< LOD	< LOD	< LOD	1522
	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	863
	01-02	*	< LOD	< LOD	< LOD	< LOD	1060
	03-04	*	< LOD	< LOD	< LOD	< LOD	952
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	936
	01-02	*	< LOD	< LOD	< LOD	< LOD	1220
	03-04	*	< LOD	< LOD	< LOD	< LOD	1008
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	631
	01-02	*	< LOD	< LOD	< LOD	< LOD	563
	03-04	*	< LOD	< LOD	< LOD	< LOD	461
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	380
	01-02	*	< LOD	< LOD	< LOD	< LOD	509
	03-04	*	< LOD	< LOD	< LOD	< LOD	490
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	646
	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	884

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *gamma*-Hexachlorocyclohexane (Lindane) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum *gamma*-Hexachlorocyclohexane (Lindane) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/Hexachlorocyclohexane_BiomonitoringSummary.html

Serum Mirex (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1853
	01-02	*	< LOD	< LOD	**15.8** (<LOD-73.7)	**57.1** (13.2-230)	2257
	03-04	*	< LOD	< LOD	**8.40** (<LOD-13.0)	**13.2** (7.90-29.6)	1951
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	659
	01-02	*	< LOD	< LOD	< LOD	< LOD	728
	03-04	*	< LOD	< LOD	< LOD	< LOD	592
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1194
	01-02	*	< LOD	< LOD	**19.6** (<LOD-108)	**71.0** (14.6-305)	1529
	03-04	*	< LOD	< LOD	**9.10** (<LOD-15.6)	**15.4** (8.10-37.1)	1359
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	887
	01-02	*	< LOD	< LOD	**16.1** (<LOD-65.6)	**50.8** (12.3-225)	1052
	03-04	*	< LOD	< LOD	**9.70** (<LOD-15.4)	**15.5** (9.70-24.4)	949
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	966
	01-02	*	< LOD	< LOD	**15.0** (<LOD-108)	**63.0** (12.0-374)	1205
	03-04	*	< LOD	< LOD	< LOD	**11.6** (<LOD-31.3)	1002
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	617
	01-02	*	< LOD	< LOD	< LOD	< LOD	548
	03-04	*	< LOD	< LOD	< LOD	< LOD	459
Non-Hispanic blacks	99-00	*	< LOD	< LOD	**15.5** (<LOD-42.2)	**39.5** (<LOD-115)	398
	01-02	*	< LOD	**13.7** (<LOD-47.3)	**51.3** (15.4-230)	**153** (30.5-425)	500
	03-04	*	< LOD	< LOD	**18.1** (8.70-40.8)	**40.3** (15.5-82.7)	484
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	688
	01-02	*	< LOD	< LOD	**15.1** (<LOD-104)	**66.7** (12.5-291)	1049
	03-04	*	< LOD	< LOD	< LOD	**11.6** (<LOD-23.4)	884

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 14.6, 10.5, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mirex_BiomonitoringSummary.html

Serum Mirex (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**3.88	2.18	12
		07-08	*	*	15
	40-59	05-06	**6.39	2.15	12
		07-08	4.25	0.31	16
	60+	05-06	5.32	0.61	15
		07-08	6.36	1.34	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	2.42	0.14	13
		07-08	2.05	0.28	17
	60+	05-06	3.51	0.24	17
		07-08	3.90	0.39	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	2.68	0.59	6
		07-08	*	*	6
	40-59	05-06	5.90	0.49	5
		07-08	**16.8	6.1	6
	60+	05-06	**27.2	10.1	5
		07-08	13.9	2.1	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	1.62	0.32	7
		07-08	*	*	8
	40-59	05-06	5.92	0.65	7
		07-08	5.42	1.21	8
	60+	05-06	10.3	2.7	5
		07-08	**24.0	9.3	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mirex_BiomonitoringSummary.html

Serum Mirex (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**2.66**	0.74	4
		07-08	****4.37**	1.38	6
	60+	05-06	**2.89**	0.78	4
		07-08	****11.0**	8	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**1.84**	0.34	6
		07-08	****3.76**	1.3	6
	60+	05-06	**2.84**	0.37	3
		07-08	**2.59**	0.49	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.46 and 1.4.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mirex_BiomonitoringSummary.html

Serum Mirex (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1853
	01-02	*	< LOD	< LOD	.100 (<LOD-.470)	.410 (.080-1.73)	2257
	03-04	*	< LOD	< LOD	.054 (<LOD-.084)	.093 (.052-.170)	1951
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	659
	01-02	*	< LOD	< LOD	< LOD	< LOD	728
	03-04	*	< LOD	< LOD	< LOD	< LOD	592
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1194
	01-02	*	< LOD	< LOD	.140 (<LOD-.690)	.470 (.090-1.92)	1529
	03-04	*	< LOD	< LOD	.059 (<LOD-.102)	.106 (.053-.215)	1359
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	887
	01-02	*	< LOD	< LOD	.110 (<LOD-.470)	.370 (.090-1.37)	1052
	03-04	*	< LOD	< LOD	.064 (<LOD-.106)	.108 (.062-.170)	949
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	966
	01-02	*	< LOD	< LOD	.090 (<LOD-.510)	.430 (.070-1.79)	1205
	03-04	*	< LOD	< LOD	< LOD	.077 (<LOD-.170)	1002
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	617
	01-02	*	< LOD	< LOD	< LOD	< LOD	548
	03-04	*	< LOD	< LOD	< LOD	< LOD	459
Non-Hispanic blacks	99-00	*	< LOD	< LOD	.090 (<LOD-.220)	.220 (<LOD-.450)	398
	01-02	*	< LOD	.090 (<LOD-.240)	.310 (.090-1.41)	1.08 (.170-3.02)	500
	03-04	*	< LOD	< LOD	.112 (.055-.268)	.256 (.089-.635)	484
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	688
	01-02	*	< LOD	< LOD	.100 (<LOD-.610)	.450 (.080-1.79)	1049
	03-04	*	< LOD	< LOD	< LOD	.079 (<LOD-.174)	884

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mirex_BiomonitoringSummary.html

Serum Mirex (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	**.031**	0.003	16
	60+	05-06	**.036**	0.004	15
		07-08	**.040**	0.008	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	**.018**	0.002	13
		07-08	**.014**	0.002	17
	60+	05-06	**.026**	0.002	17
		07-08	**.026**	0.003	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.016**	0.004	6
		07-08	*	*	6
	40-59	05-06	**.038**	0.003	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	**.084**	0.012	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.009**	0.002	7
		07-08	*	*	8
	40-59	05-06	**.038**	0.004	7
		07-08	**.032**	0.008	8
	60+	05-06	**.067**	0.016	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mirex_BiomonitoringSummary.html

Serum Mirex (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**.022**	0.007	4
		07-08	*	*	6
	60+	05-06	**.022**	0.008	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.014**	0.003	6
		07-08	*	*	6
	60+	05-06	**.022**	0.005	3
		07-08	**.018**	0.003	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mirex_BiomonitoringSummary.html

Serum 2,2',4-Tribromodiphenyl ether (BDE 17) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1992
Age group							
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	607
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1385
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	964
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1028
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	482
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	491
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	892

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 1.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4-Tribromodiphenyl ether (BDE 17) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4-Tribromodiphenyl ether (BDE 17) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,4,4'-Tribromodiphenyl ether (BDE 28) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.19** (1.03-1.37)	**1.10** (1.00-1.30)	**2.20** (1.90-2.60)	**4.80** (3.30-6.70)	**8.00** (5.40-11.3)	1987
Age group							
12-19 years	03-04	**1.30** (1.15-1.46)	**1.20** (1.10-1.50)	**2.40** (2.00-2.60)	**4.00** (2.90-5.60)	**6.10** (4.00-9.40)	598
20 years and older	03-04	**1.17** (1.01-1.37)	**1.10** (.900-1.30)	**2.20** (1.90-2.70)	**5.00** (3.30-7.20)	**8.20** (6.00-10.9)	1389
Gender							
Males	03-04	**1.21** (1.05-1.39)	**1.10** (1.00-1.30)	**2.30** (2.00-2.70)	**5.10** (3.50-7.30)	**8.20** (6.00-11.3)	964
Females	03-04	**1.17** (.990-1.38)	**1.10** (.900-1.40)	**2.10** (1.80-2.60)	**4.60** (3.00-6.90)	**7.80** (4.70-11.8)	1023
Race/ethnicity							
Mexican Americans	03-04	**1.43** (1.29-1.59)	**1.40** (1.20-1.50)	**2.40** (2.00-2.90)	**4.70** (3.70-5.50)	**7.30** (5.60-8.30)	488
Non-Hispanic blacks	03-04	**1.21** (1.03-1.42)	**1.10** (.900-1.30)	**2.20** (1.80-2.50)	**5.30** (3.50-6.70)	**8.40** (5.40-12.3)	470
Non-Hispanic whites	03-04	**1.17** (.968-1.42)	**1.10** (.900-1.30)	**2.20** (1.80-2.70)	**4.90** (3.00-8.00)	**8.00** (4.50-13.6)	905

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 0.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,4,4'-Tribromodiphenyl ether (BDE 28) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**1.82**	0.44	9
		07-08	**1.38**	0.19	6
	20-39	05-06	**2.16**	0.45	12
		07-08	**1.37**	0.16	15
	40-59	05-06	**1.23**	0.12	12
		07-08	**1.97**	0.43	16
	60+	05-06	**3.07**	0.34	15
		07-08	**2.39**	0.29	23
Non-Hispanic White Female	12-19	05-06	**2.37**	0.49	10
		07-08	**1.31**	0.12	7
	20-39	05-06	**1.70**	0.32	16
		07-08	**1.67**	0.23	13
	40-59	05-06	**1.44**	0.2	13
		07-08	**1.37**	0.15	17
	60+	05-06	**2.59**	0.55	17
		07-08	**2.51**	0.38	21
Non-Hispanic Black Male	12-19	05-06	**1.79**	0.2	13
		07-08	**1.21**	0.1	6
	20-39	05-06	**1.38**	0.19	6
		07-08	**1.25**	0.14	6
	40-59	05-06	**1.47**	0.35	5
		07-08	**1.33**	0.17	6
	60+	05-06	**1.91**	0.5	5
		07-08	**1.94**	0.3	8
Non-Hispanic Black Female	12-19	05-06	**2.29**	0.39	14
		07-08	****1.66**	0.56	5
	20-39	05-06	**1.93**	0.37	7
		07-08	**1.61**	0.21	8
	40-59	05-06	****2.07**	0.77	7
		07-08	**1.29**	0.11	8
	60+	05-06	****1.76**	0.56	5
		07-08	**2.33**	0.61	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,4,4'-Tribromodiphenyl ether (BDE 28) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**2.04**	0.21	11
		07-08	**2.06**	0.38	6
	20-39	05-06	**1.99**	0.21	9
		07-08	**1.52**	0.21	9
	40-59	05-06	**2.06**	0.13	4
		07-08	**2.15**	0.28	6
	60+	05-06	**2.38**	0.14	4
		07-08	**2.87**	0.84	5
Mexican American Female	12-19	05-06	**2.08**	0.19	16
		07-08	**1.49**	0.24	5
	20-39	05-06	**1.51**	0.14	9
		07-08	**1.84**	0.42	8
	40-59	05-06	**1.57**	0.29	6
		07-08	**1.81**	0.31	6
	60+	05-06	**3.29**	0.62	3
		07-08	**2.34**	0.33	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4'-Tetrabromodiphenyl ether (BDE 47) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**20.5** (17.6-23.9)	**19.2** (15.7-22.3)	**41.1** (35.6-49.2)	**85.1** (66.8-127)	**163** (108-240)	2016
Age group							
12-19 years	03-04	**28.2** (24.6-32.3)	**27.2** (22.1-33.6)	**53.6** (44.9-63.6)	**104** (82.4-145)	**174** (115-211)	615
20 years and older	03-04	**19.5** (16.5-23.1)	**18.0** (14.6-21.6)	**39.1** (32.8-47.0)	**83.3** (63.0-127)	**163** (102-240)	1401
Gender							
Males	03-04	**21.4** (18.1-25.3)	**19.2** (15.8-24.0)	**45.2** (37.3-54.9)	**94.3** (66.8-148)	**168** (112-382)	981
Females	03-04	**19.6** (16.4-23.5)	**19.1** (14.1-23.2)	**38.4** (31.8-46.4)	**79.5** (60.7-121)	**155** (102-239)	1035
Race/ethnicity							
Mexican Americans	03-04	**25.5** (23.0-28.1)	**23.6** (21.2-25.5)	**47.1** (38.2-56.5)	**87.2** (72.0-105)	**151** (105-195)	478
Non-Hispanic blacks	03-04	**24.3** (20.9-28.2)	**21.4** (18.2-25.6)	**47.5** (40.7-53.2)	**116** (81.8-149)	**242** (136-481)	499
Non-Hispanic whites	03-04	**19.5** (16.1-23.7)	**17.4** (14.4-22.2)	**40.2** (33.1-51.9)	**85.1** (60.3-142)	**163** (90.2-283)	912

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 4.2.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4'-Tetrabromodiphenyl ether (BDE 47) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**59.0**	16.8	9
		07-08	**32.9**	4.8	6
	20-39	05-06	****46.1**	14.4	12
		07-08	**29.1**	4.2	15
	40-59	05-06	**21.2**	2.6	12
		07-08	**38.7**	9.7	16
	60+	05-06	**67.3**	12.4	15
		07-08	**40.1**	6.5	23
Non-Hispanic White Female	12-19	05-06	**62.5**	14.4	10
		07-08	**31.2**	3.2	7
	20-39	05-06	****50.0**	16.4	16
		07-08	**32.2**	6.6	13
	40-59	05-06	**22.5**	4.6	13
		07-08	**20.5**	3.1	17
	60+	05-06	****60.0**	20.4	17
		07-08	**40.4**	7.5	21
Non-Hispanic Black Male	12-19	05-06	**51.3**	4.9	13
		07-08	**31.0**	4.9	6
	20-39	05-06	**42.8**	8.7	6
		07-08	**28.1**	3.3	6
	40-59	05-06	**29.6**	6.9	5
		07-08	**30.5**	5.3	6
	60+	05-06	**65.8**	18.9	5
		07-08	**31.8**	4.1	8
Non-Hispanic Black Female	12-19	05-06	**74.9**	13.9	14
		07-08	****56.4**	23.5	5
	20-39	05-06	****61.0**	21.6	7
		07-08	**32.2**	4.1	8
	40-59	05-06	****59.0**	26.9	7
		07-08	**20.9**	2.4	8
	60+	05-06	**41.4**	8.5	5
		07-08	**46.4**	12.5	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.6 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4'-Tetrabromodiphenyl ether (BDE 47) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**46.8**	5	11
		07-08	**53.1**	9.7	6
	20-39	05-06	**41.2**	4.2	9
		07-08	**33.9**	6	9
	40-59	05-06	**36.4**	3.7	4
		07-08	**37.4**	8.6	6
	60+	05-06	**36.8**	2.9	4
		07-08	**41.5**	6.6	5
Mexican American Female	12-19	05-06	**50.7**	5.4	16
		07-08	**34.2**	6	5
	20-39	05-06	**30.4**	3.6	9
		07-08	**31.2**	8.1	8
	40-59	05-06	**25.4**	4	6
		07-08	**23.0**	3	6
	60+	05-06	**52.9**	12.1	3
		07-08	**37.8**	6.9	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.6 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,3',4,4'-Tetrabromodiphenyl ether (BDE 66) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**< LOD**	**< LOD**	**1.30** (1.00-2.10)	1999
Age group							
12-19 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**1.30** (<LOD-1.90)	606
20 years and older	03-04	*	**< LOD**	**< LOD**	**< LOD**	**1.30** (1.00-2.20)	1393
Gender							
Males	03-04	*	**< LOD**	**< LOD**	**< LOD**	**1.40** (1.00-2.60)	970
Females	03-04	*	**< LOD**	**< LOD**	**< LOD**	**1.10** (<LOD-2.20)	1029
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**< LOD**	**1.20** (<LOD-1.60)	461
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**1.00** (<LOD-2.00)	**2.40** (1.40-5.10)	496
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**< LOD**	**1.20** (<LOD-2.50)	914

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 1.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,3',4,4'-Tetrabromodiphenyl ether (BDE 66) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,3',4,4'-Tetrabromodiphenyl ether (BDE 66) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',3,4,4'-Pentabromodiphenyl ether (BDE 85) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**< LOD**	**< LOD**	**4.10** (2.80-6.30)	2000
Age group							
12-19 years	03-04	*	**< LOD**	**< LOD**	**2.80** (<LOD-3.50)	**4.00** (3.50-6.30)	610
20 years and older	03-04	*	**< LOD**	**< LOD**	**< LOD**	**4.10** (2.50-6.70)	1390
Gender							
Males	03-04	*	**< LOD**	**< LOD**	**2.40** (<LOD-3.30)	**4.80** (3.10-8.40)	967
Females	03-04	*	**< LOD**	**< LOD**	**< LOD**	**3.60** (<LOD-5.20)	1033
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**< LOD**	**3.70** (2.80-4.80)	484
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**3.50** (2.50-4.40)	**6.90** (3.10-18.0)	493
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**< LOD**	**3.90** (<LOD-7.50)	895

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 2.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',3,4,4'-Pentabromodiphenyl ether (BDE 85) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	****1.56**	0.49	9
		07-08	**.648**	0.088	6
	20-39	05-06	****.960**	0.337	12
		07-08	**.618**	0.09	15
	40-59	05-06	*	*	12
		07-08	**1.06**	0.29	16
	60+	05-06	**1.58**	0.32	15
		07-08	**.971**	0.197	23
Non-Hispanic White Female	12-19	05-06	**1.50**	0.41	10
		07-08	**.807**	0.166	7
	20-39	05-06	****1.26**	0.43	16
		07-08	**.804**	0.207	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	****1.70**	0.77	17
		07-08	**.802**	0.172	21
Non-Hispanic Black Male	12-19	05-06	**1.14**	0.11	13
		07-08	**.763**	0.149	6
	20-39	05-06	**1.08**	0.2	6
		07-08	**.727**	0.104	6
	40-59	05-06	*	*	5
		07-08	**.829**	0.141	6
	60+	05-06	****1.55**	0.6	5
		07-08	**.848**	0.199	8
Non-Hispanic Black Female	12-19	05-06	**1.88**	0.41	14
		07-08	****1.61**	0.74	5
	20-39	05-06	****1.58**	0.69	7
		07-08	**.905**	0.109	8
	40-59	05-06	****1.51**	0.8	7
		07-08	*	*	8
	60+	05-06	**1.11**	0.32	5
		07-08	**1.16**	0.33	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',3,4,4'-Pentabromodiphenyl ether (BDE 85) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.899**	0.078	11
		07-08	**1.04**	0.3	6
	20-39	05-06	**.825**	0.081	9
		07-08	**.790**	0.125	9
	40-59	05-06	**.900**	0.144	4
		07-08	**.804**	0.214	6
	60+	05-06	**.683**	0.167	4
		07-08	**.967**	0.239	5
Mexican American Female	12-19	05-06	**1.00**	0.1	16
		07-08	**.766**	0.147	5
	20-39	05-06	**.662**	0.098	9
		07-08	****.789**	0.256	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	**1.10**	0.33	3
		07-08	**1.00**	0.25	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5-Pentabromodiphenyl ether (BDE 99) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**9.20** (7.50-11.1)	**21.7** (17.0-29.1)	**42.2** (33.3-54.8)	1985
Age group							
12-19 years	03-04	**6.88** (6.14-7.72)	**5.70** (<LOD-7.70)	**12.9** (11.4-15.7)	**27.9** (19.6-37.9)	**45.2** (35.9-56.8)	602
20 years and older	03-04	*	**< LOD**	**8.50** (7.10-10.5)	**20.6** (15.5-28.8)	**41.6** (30.8-57.3)	1383
Gender							
Males	03-04	**5.28** (<LOD-6.14)	**< LOD**	**10.0** (8.40-11.6)	**24.5** (18.0-37.3)	**45.5** (33.8-57.3)	964
Females	03-04	*	**< LOD**	**8.70** (6.60-10.6)	**18.3** (14.7-28.8)	**41.2** (22.9-60.3)	1021
Race/ethnicity							
Mexican Americans	03-04	**5.90** (5.45-6.39)	**5.50** (<LOD-5.80)	**10.8** (9.30-12.6)	**20.0** (17.0-23.5)	**30.8** (24.5-41.7)	478
Non-Hispanic blacks	03-04	**6.22** (5.42-7.12)	**5.00** (<LOD-5.70)	**11.5** (9.60-13.1)	**30.2** (21.5-42.2)	**74.7** (30.2-155)	479
Non-Hispanic whites	03-04	*	**< LOD**	**8.90** (6.80-11.3)	**21.7** (15.3-34.0)	**43.6** (30.7-71.4)	903

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 5.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5-Pentabromodiphenyl ether (BDE 99) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	****14.6**	4.7	9
		07-08	**6.80**	1.22	6
	20-39	05-06	****10.3**	3.6	12
		07-08	**5.38**	0.78	15
	40-59	05-06	**4.45**	0.74	12
		07-08	****9.95**	3.12	16
	60+	05-06	**15.4**	4.3	15
		07-08	**9.80**	2.13	23
Non-Hispanic White Female	12-19	05-06	**17.5**	4.8	10
		07-08	**8.10**	2.09	7
	20-39	05-06	****13.4**	5	16
		07-08	**7.72**	2.02	13
	40-59	05-06	**4.16**	0.79	13
		07-08	**4.40**	0.82	17
	60+	05-06	****12.3**	4.4	17
		07-08	**8.00**	1.79	21
Non-Hispanic Black Male	12-19	05-06	**12.6**	1.4	13
		07-08	**7.39**	1.79	6
	20-39	05-06	****16.5**	6.2	6
		07-08	**6.25**	0.82	6
	40-59	05-06	**5.66**	1.1	5
		07-08	**7.22**	1.5	6
	60+	05-06	****19.5**	10.2	5
		07-08	**8.27**	1.74	8
Non-Hispanic Black Female	12-19	05-06	**23.3**	4.8	14
		07-08	****17.6**	8.3	5
	20-39	05-06	****17.5**	7.8	7
		07-08	**7.19**	1.14	8
	40-59	05-06	****16.1**	8.9	7
		07-08	**4.30**	0.6	8
	60+	05-06	**11.2**	3.1	5
		07-08	****11.3**	4	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.2 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5-Pentabromodiphenyl ether (BDE 99) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**9.27**	0.91	11
		07-08	**10.7**	2.5	6
	20-39	05-06	**8.47**	1	9
		07-08	**7.77**	1.66	9
	40-59	05-06	**9.14**	0.97	4
		07-08	**6.94**	1.71	6
	60+	05-06	**7.52**	1.13	4
		07-08	**8.39**	1.47	5
Mexican American Female	12-19	05-06	**10.7**	1.3	16
		07-08	**7.04**	0.95	5
	20-39	05-06	**6.51**	0.65	9
		07-08	****6.44**	1.97	8
	40-59	05-06	****6.30**	2.32	6
		07-08	**4.47**	0.66	6
	60+	05-06	**13.0**	3.7	3
		07-08	**9.24**	1.82	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 1.2 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',6-Pentabromodiphenyl ether (BDE 100) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**3.93** (3.42-4.51)	**3.60** (3.10-4.10)	**7.80** (6.80-9.00)	**18.4** (15.4-22.0)	**36.5** (24.6-54.0)	2040
Age group							
12-19 years	03-04	**5.17** (4.46-6.00)	**4.90** (3.80-6.10)	**9.50** (7.90-12.8)	**19.3** (14.4-26.2)	**34.3** (25.2-45.0)	622
20 years and older	03-04	**3.77** (3.24-4.38)	**3.30** (2.90-4.00)	**7.40** (6.20-9.00)	**18.3** (15.0-22.2)	**36.6** (23.2-59.2)	1418
Gender							
Males	03-04	**4.16** (3.55-4.86)	**3.80** (3.10-4.50)	**8.50** (7.50-9.90)	**18.5** (14.9-25.1)	**44.1** (21.9-61.5)	994
Females	03-04	**3.72** (3.15-4.40)	**3.30** (2.80-4.10)	**7.10** (6.00-8.00)	**18.4** (14.4-23.1)	**33.3** (23.3-46.0)	1046
Race/ethnicity							
Mexican Americans	03-04	**4.58** (4.03-5.22)	**4.30** (3.80-5.20)	**8.10** (6.80-9.10)	**14.9** (11.4-20.3)	**26.7** (20.3-36.2)	488
Non-Hispanic blacks	03-04	**4.72** (4.01-5.55)	**4.30** (3.30-5.20)	**9.50** (7.80-10.9)	**24.1** (16.6-34.3)	**41.3** (26.0-79.2)	503
Non-Hispanic whites	03-04	**3.78** (3.17-4.51)	**3.30** (2.90-4.10)	**7.70** (6.20-9.70)	**18.6** (14.5-23.3)	**40.5** (22.6-59.2)	921

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 1.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',6-Pentabromodiphenyl ether (BDE 100) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	****13.1**	4.2	9
		07-08	**5.68**	0.92	6
	20-39	05-06	****8.98**	2.81	12
		07-08	**7.65**	1.18	15
	40-59	05-06	**4.07**	0.61	12
		07-08	**9.00**	2.08	16
	60+	05-06	**14.2**	2.6	15
		07-08	**7.76**	1.41	23
Non-Hispanic White Female	12-19	05-06	**10.8**	1.9	10
		07-08	**5.98**	0.69	7
	20-39	05-06	**9.89**	2.83	16
		07-08	**6.11**	1.05	13
	40-59	05-06	**4.06**	0.66	13
		07-08	**4.12**	0.55	17
	60+	05-06	****12.8**	5.3	17
		07-08	**8.12**	1.66	21
Non-Hispanic Black Male	12-19	05-06	**10.8**	1	13
		07-08	**6.45**	0.92	6
	20-39	05-06	**9.11**	2.32	6
		07-08	**7.18**	1.05	6
	40-59	05-06	**7.19**	1.91	5
		07-08	**7.41**	0.94	6
	60+	05-06	**12.1**	2.6	5
		07-08	**6.56**	0.9	8
Non-Hispanic Black Female	12-19	05-06	**14.2**	2.8	14
		07-08	****10.2**	3.6	5
	20-39	05-06	****11.7**	4.5	7
		07-08	**7.39**	1.17	8
	40-59	05-06	****10.4**	5	7
		07-08	**4.37**	0.48	8
	60+	05-06	**8.03**	2.35	5
		07-08	**8.54**	2.26	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',6-Pentabromodiphenyl ether (BDE 100) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**8.93**	1.09	11
		07-08	**11.0**	2.6	6
	20-39	05-06	**8.90**	1.44	9
		07-08	**7.71**	1.43	9
	40-59	05-06	**7.89**	1.25	4
		07-08	**8.15**	1.99	6
	60+	05-06	**6.74**	0.97	4
		07-08	****9.53**	3.21	5
Mexican American Female	12-19	05-06	**9.45**	1.14	16
		07-08	**6.40**	1.09	5
	20-39	05-06	**5.36**	0.72	9
		07-08	**7.45**	1.76	8
	40-59	05-06	**5.98**	1.15	6
		07-08	**4.87**	0.76	6
	60+	05-06	**10.2**	2.3	3
		07-08	**7.86**	1.53	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5,5'-Hexabromodiphenyl ether (BDE 153) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**5.69** (5.11-6.34)	**4.80** (4.20-5.30)	**11.3** (9.90-12.8)	**32.6** (27.9-40.3)	**65.7** (54.9-88.4)	2039
Age group							
12-19 years	03-04	**8.05** (6.68-9.70)	**7.50** (6.10-9.90)	**15.3** (11.7-19.4)	**31.0** (22.9-44.2)	**52.9** (35.9-68.5)	621
20 years and older	03-04	**5.41** (4.83-6.05)	**4.40** (3.80-5.10)	**10.6** (9.00-12.3)	**32.8** (26.5-45.9)	**73.3** (58.2-90.4)	1418
Gender							
Males	03-04	**6.85** (5.99-7.84)	**5.50** (4.80-6.70)	**12.7** (11.2-16.5)	**49.3** (31.0-62.9)	**88.4** (63.4-115)	994
Females	03-04	**4.78** (4.20-5.43)	**4.10** (3.40-5.00)	**9.70** (7.40-11.9)	**26.0** (20.2-31.6)	**54.5** (34.6-62.9)	1045
Race/ethnicity							
Mexican Americans	03-04	**5.11** (4.32-6.06)	**4.80** (4.20-5.40)	**8.70** (6.50-11.0)	**17.2** (13.0-25.3)	**34.0** (18.3-55.1)	487
Non-Hispanic blacks	03-04	**6.05** (5.35-6.83)	**5.50** (4.80-6.20)	**12.9** (9.90-17.5)	**30.0** (21.0-44.2)	**53.1** (36.8-63.3)	503
Non-Hispanic whites	03-04	**5.85** (5.03-6.81)	**4.90** (3.90-5.70)	**11.9** (9.90-15.2)	**39.0** (28.5-54.9)	**75.9** (58.0-93.2)	921

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 2.2.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5,5'-Hexabromodiphenyl ether (BDE 153) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**18.0**	4.4	9
		07-08	**13.8**	2.3	6
	20-39	05-06	**15.4**	3.7	12
		07-08	**20.9**	3.1	15
	40-59	05-06	**7.53**	1.04	12
		07-08	**16.0**	3.1	16
	60+	05-06	**19.7**	4.7	15
		07-08	**14.7**	3.8	23
Non-Hispanic White Female	12-19	05-06	**12.8**	2.2	10
		07-08	**8.84**	0.94	7
	20-39	05-06	**11.1**	1.9	16
		07-08	**11.8**	1.7	13
	40-59	05-06	**10.4**	2.3	13
		07-08	**9.89**	1.77	17
	60+	05-06	****9.64**	2.9	17
		07-08	**13.2**	2.5	21
Non-Hispanic Black Male	12-19	05-06	**16.5**	1.5	13
		07-08	**20.7**	3.9	6
	20-39	05-06	**10.3**	1.6	6
		07-08	**13.4**	2.8	6
	40-59	05-06	**13.4**	3.6	5
		07-08	**10.2**	1.1	6
	60+	05-06	**14.7**	1.6	5
		07-08	**10.6**	1.8	8
Non-Hispanic Black Female	12-19	05-06	**12.1**	1.5	14
		07-08	**11.1**	2	5
	20-39	05-06	**9.55**	1.69	7
		07-08	**11.0**	1.7	8
	40-59	05-06	**7.41**	2.22	7
		07-08	**6.28**	1.03	8
	60+	05-06	****6.89**	2.52	5
		07-08	**7.91**	2.1	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5,5'-Hexabromodiphenyl ether (BDE 153) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**11.0**	1	11
		07-08	**17.2**	5	6
	20-39	05-06	**11.9**	2.6	9
		07-08	**10.7**	2.1	9
	40-59	05-06	****11.3**	3.7	4
		07-08	**11.9**	2.4	6
	60+	05-06	**8.00**	1.44	4
		07-08	**17.6**	4.5	5
Mexican American Female	12-19	05-06	**10.5**	1.4	16
		07-08	**7.14**	0.72	5
	20-39	05-06	**6.73**	1.42	9
		07-08	**11.1**	2.3	8
	40-59	05-06	**9.24**	2.16	6
		07-08	**6.55**	1.61	6
	60+	05-06	**11.0**	1.8	3
		07-08	****10.2**	3.7	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5,6'-Hexabromodiphenyl ether (BDE 154) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**.900** (.800-1.10)	**2.10** (1.70-2.70)	**4.20** (2.80-5.40)	2014
Age group							
12-19 years	03-04	*	**< LOD**	**1.20** (1.00-1.40)	**2.70** (2.00-3.00)	**4.00** (3.00-4.80)	614
20 years and older	03-04	*	**< LOD**	**.900** (.800-1.10)	**2.00** (1.60-2.60)	**4.20** (2.70-5.70)	1400
Gender							
Males	03-04	*	**< LOD**	**1.00** (.800-1.20)	**2.30** (1.80-3.00)	**4.30** (3.20-6.50)	976
Females	03-04	*	**< LOD**	**.900** (.800-1.00)	**1.80** (1.40-2.80)	**4.20** (2.50-5.70)	1038
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**1.00** (.900-1.10)	**1.80** (1.40-2.30)	**3.90** (2.30-4.50)	477
Non-Hispanic blacks	03-04	*	**< LOD**	**1.20** (.900-1.40)	**2.70** (2.30-4.40)	**5.30** (3.10-8.70)	498
Non-Hispanic whites	03-04	*	**< LOD**	**.900** (.800-1.10)	**2.00** (1.50-2.80)	**4.20** (2.50-6.70)	913

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 0.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5,6'-Hexabromodiphenyl ether (BDE 154) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	****1.30**	0.45	9
		07-08	*	*	6
	20-39	05-06	**.802**	0.237	12
		07-08	**.686**	0.089	15
	40-59	05-06	*	*	12
		07-08	**.974**	0.279	16
	60+	05-06	**1.36**	0.28	15
		07-08	**.833**	0.152	23
Non-Hispanic White Female	12-19	05-06	**1.23**	0.3	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	****1.30**	0.53	17
		07-08	**.753**	0.141	21
Non-Hispanic Black Male	12-19	05-06	**1.20**	0.16	13
		07-08	**.712**	0.108	6
	20-39	05-06	****1.24**	0.42	6
		07-08	**.637**	0.083	6
	40-59	05-06	**.623**	0.16	5
		07-08	**.733**	0.099	6
	60+	05-06	**1.40**	0.38	5
		07-08	**.693**	0.103	8
Non-Hispanic Black Female	12-19	05-06	**1.73**	0.39	14
		07-08	****1.25**	0.46	5
	20-39	05-06	****1.32**	0.55	7
		07-08	**.704**	0.088	8
	40-59	05-06	****1.26**	0.66	7
		07-08	*	*	8
	60+	05-06	****1.11**	0.46	5
		07-08	****.940**	0.329	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5,6'-Hexabromodiphenyl ether (BDE 154) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.902**	0.091	11
		07-08	**.973**	0.224	6
	20-39	05-06	**.827**	0.103	9
		07-08	**.789**	0.148	9
	40-59	05-06	**.870**	0.104	4
		07-08	**.732**	0.19	6
	60+	05-06	**.657**	0.135	4
		07-08	**.797**	0.177	5
Mexican American Female	12-19	05-06	**.965**	0.106	16
		07-08	**.649**	0.13	5
	20-39	05-06	**.609**	0.061	9
		07-08	**.671**	0.177	8
	40-59	05-06	****.710**	0.295	6
		07-08	*****	*	6
	60+	05-06	**1.09**	0.25	3
		07-08	**.898**	0.201	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',3,4,4',5',6-Heptabromodiphenyl ether (BDE 183) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1993
Age group							
12-19 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	604
20 years and older	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1389
Gender							
Males	03-04	*	**< LOD**	**< LOD**	**< LOD**	**1.70** (<LOD-2.60)	962
Females	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1031
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	484
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**< LOD**	**1.80** (<LOD-2.70)	482
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	901

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 1.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',3,4,4',5',6-Heptabromodiphenyl ether (BDE 183) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	**.694	0.238	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	.611	0.077	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	.693	0.188	5
		07-08	.733	0.087	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',3,4,4',5',6-Heptabromodiphenyl ether (BDE 183) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (BDE 209) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations† (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 6.0 and 5.8.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (BDE 209) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations† (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 6.0 and 5.8.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5,5'-Hexabromobiphenyl (PBB 153) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2.29** (1.82-2.87)	**2.20** (2.00-2.60)	**4.40** (3.40-6.30)	**12.8** (6.60-25.5)	**27.2** (11.7-60.9)	2032
Age group							
12-19 years	03-04	*	**< LOD**	**1.10** (.900-1.60)	**2.70** (2.00-3.00)	**4.10** (2.90-4.70)	616
20 years and older	03-04	**2.72** (2.14-3.47)	**2.50** (2.20-2.80)	**4.90** (3.60-7.90)	**13.6** (7.20-34.6)	**34.6** (12.8-66.8)	1416
Gender							
Males	03-04	**2.76** (2.21-3.45)	**2.70** (2.30-3.20)	**5.40** (3.90-8.50)	**15.8** (9.30-27.8)	**35.4** (13.5-70.3)	987
Females	03-04	**1.92** (1.50-2.46)	**2.00** (1.60-2.30)	**3.60** (2.80-4.90)	**9.70** (4.60-27.5)	**23.9** (7.40-56.6)	1045
Race/ethnicity							
Mexican Americans	03-04	**1.11** (.917-1.33)	**1.10** (<LOD-1.30)	**2.60** (2.00-3.00)	**6.00** (3.50-8.60)	**10.0** (6.50-15.2)	484
Non-Hispanic blacks	03-04	**2.35** (1.64-3.37)	**2.10** (1.70-2.80)	**4.80** (3.00-12.1)	**13.9** (7.00-38.2)	**29.7** (12.1-70.2)	503
Non-Hispanic whites	03-04	**2.66** (2.06-3.42)	**2.50** (2.20-2.80)	**4.90** (3.40-7.80)	**13.5** (6.60-36.4)	**34.6** (11.6-70.3)	917

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 0.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5,5'-Hexabromobiphenyl (PBB 153) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	****1.90**	1.09	9
		07-08	**.824**	0.161	6
	20-39	05-06	****6.86**	3.02	12
		07-08	****3.58**	1.27	15
	40-59	05-06	****16.8**	11.2	12
		07-08	**8.92**	1.44	16
	60+	05-06	**8.95**	2.02	15
		07-08	**6.84**	0.74	23
Non-Hispanic White Female	12-19	05-06	**.826**	0.18	10
		07-08	*	*	7
	20-39	05-06	**2.63**	0.45	16
		07-08	**1.81**	0.34	13
	40-59	05-06	****9.35**	3.65	13
		07-08	**4.63**	1.07	17
	60+	05-06	**8.83**	1.74	17
		07-08	**6.74**	1.65	21
Non-Hispanic Black Male	12-19	05-06	**1.13**	0.18	13
		07-08	**.689**	0.111	6
	20-39	05-06	****4.08**	2.26	6
		07-08	**2.10**	0.56	6
	40-59	05-06	****17.1**	8.8	5
		07-08	****14.5**	6.6	6
	60+	05-06	**8.56**	1.13	5
		07-08	**7.25**	1.17	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**2.38**	0.55	7
		07-08	****3.36**	1.64	8
	40-59	05-06	****4.26**	1.69	7
		07-08	**6.31**	1.13	8
	60+	05-06	****6.84**	2.86	5
		07-08	**8.01**	1.65	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,2',4,4',5,5'-Hexabromobiphenyl (PBB 153) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.601**	0.074	11
		07-08	*	*	6
	20-39	05-06	**1.69**	0.44	9
		07-08	**.962**	0.178	9
	40-59	05-06	**4.29**	1.26	4
		07-08	****22.7**	20.5	6
	60+	05-06	****19.7**	9.8	4
		07-08	****14.0**	8.8	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	****2.53**	1.14	9
		07-08	****1.30**	0.45	8
	40-59	05-06	**2.12**	0.4	6
		07-08	**1.64**	0.35	6
	60+	05-06	****4.16**	1.3	3
		07-08	****4.28**	1.44	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.6 and 0.6.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PBDEs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PBDEs_FactSheet.html

Serum 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1915
	01-02	*	< LOD	< LOD	< LOD	< LOD	2307
	03-04	**1.20** (1.09-1.31)	**1.09** (1.00-1.20)	**1.90** (1.75-2.20)	**4.04** (3.40-4.89)	**6.24** (5.20-7.79)	1879
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	665
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**.686** (.603-.781)	**.700** (.600-.720)	**1.00** (.900-1.11)	**1.50** (1.20-2.00)	**2.26** (1.50-3.50)	593
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1250
	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	**1.30** (1.18-1.43)	**1.15** (1.04-1.30)	**2.10** (1.86-2.40)	**4.44** (3.80-5.20)	**6.82** (5.70-8.30)	1286
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	913
	01-02	*	< LOD	< LOD	< LOD	< LOD	1075
	03-04	**1.02** (.923-1.12)	**.980** (.850-1.08)	**1.60** (1.40-1.80)	**3.20** (2.76-3.42)	**4.70** (3.83-5.50)	937
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1002
	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	**1.40** (1.25-1.57)	**1.20** (1.05-1.40)	**2.30** (2.00-2.79)	**5.17** (4.47-5.90)	**7.70** (6.00-9.55)	942
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	635
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	**.719** (.624-.829)	**.700** (.600-.800)	**1.10** (.900-1.36)	**1.90** (1.80-2.20)	**2.90** (1.98-3.52)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	**12.8** (<LOD-18.0)	409
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**1.41** (1.15-1.74)	**1.14** (.980-1.32)	**2.47** (1.70-3.90)	**6.70** (4.09-10.1)	**11.9** (6.40-18.1)	456
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	714
	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	**1.21** (1.08-1.36)	**1.10** (1.00-1.20)	**1.90** (1.74-2.28)	**3.91** (3.22-4.85)	**5.93** (4.98-7.79)	878

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.4, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.507**	0.097	9
		07-08	*	*	6
	20-39	05-06	**.671**	0.134	12
		07-08	**.808**	0.058	15
	40-59	05-06	****1.64**	0.5	12
		07-08	**1.02**	0.07	16
	60+	05-06	**2.15**	0.26	15
		07-08	**3.01**	0.36	23
Non-Hispanic White Female	12-19	05-06	**.482**	0.041	10
		07-08	**.555**	0.065	7
	20-39	05-06	**.598**	0.044	16
		07-08	**1.06**	0.16	13
	40-59	05-06	**1.29**	0.15	13
		07-08	**1.36**	0.13	17
	60+	05-06	**3.84**	0.41	17
		07-08	**4.09**	0.7	21
Non-Hispanic Black Male	12-19	05-06	**.524**	0.041	13
		07-08	*	*	6
	20-39	05-06	**.517**	0.083	6
		07-08	**.580**	0.117	6
	40-59	05-06	**1.31**	0.33	5
		07-08	**1.52**	0.31	6
	60+	05-06	**3.46**	0.76	5
		07-08	**3.00**	0.32	8
Non-Hispanic Black Female	12-19	05-06	**.431**	0.026	14
		07-08	*	*	5
	20-39	05-06	**.728**	0.102	7
		07-08	**.698**	0.129	8
	40-59	05-06	**2.19**	0.26	7
		07-08	**2.43**	0.42	8
	60+	05-06	****8.54**	3.02	5
		07-08	**7.46**	1.29	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.341**	0.032	11
		07-08	*	*	6
	20-39	05-06	**.484**	0.031	9
		07-08	**.745**	0.085	9
	40-59	05-06	**.835**	0.076	4
		07-08	**1.45**	0.34	6
	60+	05-06	**1.34**	0.12	4
		07-08	**1.78**	0.2	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.421**	0.043	9
		07-08	**.669**	0.027	8
	40-59	05-06	**1.32**	0.14	6
		07-08	**1.33**	0.16	6
	60+	05-06	**2.81**	0.51	3
		07-08	**2.89**	0.44	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1915
	01-02	*	< LOD	< LOD	< LOD	< LOD	2307
	03-04	.007 (.007-.008)	.007 (.006-.007)	.012 (.011-.014)	.027 (.023-.031)	.043 (.037-.049)	1879
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	665
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	.003 (.003-.004)	.003 (.003-.004)	.005 (.005-.006)	.008 (.006-.010)	.011 (.008-.020)	593
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1250
	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	.008 (.007-.009)	.007 (.006-.008)	.014 (.012-.015)	.030 (.026-.035)	.047 (.039-.053)	1286
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	913
	01-02	*	< LOD	< LOD	< LOD	< LOD	1075
	03-04	.006 (.006-.007)	.006 (.005-.007)	.010 (.009-.011)	.019 (.016-.023)	.030 (.027-.039)	937
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1002
	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	.008 (.007-.010)	.007 (.006-.009)	.015 (.013-.017)	.033 (.029-.040)	.049 (.043-.067)	942
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	635
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	.004 (.004-.005)	.004 (.004-.005)	.007 (.006-.009)	.014 (.011-.017)	.019 (.015-.023)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	.090 (<LOD-.110)	409
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	.008 (.007-.010)	.007 (.005-.008)	.015 (.010-.020)	.041 (.027-.067)	.082 (.041-.116)	456
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	714
	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	.007 (.007-.008)	.007 (.006-.007)	.012 (.011-.014)	.027 (.022-.031)	.043 (.035-.049)	878

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.003**	0.001	9
		07-08	*	*	6
	20-39	05-06	**.005**	0.001	12
		07-08	**.005**	0	15
	40-59	05-06	*	*	12
		07-08	**.007**	0.001	16
	60+	05-06	**.014**	0.001	15
		07-08	**.019**	0.002	23
Non-Hispanic White Female	12-19	05-06	**.003**	0	10
		07-08	**.003**	0	7
	20-39	05-06	**.004**	0	16
		07-08	**.006**	0.001	13
	40-59	05-06	**.010**	0.001	13
		07-08	**.009**	0.001	17
	60+	05-06	**.028**	0.003	17
		07-08	**.027**	0.005	21
Non-Hispanic Black Male	12-19	05-06	**.003**	0	13
		07-08	*	*	6
	20-39	05-06	**.003**	0.001	6
		07-08	**.003**	0.001	6
	40-59	05-06	**.008**	0.002	5
		07-08	**.010**	0.002	6
	60+	05-06	**.020**	0.005	5
		07-08	**.018**	0.002	8
Non-Hispanic Black Female	12-19	05-06	**.002**	0	14
		07-08	*	*	5
	20-39	05-06	**.004**	0.001	7
		07-08	**.004**	0.001	8
	40-59	05-06	**.014**	0.002	7
		07-08	**.015**	0.003	8
	60+	05-06	*	*	5
		07-08	**.044**	0.006	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.002**	0	11
		07-08	*	*	6
	20-39	05-06	**.003**	0	9
		07-08	**.005**	0.001	9
	40-59	05-06	**.007**	0.001	4
		07-08	**.010**	0.003	6
	60+	05-06	**.010**	0.001	4
		07-08	**.013**	0.002	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.003**	0	9
		07-08	**.004**	0	8
	40-59	05-06	**.010**	0.001	6
		07-08	**.009**	0.001	6
	60+	05-06	**.021**	0.003	3
		07-08	**.020**	0.003	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,4,4',5-Pentachlorobiphenyl (PCB 114) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	**.597**	0.052	12
		07-08	**.686**	0.062	16
	60+	05-06	**1.22**	0.09	15
		07-08	**1.60**	0.16	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	**.723**	0.058	13
		07-08	**.798**	0.095	17
	60+	05-06	**1.62**	0.13	17
		07-08	**1.99**	0.18	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	**.458**	0.059	5
		07-08	**.572**	0.129	6
	60+	05-06	**1.52**	0.18	5
		07-08	**1.48**	0.17	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	**.712**	0.092	7
		07-08	*	*	8
	60+	05-06	**2.83**	0.57	5
		07-08	**2.32**	0.21	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,4,4',5-Pentachlorobiphenyl (PCB 114) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	**.689**	0.113	4
		07-08	**.934**	0.076	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.361**	0.059	6
		07-08	**.450**	0.125	6
	60+	05-06	**.869**	0.068	3
		07-08	**.992**	0.121	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4'-Pentachlorobiphenyl (PCB 114) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations† (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	**.005**	0	12
		07-08	**.005**	0	16
	60+	05-06	**.008**	0.001	15
		07-08	**.010**	0.001	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	**.005**	0.001	13
		07-08	**.005**	0.001	17
	60+	05-06	**.012**	0.001	17
		07-08	**.013**	0.001	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	**.003**	0	5
		07-08	**.004**	0.001	6
	60+	05-06	**.009**	0.001	5
		07-08	**.009**	0.001	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	**.005**	0.001	7
		07-08	*	*	8
	60+	05-06	**.019**	0.004	5
		07-08	**.014**	0.001	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4'-Pentachlorobiphenyl (PCB 114) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	**.005**	0.001	4
		07-08	**.007**	0	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.003**	0	6
		07-08	**.003**	0.001	6
	60+	05-06	**.007**	0	3
		07-08	**.007**	0.001	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5-Pentachlorobiphenyl (PCB 118) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	13.1 (<LOD-15.1)	27.0 (22.1-30.3)	40.8 (32.8-48.6)	1926
	01-02	*	< LOD	15.1 (13.0-17.5)	29.0 (26.1-33.7)	44.6 (39.6-48.9)	2307
	03-04	6.00 (5.54-6.50)	5.19 (4.80-5.61)	10.4 (9.70-11.6)	21.8 (19.3-23.8)	31.3 (28.2-36.6)	1887
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	3.06 (2.76-3.39)	2.83 (2.70-3.10)	4.15 (3.60-4.56)	6.80 (4.70-9.60)	9.60 (6.80-13.2)	596
20 years and older	99-00	*	< LOD	14.9 (12.9-17.4)	28.1 (24.8-33.8)	43.8 (35.6-52.3)	1259
	01-02	*	< LOD	16.9 (15.1-19.0)	32.4 (28.3-37.3)	46.5 (41.1-51.0)	1549
	03-04	6.62 (6.10-7.18)	5.65 (5.21-6.40)	11.5 (10.2-12.6)	22.8 (20.7-25.9)	34.3 (29.6-39.6)	1291
Gender							
Males	99-00	*	< LOD	< LOD	19.6 (16.6-24.4)	28.0 (24.4-38.1)	919
	01-02	*	< LOD	12.0 (<LOD-14.9)	22.0 (17.6-27.1)	32.7 (25.4-47.5)	1075
	03-04	5.11 (4.70-5.57)	4.71 (4.16-5.06)	8.72 (7.30-9.70)	16.4 (14.0-18.9)	23.2 (20.7-25.1)	940
Females	99-00	*	< LOD	16.7 (13.6-19.7)	32.0 (27.1-40.3)	46.8 (41.2-57.8)	1007
	01-02	*	< LOD	18.7 (16.5-21.0)	36.4 (31.6-40.9)	48.9 (44.5-54.3)	1232
	03-04	6.99 (6.32-7.73)	6.02 (5.31-6.84)	12.3 (11.1-14.4)	27.3 (22.7-30.0)	37.8 (31.3-45.0)	947
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	17.3 (14.5-19.6)	23.7 (20.9-27.1)	636
	01-02	*	< LOD	< LOD	16.8 (12.5-21.7)	26.4 (19.3-33.2)	567
	03-04	3.56 (3.04-4.18)	3.15 (2.60-3.82)	5.02 (4.26-6.66)	9.37 (7.45-11.7)	14.0 (10.0-17.6)	426
Non-Hispanic blacks	99-00	*	< LOD	19.0 (13.6-21.7)	38.7 (28.4-54.4)	59.7 (45.7-80.8)	413
	01-02	*	< LOD	15.6 (12.6-19.9)	37.3 (26.1-46.4)	54.9 (40.0-66.6)	515
	03-04	6.70 (5.52-8.14)	5.25 (4.40-6.10)	12.7 (8.80-18.0)	35.1 (21.1-45.0)	57.8 (33.5-110)	462
Non-Hispanic whites	99-00	*	< LOD	13.1 (<LOD-15.6)	25.6 (20.8-32.0)	40.3 (30.4-46.8)	720
	01-02	*	< LOD	15.9 (13.6-18.1)	31.1 (27.1-35.9)	45.3 (38.7-50.1)	1061
	03-04	6.19 (5.57-6.87)	5.46 (4.85-6.20)	10.9 (9.62-12.1)	22.0 (19.3-24.4)	30.7 (26.2-36.6)	878

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.5, 10.5, and 0.6, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5-Pentachlorobiphenyl (PCB 118) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**2.24**	0.31	9
		07-08	**2.29**	0.32	6
	20-39	05-06	**3.30**	0.67	12
		07-08	**3.30**	0.22	15
	40-59	05-06	**7.56**	1.56	12
		07-08	**5.16**	0.23	16
	60+	05-06	**13.3**	1.4	15
		07-08	**15.5**	1.6	23
Non-Hispanic White Female	12-19	05-06	**2.07**	0.15	10
		07-08	**2.41**	0.23	7
	20-39	05-06	**2.99**	0.19	16
		07-08	**4.18**	0.58	13
	40-59	05-06	**7.83**	0.8	13
		07-08	**7.56**	0.73	17
	60+	05-06	**21.9**	2	17
		07-08	**21.5**	2.8	21
Non-Hispanic Black Male	12-19	05-06	**2.47**	0.24	13
		07-08	**2.04**	0.2	6
	20-39	05-06	**2.62**	0.49	6
		07-08	**2.85**	0.35	6
	40-59	05-06	**7.30**	1.8	5
		07-08	**7.31**	1.3	6
	60+	05-06	**19.9**	3.6	5
		07-08	**16.1**	1.7	8
Non-Hispanic Black Female	12-19	05-06	**2.02**	0.11	14
		07-08	**1.92**	0.24	5
	20-39	05-06	**3.70**	0.44	7
		07-08	**3.37**	0.3	8
	40-59	05-06	**11.7**	1.3	7
		07-08	**11.2**	1.9	8
	60+	05-06	**45.0**	13.5	5
		07-08	**35.1**	5	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.72 and 0.3.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5-Pentachlorobiphenyl (PCB 118) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**1.50**	0.11	11
		07-08	**1.52**	0.18	6
	20-39	05-06	**2.17**	0.14	9
		07-08	**2.66**	0.22	9
	40-59	05-06	**4.06**	0.35	4
		07-08	**6.03**	0.93	6
	60+	05-06	**8.12**	0.99	4
		07-08	**8.69**	0.8	5
Mexican American Female	12-19	05-06	**1.36**	0.08	16
		07-08	****1.21**	0.37	5
	20-39	05-06	**1.94**	0.2	9
		07-08	**2.50**	0.17	8
	40-59	05-06	**6.79**	0.67	6
		07-08	**6.11**	0.85	6
	60+	05-06	**15.3**	2.7	3
		07-08	**14.0**	2.5	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.72 and 0.3.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5-Pentachlorobiphenyl (PCB 118) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	.090 (<LOD-.100)	.180 (.150-.200)	.260 (.220-.320)	1926
	01-02	*	< LOD	.100 (.090-.110)	.190 (.160-.220)	.300 (.270-.320)	2307
	03-04	.037 (.034-.040)	.032 (.029-.036)	.066 (.061-.073)	.143 (.127-.160)	.216 (.192-.233)	1887
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	.015 (.014-.017)	.014 (.013-.016)	.021 (.018-.023)	.036 (.024-.046)	.047 (.035-.076)	596
20 years and older	99-00	*	< LOD	.100 (.090-.110)	.190 (.170-.220)	.280 (.230-.360)	1259
	01-02	*	< LOD	.110 (.100-.130)	.210 (.180-.250)	.310 (.280-.370)	1549
	03-04	.041 (.038-.045)	.036 (.032-.041)	.072 (.066-.081)	.159 (.137-.174)	.226 (.202-.249)	1291
Gender							
Males	99-00	*	< LOD	< LOD	.130 (.110-.140)	.190 (.160-.220)	919
	01-02	*	< LOD	.080 (<LOD-.100)	.140 (.120-.170)	.210 (.160-.300)	1075
	03-04	.032 (.029-.035)	.030 (.026-.033)	.054 (.046-.062)	.110 (.083-.125)	.160 (.136-.180)	940
Females	99-00	*	< LOD	.110 (.090-.130)	.210 (.180-.260)	.320 (.260-.410)	1007
	01-02	*	< LOD	.130 (.100-.140)	.240 (.210-.260)	.360 (.300-.380)	1232
	03-04	.042 (.038-.047)	.036 (.030-.043)	.081 (.068-.097)	.176 (.152-.206)	.242 (.217-.290)	947
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	.110 (.090-.130)	.140 (.130-.180)	636
	01-02	*	< LOD	< LOD	.120 (.080-.160)	.180 (.130-.220)	567
	03-04	.022 (.018-.026)	.019 (.016-.024)	.034 (.029-.039)	.069 (.046-.086)	.094 (.075-.117)	426
Non-Hispanic blacks	99-00	*	< LOD	.120 (.080-.150)	.220 (.180-.320)	.400 (.260-.500)	413
	01-02	*	< LOD	.100 (.070-.120)	.210 (.170-.270)	.320 (.230-.460)	515
	03-04	.038 (.031-.046)	.030 (.026-.034)	.074 (.054-.106)	.218 (.133-.277)	.370 (.218-.618)	462
Non-Hispanic whites	99-00	*	< LOD	.090 (<LOD-.100)	.180 (.150-.200)	.250 (.200-.330)	720
	01-02	*	< LOD	.100 (.090-.120)	.210 (.170-.240)	.300 (.270-.360)	1061
	03-04	.038 (.034-.043)	.034 (.029-.040)	.067 (.062-.076)	.143 (.127-.165)	.209 (.178-.234)	878

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5-Pentachlorobiphenyl (PCB 118) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.012**	0.002	9
		07-08	**.011**	0.002	6
	20-39	05-06	**.025**	0.006	12
		07-08	**.022**	0.002	15
	40-59	05-06	**.058**	0.013	12
		07-08	**.038**	0.002	16
	60+	05-06	**.090**	0.008	15
		07-08	**.099**	0.009	23
Non-Hispanic White Female	12-19	05-06	**.011**	0.001	10
		07-08	**.011**	0.001	7
	20-39	05-06	**.019**	0.001	16
		07-08	**.025**	0.004	13
	40-59	05-06	**.058**	0.007	13
		07-08	**.050**	0.005	17
	60+	05-06	**.158**	0.013	17
		07-08	**.145**	0.019	21
Non-Hispanic Black Male	12-19	05-06	**.012**	0.001	13
		07-08	**.010**	0.001	6
	20-39	05-06	**.016**	0.003	6
		07-08	**.016**	0.002	6
	40-59	05-06	**.047**	0.012	5
		07-08	**.047**	0.008	6
	60+	05-06	**.117**	0.02	5
		07-08	**.098**	0.011	8
Non-Hispanic Black Female	12-19	05-06	**.010**	0.001	14
		07-08	**.009**	0.001	5
	20-39	05-06	**.021**	0.003	7
		07-08	**.017**	0.002	8
	40-59	05-06	**.075**	0.01	7
		07-08	**.068**	0.012	8
	60+	05-06	**.300**	0.091	5
		07-08	**.208**	0.024	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5-Pentachlorobiphenyl (PCB 118) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.008**	0.001	11
		07-08	**.008**	0.001	6
	20-39	05-06	**.015**	0.001	9
		07-08	**.018**	0.002	9
	40-59	05-06	**.033**	0.003	4
		07-08	**.043**	0.007	6
	60+	05-06	**.059**	0.007	4
		07-08	**.063**	0.007	5
Mexican American Female	12-19	05-06	**.007**	0	16
		07-08	*	*	5
	20-39	05-06	**.013**	0.001	9
		07-08	**.015**	0.001	8
	40-59	05-06	**.050**	0.005	6
		07-08	**.041**	0.006	6
	60+	05-06	**.114**	0.016	3
		07-08	**.096**	0.018	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2',3,4,4',5-Pentachlorobiphenyl (PCB 123) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2',3,4,4',5-Pentachlorobiphenyl (PCB 123) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2',3,4,4',5-Pentachlorobiphenyl (PCB 123) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations† (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2',3,4,4',5-Pentachlorobiphenyl (PCB 123) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**12.6** (<LOD-13.8)	**17.0** (15.5-18.0)	1907
	01-02	*	< LOD	< LOD	**14.3** (12.1-16.0)	**18.3** (15.6-21.1)	2296
	03-04	**2.54** (2.36-2.74)	**3.29** (2.90-3.80)	**7.00** (6.20-8.07)	**11.4** (10.4-12.6)	**15.3** (13.8-17.5)	1880
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	665
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	**.500** (<LOD-.660)	**1.20** (1.00-1.43)	**2.30** (2.06-2.45)	**3.00** (2.37-3.60)	586
20 years and older	99-00	*	< LOD	< LOD	**13.6** (<LOD-14.7)	**17.5** (16.0-20.1)	1242
	01-02	*	< LOD	< LOD	**15.0** (13.3-17.0)	**19.7** (17.0-22.1)	1540
	03-04	**3.31** (3.05-3.60)	**4.10** (3.40-4.66)	**7.81** (6.80-8.70)	**12.0** (10.9-13.5)	**16.8** (14.7-18.6)	1294
Gender							
Males	99-00	*	< LOD	< LOD	**12.6** (<LOD-14.0)	**17.0** (14.6-18.0)	912
	01-02	*	< LOD	< LOD	**13.7** (11.3-16.4)	**18.4** (14.3-22.1)	1069
	03-04	**2.57** (2.34-2.82)	**3.10** (2.80-3.80)	**6.92** (5.82-8.00)	**11.8** (9.79-14.2)	**17.1** (14.7-19.3)	940
Females	99-00	*	< LOD	< LOD	**12.8** (<LOD-14.7)	**16.5** (15.4-20.7)	995
	01-02	*	< LOD	< LOD	**14.8** (13.2-15.5)	**18.2** (16.2-21.0)	1227
	03-04	**2.51** (2.28-2.76)	**3.42** (2.80-4.10)	**7.09** (6.35-8.10)	**11.1** (10.4-12.0)	**14.1** (12.7-16.8)	940
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	631
	01-02	*	< LOD	< LOD	< LOD	< LOD	566
	03-04	**.858** (.640-1.15)	**1.00** (.700-1.40)	**2.48** (1.50-3.60)	**4.78** (4.00-5.68)	**6.40** (5.40-7.70)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	**14.6** (<LOD-20.5)	**23.1** (17.2-32.1)	412
	01-02	*	< LOD	< LOD	**15.5** (12.7-21.0)	**23.5** (16.4-31.4)	511
	03-04	**2.32** (1.87-2.89)	**3.04** (2.40-3.60)	**7.40** (5.48-9.80)	**14.7** (11.5-18.6)	**24.8** (15.0-33.0)	456
Non-Hispanic whites	99-00	*	< LOD	< LOD	**13.6** (<LOD-15.2)	**17.4** (16.0-18.9)	711
	01-02	*	< LOD	< LOD	**15.0** (13.2-17.5)	**19.4** (16.2-22.1)	1056
	03-04	**3.03** (2.70-3.39)	**4.03** (3.15-4.66)	**7.76** (6.51-8.79)	**11.7** (10.5-13.1)	**15.7** (13.5-18.5)	880

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.5, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.822**	0.123	9
		07-08	**.985**	0.283	6
	20-39	05-06	**1.61**	0.26	12
		07-08	**1.73**	0.21	15
	40-59	05-06	**5.40**	0.36	12
		07-08	**5.41**	0.32	16
	60+	05-06	**8.93**	0.48	15
		07-08	**11.9**	1	23
Non-Hispanic White Female	12-19	05-06	**.614**	0.064	10
		07-08	**.751**	0.136	7
	20-39	05-06	**1.08**	0.09	16
		07-08	**1.50**	0.16	13
	40-59	05-06	**4.72**	0.39	13
		07-08	**5.33**	0.33	17
	60+	05-06	**9.10**	0.84	17
		07-08	**10.5**	0.7	21
Non-Hispanic Black Male	12-19	05-06	**.659**	0.077	13
		07-08	*	*	6
	20-39	05-06	**1.35**	0.23	6
		07-08	**1.35**	0.19	6
	40-59	05-06	**4.39**	0.48	5
		07-08	**5.13**	0.48	6
	60+	05-06	**13.5**	1.9	5
		07-08	**12.5**	1.4	8
Non-Hispanic Black Female	12-19	05-06	**.383**	0.036	14
		07-08	*	*	5
	20-39	05-06	**1.17**	0.17	7
		07-08	**1.03**	0.15	8
	40-59	05-06	**4.73**	0.62	7
		07-08	**5.20**	0.37	8
	60+	05-06	**17.1**	3.9	5
		07-08	**13.0**	0.7	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.435**	0.073	11
		07-08	**.436**	0.091	6
	20-39	05-06	**.809**	0.117	9
		07-08	**.914**	0.147	9
	40-59	05-06	**2.48**	0.24	4
		07-08	**4.17**	0.83	6
	60+	05-06	**5.39**	1.05	4
		07-08	**5.80**	0.39	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.524**	0.07	9
		07-08	**.700**	0.062	8
	40-59	05-06	**2.45**	0.26	6
		07-08	**3.02**	0.47	6
	60+	05-06	**4.81**	0.26	3
		07-08	**5.07**	0.65	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.090 (<LOD-.090)	.110 (.100-.130)	1907
	01-02	*	< LOD	< LOD	.100 (.080-.110)	.130 (.110-.140)	2296
	03-04	.016 (.014-.017)	.021 (.018-.024)	.048 (.041-.052)	.075 (.069-.085)	.103 (.094-.112)	1880
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	665
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	.003 (<LOD-.003)	.006 (.005-.007)	.012 (.011-.012)	.015 (.012-.018)	586
20 years and older	99-00	*	< LOD	< LOD	.090 (<LOD-.100)	.120 (.100-.140)	1242
	01-02	*	< LOD	< LOD	.100 (.090-.120)	.130 (.120-.140)	1540
	03-04	.021 (.019-.023)	.026 (.021-.030)	.051 (.045-.057)	.082 (.072-.093)	.109 (.098-.121)	1294
Gender							
Males	99-00	*	< LOD	< LOD	.090 (<LOD-.100)	.110 (.090-.130)	912
	01-02	*	< LOD	< LOD	.090 (.080-.120)	.120 (.110-.150)	1069
	03-04	.016 (.014-.018)	.021 (.017-.025)	.045 (.037-.054)	.076 (.068-.094)	.108 (.094-.123)	940
Females	99-00	*	< LOD	< LOD	.090 (<LOD-.090)	.110 (.090-.140)	995
	01-02	*	< LOD	< LOD	.100 (.090-.100)	.130 (.110-.140)	1227
	03-04	.015 (.014-.017)	.020 (.017-.025)	.049 (.044-.052)	.073 (.064-.085)	.101 (.089-.112)	940
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	631
	01-02	*	< LOD	< LOD	< LOD	< LOD	566
	03-04	.005 (.004-.007)	.007 (.004-.009)	.015 (.011-.022)	.036 (.025-.041)	.046 (.037-.070)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	.090 (<LOD-.120)	.150 (.110-.190)	412
	01-02	*	< LOD	< LOD	.100 (.080-.130)	.150 (.100-.180)	511
	03-04	.013 (.010-.017)	.018 (.014-.022)	.044 (.032-.056)	.099 (.067-.127)	.166 (.108-.198)	456
Non-Hispanic whites	99-00	*	< LOD	< LOD	.090 (<LOD-.100)	.110 (.100-.130)	711
	01-02	*	< LOD	< LOD	.100 (.090-.120)	.130 (.120-.140)	1056
	03-04	.019 (.017-.021)	.025 (.020-.031)	.051 (.044-.057)	.078 (.069-.089)	.104 (.094-.119)	880

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.005**	0.001	9
		07-08	**.005**	0.001	6
	20-39	05-06	**.012**	0.002	12
		07-08	**.012**	0.002	15
	40-59	05-06	**.041**	0.003	12
		07-08	**.039**	0.002	16
	60+	05-06	**.061**	0.003	15
		07-08	**.075**	0.006	23
Non-Hispanic White Female	12-19	05-06	**.003**	0	10
		07-08	**.004**	0.001	7
	20-39	05-06	**.007**	0.001	16
		07-08	**.009**	0.001	13
	40-59	05-06	**.035**	0.004	13
		07-08	**.035**	0.002	17
	60+	05-06	**.066**	0.005	17
		07-08	**.070**	0.004	21
Non-Hispanic Black Male	12-19	05-06	**.003**	0	13
		07-08	*	*	6
	20-39	05-06	**.008**	0.001	6
		07-08	**.008**	0.001	6
	40-59	05-06	**.028**	0.003	5
		07-08	**.033**	0.003	6
	60+	05-06	**.080**	0.012	5
		07-08	**.076**	0.009	8
Non-Hispanic Black Female	12-19	05-06	**.002**	0	14
		07-08	*	*	5
	20-39	05-06	**.007**	0.001	7
		07-08	**.005**	0.001	8
	40-59	05-06	**.030**	0.004	7
		07-08	**.031**	0.003	8
	60+	05-06	**.114**	0.026	5
		07-08	**.078**	0.004	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.002**	0	11
		07-08	**.002**	0.001	6
	20-39	05-06	**.006**	0.001	9
		07-08	**.006**	0.001	9
	40-59	05-06	**.020**	0.002	4
		07-08	**.030**	0.006	6
	60+	05-06	**.039**	0.007	4
		07-08	**.042**	0.003	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.004**	0.001	9
		07-08	**.004**	0	8
	40-59	05-06	**.018**	0.002	6
		07-08	**.020**	0.003	6
	60+	05-06	**.037**	0.004	3
		07-08	**.035**	0.005	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1897
	01-02	*	< LOD	< LOD	< LOD	< LOD	2294
	03-04	**.605** (.554-.661)	**.800** (.700-.940)	**1.73** (1.47-1.93)	**2.80** (2.50-3.10)	**3.80** (3.36-4.30)	1858
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	654
	01-02	*	< LOD	< LOD	< LOD	< LOD	755
	03-04	*	< LOD	< LOD	**.690** (.540-.760)	**.980** (.750-1.12)	580
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1243
	01-02	*	< LOD	< LOD	< LOD	< LOD	1539
	03-04	**.743** (.675-.817)	**.980** (.800-1.10)	**1.88** (1.69-2.05)	**2.98** (2.68-3.30)	**3.97** (3.51-4.59)	1278
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	901
	01-02	*	< LOD	< LOD	< LOD	< LOD	1068
	03-04	**.594** (.541-.653)	**.750** (.700-.900)	**1.65** (1.38-1.88)	**2.90** (2.39-3.50)	**4.00** (3.57-4.87)	928
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	996
	01-02	*	< LOD	< LOD	< LOD	< LOD	1226
	03-04	**.615** (.552-.685)	**.890** (.700-1.00)	**1.79** (1.60-1.99)	**2.70** (2.50-2.91)	**3.40** (3.20-3.93)	930
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	622
	01-02	*	< LOD	< LOD	< LOD	< LOD	566
	03-04	*	< LOD	**.600** (<LOD-.820)	**1.12** (.960-1.32)	**1.59** (1.20-1.80)	422
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	405
	01-02	*	< LOD	< LOD	< LOD	< LOD	510
	03-04	**.568** (.488-.662)	**.720** (.600-.930)	**1.80** (1.39-2.26)	**3.55** (3.10-4.40)	**5.35** (3.60-8.80)	448
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	716
	01-02	*	< LOD	< LOD	< LOD	< LOD	1055
	03-04	**.713** (.635-.801)	**.980** (.760-1.12)	**1.81** (1.58-2.06)	**2.86** (2.54-3.27)	**3.80** (3.27-4.73)	869

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.5, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.367**	0.055	12
		07-08	*	*	15
	40-59	05-06	**1.15**	0.07	12
		07-08	**1.31**	0.09	16
	60+	05-06	**2.03**	0.11	15
		07-08	**2.91**	0.27	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	**1.06**	0.09	13
		07-08	**1.38**	0.09	17
	60+	05-06	**2.15**	0.21	17
		07-08	**2.72**	0.19	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	**.988**	0.12	5
		07-08	**1.30**	0.12	6
	60+	05-06	**3.25**	0.45	5
		07-08	**3.26**	0.39	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	**1.13**	0.16	7
		07-08	**1.38**	0.11	8
	60+	05-06	**4.31**	1.09	5
		07-08	**3.41**	0.19	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**.561**	0.072	4
		07-08	**.979**	0.195	6
	60+	05-06	**1.13**	0.2	4
		07-08	**1.30**	0.07	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.567**	0.057	6
		07-08	**.756**	0.101	6
	60+	05-06	**1.08**	0.08	3
		07-08	**1.46**	0.26	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1897
	01-02	*	< LOD	< LOD	< LOD	< LOD	2294
	03-04	**.004** (.003-.004)	**.005** (.004-.006)	**.011** (.010-.013)	**.018** (.016-.021)	**.024** (.022-.027)	1858
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	654
	01-02	*	< LOD	< LOD	< LOD	< LOD	755
	03-04	*	< LOD	< LOD	**.004** (.003-.004)	**.005** (.004-.005)	580
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1243
	01-02	*	< LOD	< LOD	< LOD	< LOD	1539
	03-04	**.005** (.004-.005)	**.006** (.005-.007)	**.012** (.011-.014)	**.019** (.017-.022)	**.026** (.023-.031)	1278
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	901
	01-02	*	< LOD	< LOD	< LOD	< LOD	1068
	03-04	**.004** (.003-.004)	**.005** (.004-.006)	**.011** (.009-.012)	**.018** (.016-.022)	**.025** (.022-.027)	928
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	996
	01-02	*	< LOD	< LOD	< LOD	< LOD	1226
	03-04	**.004** (.003-.004)	**.005** (.004-.006)	**.012** (.010-.013)	**.017** (.016-.020)	**.024** (.021-.027)	930
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	622
	01-02	*	< LOD	< LOD	< LOD	< LOD	566
	03-04	*	< LOD	**.004** (<LOD-.006)	**.008** (.006-.009)	**.011** (.009-.014)	422
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	405
	01-02	*	< LOD	< LOD	< LOD	< LOD	510
	03-04	**.003** (.003-.004)	**.004** (.003-.006)	**.011** (.008-.014)	**.025** (.016-.031)	**.040** (.026-.050)	448
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	716
	01-02	*	< LOD	< LOD	< LOD	< LOD	1055
	03-04	**.004** (.004-.005)	**.006** (.005-.008)	**.012** (.010-.014)	**.018** (.016-.021)	**.025** (.022-.027)	869

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.003**	0	12
		07-08	*	*	15
	40-59	05-06	**.009**	0.001	12
		07-08	**.009**	0.001	16
	60+	05-06	**.014**	0.001	15
		07-08	**.018**	0.002	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	**.008**	0.001	13
		07-08	**.009**	0.001	17
	60+	05-06	**.016**	0.001	17
		07-08	**.018**	0.001	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	**.006**	0.001	5
		07-08	**.008**	0.001	6
	60+	05-06	**.019**	0.003	5
		07-08	**.020**	0.003	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	**.007**	0.001	7
		07-08	**.008**	0.001	8
	60+	05-06	**.029**	0.007	5
		07-08	**.020**	0.001	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**.005**	0	4
		07-08	**.007**	0.001	6
	60+	05-06	**.008**	0.001	4
		07-08	**.009**	0	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.004**	0	6
		07-08	**.005**	0.001	6
	60+	05-06	**.008**	0	3
		07-08	**.010**	0.002	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1908
	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	**.494** (.441-.553)	**.700** (.560-.800)	**1.60** (1.40-1.70)	**2.99** (2.74-3.36)	**4.10** (3.80-4.47)	1864
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	666
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	< LOD	**.640** (.500-.770)	**.870** (.700-1.10)	584
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1242
	01-02	*	< LOD	< LOD	< LOD	< LOD	1540
	03-04	**.592** (.521-.673)	**.860** (.700-1.00)	**1.72** (1.55-2.03)	**3.30** (2.90-3.60)	**4.30** (3.90-4.81)	1280
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	908
	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	**.423** (<LOD-.471)	**.500** (.440-.600)	**1.33** (1.16-1.60)	**2.70** (2.25-3.50)	**3.80** (3.50-4.70)	931
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1000
	01-02	*	< LOD	< LOD	< LOD	< LOD	1229
	03-04	**.573** (.492-.669)	**.880** (.660-1.06)	**1.71** (1.51-2.10)	**3.21** (2.82-3.62)	**4.30** (3.80-4.70)	933
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	627
	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	*	< LOD	**.600** (.400-.800)	**1.20** (.960-1.44)	**1.70** (1.30-1.94)	419
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	411
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**.521** (.432-.628)	**.560** (.460-.800)	**1.95** (1.25-2.40)	**4.30** (3.27-6.79)	**7.90** (4.70-11.8)	451
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	715
	01-02	*	< LOD	< LOD	< LOD	< LOD	1056
	03-04	**.538** (.458-.632)	**.800** (.600-.990)	**1.66** (1.42-1.90)	**2.98** (2.70-3.45)	**3.94** (3.62-4.47)	875

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.4, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.397**	0.087	12
		07-08	*	*	15
	40-59	05-06	**1.07**	0.12	12
		07-08	**.967**	0.07	16
	60+	05-06	**2.30**	0.16	15
		07-08	**2.73**	0.23	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**.334**	0.026	16
		07-08	*	*	13
	40-59	05-06	**1.19**	0.12	13
		07-08	**1.30**	0.1	17
	60+	05-06	**2.67**	0.23	17
		07-08	**2.93**	0.23	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.346**	0.065	6
		07-08	*	*	6
	40-59	05-06	**1.05**	0.16	5
		07-08	**1.28**	0.2	6
	60+	05-06	**3.71**	0.57	5
		07-08	**3.44**	0.44	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.388**	0.047	7
		07-08	*	*	8
	40-59	05-06	**1.57**	0.19	7
		07-08	**1.60**	0.21	8
	60+	05-06	**6.11**	1.71	5
		07-08	**4.73**	0.3	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**.589**	0.034	4
		07-08	**1.08**	0.2	6
	60+	05-06	**1.35**	0.26	4
		07-08	**1.55**	0.18	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.893**	0.088	6
		07-08	**1.00**	0.13	6
	60+	05-06	**1.69**	0.17	3
		07-08	**1.92**	0.25	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1908
	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	**.003** (.003-.003)	**.004** (.003-.005)	**.010** (.009-.012)	**.020** (.018-.022)	**.026** (.024-.027)	1864
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	666
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	< LOD	**.004** (.003-.004)	**.005** (.004-.005)	584
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1242
	01-02	*	< LOD	< LOD	< LOD	< LOD	1540
	03-04	**.004** (.003-.004)	**.005** (.004-.006)	**.012** (.010-.013)	**.021** (.019-.023)	**.027** (.025-.030)	1280
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	908
	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	**.003** (<LOD-.003)	**.003** (.003-.004)	**.009** (.008-.010)	**.018** (.015-.021)	**.023** (.021-.026)	931
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1000
	01-02	*	< LOD	< LOD	< LOD	< LOD	1229
	03-04	**.003** (.003-.004)	**.005** (.004-.006)	**.012** (.010-.013)	**.022** (.019-.024)	**.027** (.025-.031)	933
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	627
	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	*	< LOD	**.004** (.003-.004)	**.009** (.007-.011)	**.013** (.010-.015)	419
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	411
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**.003** (.002-.004)	**.003** (.003-.005)	**.012** (.008-.015)	**.028** (.019-.042)	**.051** (.030-.072)	451
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	715
	01-02	*	< LOD	< LOD	< LOD	< LOD	1056
	03-04	**.003** (.003-.004)	**.005** (.004-.006)	**.011** (.009-.013)	**.020** (.018-.022)	**.025** (.023-.027)	875

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.003**	0.001	12
		07-08	*	*	15
	40-59	05-06	**.008**	0.001	12
		07-08	**.007**	0	16
	60+	05-06	**.016**	0.001	15
		07-08	**.017**	0.001	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**.002**	0	16
		07-08	*	*	13
	40-59	05-06	**.009**	0.001	13
		07-08	**.009**	0.001	17
	60+	05-06	**.019**	0.001	17
		07-08	**.020**	0.001	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.002**	0	6
		07-08	*	*	6
	40-59	05-06	**.007**	0.001	5
		07-08	**.008**	0.001	6
	60+	05-06	**.022**	0.003	5
		07-08	**.021**	0.003	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.002**	0	7
		07-08	*	*	8
	40-59	05-06	**.010**	0.001	7
		07-08	**.010**	0.001	8
	60+	05-06	**.041**	0.011	5
		07-08	**.028**	0.002	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**.005**	0	4
		07-08	**.008**	0.001	6
	60+	05-06	**.010**	0.002	4
		07-08	**.011**	0.001	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.007**	0.001	6
		07-08	**.007**	0.001	6
	60+	05-06	**.013**	0	3
		07-08	**.013**	0.002	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	*	< LOD	< LOD	**.900** (.700-1.16)	**1.47** (1.10-2.18)	1817
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	752
	03-04	*	< LOD	< LOD	< LOD	**1.00** (<LOD-3.09)	570
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1546
	03-04	*	< LOD	< LOD	**1.00** (.760-1.20)	**1.50** (1.10-2.14)	1247
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1070
	03-04	*	< LOD	< LOD	**1.00** (.800-1.20)	**1.54** (1.20-2.23)	903
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1228
	03-04	*	< LOD	< LOD	**.830** (.600-1.14)	**1.39** (.890-2.18)	914
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	*	< LOD	< LOD	< LOD	**.700** (<LOD-1.00)	406
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	514
	03-04	*	< LOD	< LOD	**1.20** (.840-1.60)	**1.85** (1.20-2.83)	444
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1057
	03-04	*	< LOD	< LOD	**.900** (.700-1.26)	**1.51** (1.04-2.19)	851

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	**.474**	0.075	12
		07-08	**.525**	0.041	16
	60+	05-06	**.799**	0.047	15
		07-08	**1.04**	0.06	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	**.386**	0.05	17
	60+	05-06	**.615**	0.059	17
		07-08	**.856**	0.056	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	**.423**	0.022	5
		07-08	**.626**	0.056	6
	60+	05-06	**1.11**	0.05	5
		07-08	**1.42**	0.18	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	**.373**	0.073	7
		07-08	**.538**	0.041	8
	60+	05-06	**1.24**	0.24	5
		07-08	**1.21**	0.1	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	**.445**	0.128	6
	60+	05-06	**.506**	0.146	4
		07-08	**.729**	0.068	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	**.407**	0.015	3
		07-08	****.819**	0.305	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	*	< LOD	< LOD	.006 (.005-.008)	.010 (.007-.014)	1817
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	752
	03-04	*	< LOD	< LOD	< LOD	.005 (<LOD-.017)	570
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1546
	03-04	*	< LOD	< LOD	.006 (.005-.008)	.010 (.007-.014)	1247
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1070
	03-04	*	< LOD	< LOD	.006 (.005-.009)	.011 (.008-.014)	903
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1228
	03-04	*	< LOD	< LOD	.005 (.004-.008)	.009 (.006-.014)	914
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	*	< LOD	< LOD	< LOD	.005 (<LOD-.007)	406
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	514
	03-04	*	< LOD	< LOD	.008 (.005-.010)	.012 (.007-.016)	444
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1057
	03-04	*	< LOD	< LOD	.006 (.005-.008)	.010 (.007-.014)	851

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	**.004**	0.001	12
		07-08	**.004**	0	16
	60+	05-06	**.005**	0	15
		07-08	**.007**	0	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	**.003**	0	17
	60+	05-06	**.004**	0	17
		07-08	**.006**	0	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	**.003**	0	5
		07-08	**.004**	0	6
	60+	05-06	**.007**	0	5
		07-08	**.009**	0.001	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	**.002**	0	7
		07-08	**.003**	0	8
	60+	05-06	**.008**	0.002	5
		07-08	**.007**	0.001	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	**.003**	0.001	6
	60+	05-06	**.004**	0.001	4
		07-08	**.005**	0	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	**.003**	0	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary:
http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/DioxinLikeChemicals_FactSheet.html

Serum 2,4,4'-Trichlorobiphenyl (PCB 28) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1849
	03-04	**4.90** (4.60-5.22)	**4.96** (4.65-5.26)	**6.79** (6.40-7.31)	**9.39** (8.70-10.1)	**11.3** (10.7-11.8)	1866
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	647
	03-04	**5.02** (4.48-5.63)	**4.88** (4.26-5.48)	**7.20** (5.90-8.60)	**10.2** (8.40-11.5)	**11.7** (10.7-13.3)	590
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1202
	03-04	**4.88** (4.61-5.17)	**4.98** (4.67-5.26)	**6.78** (6.40-7.25)	**9.10** (8.70-9.87)	**11.1** (10.6-11.8)	1276
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	886
	03-04	**4.81** (4.47-5.16)	**4.86** (4.45-5.20)	**6.70** (6.07-7.50)	**9.39** (8.34-10.4)	**10.8** (10.5-11.4)	926
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	963
	03-04	**4.99** (4.66-5.35)	**5.07** (4.73-5.37)	**6.90** (6.49-7.40)	**9.37** (8.72-10.1)	**11.6** (10.7-13.1)	940
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	618
	03-04	**4.95** (4.55-5.38)	**4.90** (4.40-5.70)	**6.70** (6.07-7.90)	**8.94** (8.17-9.70)	**10.5** (9.02-14.7)	413
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	392
	03-04	**4.95** (4.20-5.84)	**5.03** (4.10-5.60)	**7.20** (5.62-8.80)	**10.2** (8.51-12.4)	**13.1** (10.8-15.3)	459
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	687
	03-04	**4.89** (4.58-5.22)	**4.90** (4.61-5.26)	**6.76** (6.33-7.32)	**9.40** (8.70-10.3)	**11.1** (10.6-11.8)	876

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00 and 03-04 are 32.4 and 1.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4'-Trichlorobiphenyl (PCB 28) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	**.726**	0.065	15
	40-59	05-06	*	*	12
		07-08	**1.05**	0.17	16
	60+	05-06	*	*	15
		07-08	**1.73**	0.15	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	**1.36**	0.38	7
	20-39	05-06	*	*	16
		07-08	**.942**	0.095	13
	40-59	05-06	*	*	13
		07-08	**1.12**	0.1	17
	60+	05-06	**2.93**	0.33	17
		07-08	**2.64**	0.32	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	**.865**	0.089	6
	60+	05-06	**2.74**	0.55	5
		07-08	**1.40**	0.19	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	**.832**	0.115	8
	40-59	05-06	*	*	7
		07-08	**1.38**	0.17	8
	60+	05-06	**3.81**	0.59	5
		07-08	****5.42**	3.06	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 2.54 and 0.7.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4'-Trichlorobiphenyl (PCB 28) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	**.715**	0.091	9
	40-59	05-06	*	*	4
		07-08	**.988**	0.109	6
	60+	05-06	*	*	4
		07-08	**1.26**	0.15	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	**1.13**	0.24	8
	40-59	05-06	*	*	6
		07-08	**1.04**	0.06	6
	60+	05-06	*	*	3
		07-08	**1.69**	0.19	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 2.54 and 0.7.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4'-Trichlorobiphenyl (PCB 28) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1849
	03-04	**.030** (.028-.032)	**.030** (.028-.032)	**.041** (.039-.043)	**.057** (.055-.060)	**.067** (.063-.071)	1866
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	647
	03-04	**.025** (.023-.028)	**.025** (.021-.028)	**.035** (.030-.042)	**.051** (.042-.061)	**.061** (.051-.070)	590
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1202
	03-04	**.031** (.029-.033)	**.031** (.029-.032)	**.042** (.040-.043)	**.058** (.055-.061)	**.067** (.063-.071)	1276
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	886
	03-04	**.030** (.028-.032)	**.030** (.027-.032)	**.041** (.037-.044)	**.056** (.051-.061)	**.065** (.061-.070)	926
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	963
	03-04	**.030** (.028-.032)	**.030** (.028-.032)	**.042** (.039-.044)	**.058** (.055-.061)	**.070** (.064-.075)	940
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	618
	03-04	**.030** (.028-.033)	**.031** (.027-.035)	**.041** (.036-.044)	**.053** (.048-.059)	**.063** (.054-.070)	413
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	392
	03-04	**.028** (.024-.033)	**.029** (.024-.033)	**.039** (.034-.047)	**.059** (.047-.070)	**.070** (.064-.082)	459
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	687
	03-04	**.030** (.028-.032)	**.030** (.028-.032)	**.041** (.039-.043)	**.058** (.055-.061)	**.068** (.062-.075)	876

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4'-Trichlorobiphenyl (PCB 28) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	**.005**	0	15
	40-59	05-06	*	*	12
		07-08	**.008**	0.001	16
	60+	05-06	*	*	15
		07-08	**.011**	0.001	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	**.006**	0.002	7
	20-39	05-06	*	*	16
		07-08	**.006**	0.001	13
	40-59	05-06	*	*	13
		07-08	**.007**	0.001	17
	60+	05-06	**.021**	0.002	17
		07-08	**.018**	0.002	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	**.005**	0.001	6
	60+	05-06	**.016**	0.003	5
		07-08	**.008**	0.001	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	**.004**	0.001	8
	40-59	05-06	*	*	7
		07-08	**.008**	0.001	8
	60+	05-06	**.025**	0.004	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4'-Trichlorobiphenyl (PCB 28) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	**.005**	0.001	9
	40-59	05-06	*	*	4
		07-08	**.007**	0.001	6
	60+	05-06	*	*	4
		07-08	**.009**	0.001	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	**.006**	0.001	8
	40-59	05-06	*	*	6
		07-08	**.007**	0	6
	60+	05-06	*	*	3
		07-08	**.012**	0.001	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2'3,5'-Tetrachlorobiphenyl (PCB 44) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2.06** (1.93-2.19)	**2.05** (1.90-2.20)	**3.03** (2.90-3.20)	**4.40** (4.10-4.86)	**5.70** (5.40-6.10)	1890
Age group							
12-19 years	03-04	**2.45** (2.22-2.70)	**2.44** (2.10-2.70)	**3.68** (3.19-4.37)	**5.78** (5.13-6.30)	**7.99** (6.20-9.10)	597
20 years and older	03-04	**2.00** (1.88-2.13)	**2.00** (1.90-2.11)	**2.97** (2.80-3.20)	**4.27** (3.85-4.70)	**5.44** (5.00-5.89)	1293
Gender							
Males	03-04	**2.12** (2.01-2.25)	**2.12** (2.00-2.30)	**3.11** (2.97-3.31)	**4.52** (4.10-5.20)	**5.89** (5.38-6.80)	942
Females	03-04	**1.99** (1.82-2.18)	**1.98** (1.80-2.20)	**2.94** (2.72-3.21)	**4.30** (3.77-5.05)	**5.60** (5.00-6.20)	948
Race/ethnicity							
Mexican Americans	03-04	**2.09** (1.88-2.31)	**2.10** (1.90-2.39)	**3.10** (2.52-3.73)	**4.20** (3.30-6.10)	**5.69** (3.80-7.40)	427
Non-Hispanic blacks	03-04	**2.21** (1.94-2.52)	**2.12** (1.80-2.56)	**3.18** (2.72-3.94)	**4.90** (3.90-6.32)	**6.32** (5.01-9.62)	464
Non-Hispanic whites	03-04	**2.03** (1.87-2.19)	**2.01** (1.90-2.20)	**3.07** (2.90-3.29)	**4.40** (4.01-4.95)	**5.70** (5.25-6.35)	877

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2'3,5'-Tetrachlorobiphenyl (PCB 44) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.36 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2'3,5'-Tetrachlorobiphenyl (PCB 44) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.36 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2'3,5'-Tetrachlorobiphenyl (PCB 44) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**.013** (.012-.013)	**.013** (.012-.014)	**.018** (.017-.020)	**.026** (.024-.028)	**.032** (.030-.034)	1890
Age group							
12-19 years	03-04	**.012** (.011-.014)	**.013** (.011-.014)	**.019** (.016-.021)	**.029** (.024-.031)	**.037** (.030-.042)	597
20 years and older	03-04	**.013** (.012-.013)	**.013** (.012-.014)	**.018** (.017-.020)	**.025** (.023-.027)	**.031** (.029-.034)	1293
Gender							
Males	03-04	**.013** (.012-.014)	**.013** (.012-.014)	**.018** (.017-.020)	**.026** (.024-.028)	**.034** (.030-.038)	942
Females	03-04	**.012** (.011-.013)	**.012** (.011-.013)	**.018** (.016-.020)	**.025** (.023-.028)	**.030** (.028-.032)	948
Race/ethnicity							
Mexican Americans	03-04	**.013** (.011-.014)	**.013** (.011-.014)	**.017** (.015-.020)	**.023** (.018-.031)	**.027** (.021-.049)	427
Non-Hispanic blacks	03-04	**.013** (.011-.014)	**.012** (.010-.014)	**.018** (.015-.022)	**.026** (.021-.034)	**.035** (.026-.040)	464
Non-Hispanic whites	03-04	**.012** (.012-.014)	**.012** (.011-.014)	**.019** (.017-.020)	**.026** (.024-.028)	**.032** (.029-.035)	877

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2'3,5'-Tetrachlorobiphenyl (PCB 44) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2'3,5'-Tetrachlorobiphenyl (PCB 44) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5'-Tetrachlorobiphenyl (PCB 49) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.29** (1.20-1.39)	**1.35** (1.24-1.45)	**1.90** (1.80-2.10)	**2.80** (2.60-3.08)	**3.53** (3.33-3.80)	1876
Age group							
12-19 years	03-04	**1.54** (1.37-1.72)	**1.59** (1.33-1.80)	**2.30** (2.00-2.84)	**3.60** (3.10-4.13)	**4.66** (3.80-5.73)	590
20 years and older	03-04	**1.26** (1.17-1.35)	**1.33** (1.22-1.40)	**1.90** (1.78-2.03)	**2.69** (2.50-2.80)	**3.36** (3.15-3.63)	1286
Gender							
Males	03-04	**1.36** (1.27-1.45)	**1.40** (1.30-1.50)	**2.00** (1.90-2.20)	**3.00** (2.60-3.23)	**3.79** (3.36-4.10)	932
Females	03-04	**1.23** (1.12-1.35)	**1.30** (1.13-1.40)	**1.80** (1.70-2.04)	**2.66** (2.38-3.01)	**3.39** (3.02-3.73)	944
Race/ethnicity							
Mexican Americans	03-04	**1.33** (1.20-1.48)	**1.46** (1.20-1.57)	**2.00** (1.67-2.30)	**2.70** (2.17-3.80)	**3.56** (2.63-4.20)	426
Non-Hispanic blacks	03-04	**1.40** (1.23-1.59)	**1.40** (1.20-1.64)	**2.06** (1.70-2.80)	**3.23** (2.80-3.70)	**3.88** (3.33-5.53)	453
Non-Hispanic whites	03-04	**1.26** (1.15-1.38)	**1.32** (1.20-1.40)	**1.90** (1.78-2.11)	**2.77** (2.50-3.10)	**3.45** (3.20-3.90)	876

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5'-Tetrachlorobiphenyl (PCB 49) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5'-Tetrachlorobiphenyl (PCB 49) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5'-Tetrachlorobiphenyl (PCB 49) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**.008** (.007-.008)	**.008** (.007-.009)	**.012** (.011-.012)	**.016** (.015-.017)	**.019** (.018-.021)	1876
Age group							
12-19 years	03-04	**.008** (.007-.009)	**.008** (.007-.009)	**.012** (.010-.013)	**.018** (.015-.019)	**.022** (.018-.025)	590
20 years and older	03-04	**.008** (.007-.008)	**.008** (.007-.009)	**.012** (.011-.013)	**.015** (.015-.017)	**.019** (.018-.021)	1286
Gender							
Males	03-04	**.008** (.008-.009)	**.008** (.008-.009)	**.012** (.011-.013)	**.017** (.015-.018)	**.021** (.019-.022)	932
Females	03-04	**.007** (.007-.008)	**.008** (.007-.008)	**.011** (.010-.012)	**.015** (.014-.017)	**.018** (.017-.019)	944
Race/ethnicity							
Mexican Americans	03-04	**.008** (.007-.009)	**.008** (.007-.009)	**.011** (.010-.014)	**.015** (.012-.018)	**.018** (.015-.023)	426
Non-Hispanic blacks	03-04	**.008** (.007-.009)	**.008** (.007-.009)	**.012** (.010-.014)	**.017** (.015-.020)	**.021** (.017-.026)	453
Non-Hispanic whites	03-04	**.008** (.007-.009)	**.008** (.007-.009)	**.012** (.011-.013)	**.016** (.015-.017)	**.019** (.018-.021)	876

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5'-Tetrachlorobiphenyl (PCB 49) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5'-Tetrachlorobiphenyl (PCB 49) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',5,5'-Tetrachlorobiphenyl (PCB 52) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1912
	01-02	*	< LOD	< LOD	< LOD	**16.5** (14.3-17.2)	1537
	03-04	**2.66** (2.43-2.91)	**2.74** (2.50-3.00)	**4.17** (3.72-4.60)	**5.91** (5.40-6.67)	**7.60** (7.01-8.00)	1897
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	664
	01-02	*	< LOD	< LOD	**16.2** (<LOD-23.8)	**22.9** (16.9-32.3)	291
	03-04	**3.16** (2.81-3.56)	**3.22** (2.60-3.96)	**5.15** (4.46-5.79)	**7.60** (6.55-8.33)	**9.20** (7.80-12.5)	597
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1248
	01-02	*	< LOD	< LOD	< LOD	**16.0** (13.5-16.9)	1246
	03-04	**2.59** (2.36-2.84)	**2.70** (2.46-2.92)	**4.06** (3.60-4.43)	**5.70** (5.16-6.49)	**7.15** (6.62-7.80)	1300
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	908
	01-02	*	< LOD	< LOD	< LOD	**16.0** (<LOD-17.5)	716
	03-04	**2.75** (2.54-2.98)	**2.80** (2.55-3.20)	**4.36** (3.90-4.88)	**5.94** (5.51-6.80)	**7.80** (7.29-8.49)	946
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1004
	01-02	*	< LOD	< LOD	< LOD	**16.6** (14.0-18.2)	821
	03-04	**2.57** (2.30-2.87)	**2.70** (2.40-2.96)	**3.96** (3.52-4.30)	**5.86** (4.96-6.67)	**7.15** (6.57-8.10)	951
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	631
	01-02	*	< LOD	< LOD	< LOD	**16.9** (<LOD-20.6)	366
	03-04	**2.88** (2.56-3.24)	**3.00** (2.70-3.30)	**4.41** (3.60-5.30)	**6.00** (4.71-8.11)	**7.83** (5.70-12.0)	426
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	408
	01-02	*	< LOD	< LOD	< LOD	**16.6** (<LOD-20.9)	282
	03-04	**2.74** (2.35-3.19)	**2.58** (2.08-3.40)	**4.11** (3.30-5.60)	**6.92** (5.10-8.70)	**8.70** (7.10-10.2)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	716
	01-02	*	< LOD	< LOD	< LOD	**16.6** (14.7-17.5)	773
	03-04	**2.60** (2.35-2.88)	**2.70** (2.40-2.98)	**4.17** (3.70-4.60)	**5.79** (5.20-6.75)	**7.37** (6.80-7.87)	885

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.5, 12.4, and 0.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',5,5'-Tetrachlorobiphenyl (PCB 52) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	**.348**	0.071	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	**.562**	0.135	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	**.807**	0.149	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.33 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',5,5'-Tetrachlorobiphenyl (PCB 52) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.33 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',5,5'-Tetrachlorobiphenyl (PCB 52) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1912
	01-02	*	< LOD	< LOD	< LOD	.090 (.080-.100)	1537
	03-04	.016 (.015-.018)	.017 (.015-.019)	.024 (.022-.028)	.035 (.032-.037)	.043 (.039-.046)	1897
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	664
	01-02	*	< LOD	< LOD	.080 (<LOD-.100)	.100 (.080-.140)	291
	03-04	.016 (.014-.018)	.017 (.014-.019)	.026 (.022-.029)	.037 (.032-.041)	.042 (.037-.056)	597
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1248
	01-02	*	< LOD	< LOD	< LOD	.090 (.080-.090)	1246
	03-04	.016 (.015-.018)	.017 (.015-.019)	.024 (.022-.028)	.034 (.031-.036)	.043 (.038-.045)	1300
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	908
	01-02	*	< LOD	< LOD	< LOD	.090 (<LOD-.110)	716
	03-04	.017 (.016-.018)	.018 (.016-.020)	.025 (.023-.029)	.036 (.032-.039)	.044 (.040-.048)	946
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1004
	01-02	*	< LOD	< LOD	< LOD	.090 (.080-.100)	821
	03-04	.016 (.014-.017)	.016 (.014-.018)	.024 (.021-.028)	.033 (.030-.036)	.042 (.036-.046)	951
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	631
	01-02	*	< LOD	< LOD	< LOD	.090 (<LOD-.110)	366
	03-04	.018 (.016-.020)	.018 (.016-.021)	.025 (.022-.030)	.035 (.028-.044)	.044 (.032-.064)	426
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	408
	01-02	*	< LOD	< LOD	< LOD	.090 (<LOD-.110)	282
	03-04	.016 (.014-.018)	.015 (.012-.019)	.022 (.019-.031)	.035 (.029-.043)	.043 (.035-.049)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	716
	01-02	*	< LOD	< LOD	< LOD	.090 (.080-.100)	773
	03-04	.016 (.014-.018)	.017 (.014-.019)	.024 (.022-.028)	.035 (.032-.037)	.043 (.038-.047)	885

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',5,5'-Tetrachlorobiphenyl (PCB 52) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	**.003**	0	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	**.003**	0.001	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	**.005**	0.001	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',5,5'-Tetrachlorobiphenyl (PCB 52) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3',4,4'-Tetrachlorobiphenyl (PCB 66) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1931
	01-02	*	< LOD	< LOD	< LOD	< LOD	2250
	03-04	**1.39** (1.32-1.47)	**1.37** (1.30-1.40)	**1.97** (1.90-2.10)	**3.10** (2.94-3.26)	**4.10** (3.90-4.55)	1898
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	671
	01-02	*	< LOD	< LOD	< LOD	< LOD	724
	03-04	**1.24** (1.14-1.34)	**1.20** (1.10-1.26)	**1.76** (1.62-2.00)	**2.40** (2.30-2.70)	**3.25** (2.70-4.10)	598
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1260
	01-02	*	< LOD	< LOD	< LOD	< LOD	1526
	03-04	**1.42** (1.34-1.49)	**1.40** (1.30-1.43)	**2.00** (1.90-2.12)	**3.10** (2.97-3.40)	**4.20** (3.90-4.71)	1300
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	919
	01-02	*	< LOD	< LOD	< LOD	< LOD	1047
	03-04	**1.29** (1.20-1.39)	**1.30** (1.20-1.38)	**1.87** (1.72-2.01)	**2.70** (2.50-3.00)	**3.30** (2.96-3.82)	947
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1012
	01-02	*	< LOD	< LOD	< LOD	< LOD	1203
	03-04	**1.50** (1.42-1.58)	**1.41** (1.38-1.50)	**2.10** (1.92-2.30)	**3.70** (3.20-4.00)	**5.08** (4.10-5.46)	951
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	636
	01-02	*	< LOD	< LOD	< LOD	< LOD	548
	03-04	**1.19** (1.09-1.30)	**1.14** (1.00-1.30)	**1.60** (1.48-1.73)	**2.23** (1.80-3.20)	**3.20** (2.46-3.60)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	414
	01-02	*	< LOD	< LOD	< LOD	< LOD	495
	03-04	**1.50** (1.34-1.68)	**1.38** (1.21-1.50)	**2.31** (1.80-2.80)	**3.80** (3.10-4.80)	**5.46** (4.30-8.60)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	723
	01-02	*	< LOD	< LOD	< LOD	< LOD	1047
	03-04	**1.39** (1.31-1.47)	**1.39** (1.30-1.45)	**1.96** (1.90-2.10)	**3.01** (2.71-3.28)	**4.09** (3.70-4.33)	885

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.4, 12.4, and 0.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3',4,4'-Tetrachlorobiphenyl (PCB 66) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.415**	0.061	12
		07-08	**.389**	0.063	15
	40-59	05-06	**.827**	0.138	12
		07-08	**.657**	0.066	16
	60+	05-06	****1.42**	0.44	15
		07-08	**1.27**	0.18	23
Non-Hispanic White Female	12-19	05-06	**.421**	0.04	10
		07-08	**.605**	0.146	7
	20-39	05-06	**.471**	0.054	16
		07-08	**.629**	0.157	13
	40-59	05-06	**.671**	0.091	13
		07-08	**.750**	0.066	17
	60+	05-06	**1.91**	0.21	17
		07-08	**1.84**	0.21	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	**.784**	0.154	5
		07-08	**.645**	0.155	6
	60+	05-06	**1.49**	0.23	5
		07-08	**1.29**	0.18	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.677**	0.112	7
		07-08	*	*	8
	40-59	05-06	**1.09**	0.1	7
		07-08	**1.13**	0.21	8
	60+	05-06	**3.40**	0.95	5
		07-08	**2.49**	0.63	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.4 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3',4,4'-Tetrachlorobiphenyl (PCB 66) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.459**	0.074	9
		07-08	**.414**	0.088	9
	40-59	05-06	**.585**	0.103	4
		07-08	****.713**	0.223	6
	60+	05-06	**.702**	0.057	4
		07-08	**.869**	0.051	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	**.597**	0.07	8
	40-59	05-06	**.751**	0.095	6
		07-08	**.684**	0.073	6
	60+	05-06	**1.32**	0.36	3
		07-08	**1.18**	0.14	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.4 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3',4,4'-Tetrachlorobiphenyl (PCB 66) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1931
	01-02	*	< LOD	< LOD	< LOD	< LOD	2250
	03-04	**.008** (.008-.009)	**.008** (.008-.009)	**.012** (.012-.013)	**.019** (.018-.021)	**.025** (.024-.030)	1898
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	671
	01-02	*	< LOD	< LOD	< LOD	< LOD	724
	03-04	**.006** (.006-.007)	**.006** (.005-.007)	**.009** (.008-.010)	**.013** (.012-.014)	**.017** (.013-.019)	598
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1260
	01-02	*	< LOD	< LOD	< LOD	< LOD	1526
	03-04	**.009** (.008-.009)	**.008** (.008-.009)	**.013** (.012-.013)	**.020** (.019-.022)	**.026** (.024-.032)	1300
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	919
	01-02	*	< LOD	< LOD	< LOD	< LOD	1047
	03-04	**.008** (.007-.009)	**.008** (.007-.008)	**.011** (.010-.013)	**.017** (.016-.019)	**.020** (.019-.022)	947
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1012
	01-02	*	< LOD	< LOD	< LOD	< LOD	1203
	03-04	**.009** (.009-.010)	**.009** (.008-.009)	**.013** (.012-.014)	**.022** (.021-.024)	**.032** (.026-.034)	951
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	636
	01-02	*	< LOD	< LOD	< LOD	< LOD	548
	03-04	**.007** (.007-.008)	**.007** (.006-.008)	**.010** (.009-.011)	**.015** (.011-.018)	**.018** (.014-.020)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	414
	01-02	*	< LOD	< LOD	< LOD	< LOD	495
	03-04	**.009** (.008-.009)	**.008** (.007-.009)	**.013** (.011-.015)	**.022** (.019-.030)	**.036** (.024-.070)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	723
	01-02	*	< LOD	< LOD	< LOD	< LOD	1047
	03-04	**.009** (.008-.009)	**.008** (.008-.009)	**.012** (.012-.013)	**.019** (.018-.022)	**.025** (.023-.030)	885

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3',4,4'-Tetrachlorobiphenyl (PCB 66) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.003**	0.001	12
		07-08	**.003**	0	15
	40-59	05-06	**.006**	0.001	12
		07-08	**.005**	0.001	16
	60+	05-06	*	*	15
		07-08	**.008**	0.001	23
Non-Hispanic White Female	12-19	05-06	**.002**	0	10
		07-08	**.003**	0.001	7
	20-39	05-06	**.003**	0	16
		07-08	**.004**	0.001	13
	40-59	05-06	**.005**	0.001	13
		07-08	**.005**	0	17
	60+	05-06	**.014**	0.001	17
		07-08	**.012**	0.001	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	**.005**	0.001	5
		07-08	**.004**	0.001	6
	60+	05-06	**.009**	0.001	5
		07-08	**.008**	0.001	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.004**	0.001	7
		07-08	*	*	8
	40-59	05-06	**.007**	0.001	7
		07-08	**.007**	0.001	8
	60+	05-06	**.023**	0.006	5
		07-08	**.015**	0.004	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3',4,4'-Tetrachlorobiphenyl (PCB 66) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.003**	0.001	9
		07-08	**.003**	0.001	9
	40-59	05-06	**.005**	0.001	4
		07-08	*	*	6
	60+	05-06	**.005**	0.001	4
		07-08	**.006**	0	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	**.003**	0	8
	40-59	05-06	**.006**	0.001	6
		07-08	**.005**	0	6
	60+	05-06	**.010**	0.002	3
		07-08	**.008**	0.001	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4',5-Tetrachlorobiphenyl (PCB 74) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**20.8** (17.9-23.4)	**29.0** (24.5-32.3)	1924
	01-02	*	< LOD	**13.2** (11.0-15.7)	**23.5** (20.2-27.7)	**33.0** (26.9-38.7)	2307
	03-04	**4.81** (4.63-4.99)	**4.36** (3.90-4.88)	**8.72** (8.30-9.28)	**15.8** (14.7-17.7)	**22.3** (19.7-25.5)	1898
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	671
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**2.20** (2.02-2.39)	**2.20** (2.03-2.33)	**2.98** (2.80-3.30)	**4.19** (3.60-4.73)	**5.32** (4.20-6.90)	598
20 years and older	99-00	*	< LOD	**12.6** (<LOD-14.4)	**22.4** (19.5-25.6)	**30.0** (26.2-35.8)	1253
	01-02	*	< LOD	**14.7** (12.4-17.1)	**25.2** (21.4-28.9)	**34.8** (28.8-41.4)	1549
	03-04	**5.38** (5.16-5.62)	**5.00** (4.60-5.50)	**9.60** (8.90-10.6)	**17.1** (15.7-18.5)	**24.1** (20.8-27.7)	1300
Gender							
Males	99-00	*	< LOD	< LOD	**15.4** (13.0-17.8)	**21.6** (18.3-24.4)	915
	01-02	*	< LOD	**10.6** (<LOD-12.3)	**20.2** (15.4-24.9)	**28.8** (20.8-38.2)	1075
	03-04	**4.06** (3.82-4.31)	**3.62** (3.30-4.00)	**6.71** (6.20-7.77)	**12.4** (10.8-13.1)	**15.8** (14.6-18.5)	947
Females	99-00	*	< LOD	**13.9** (<LOD-16.4)	**24.6** (21.9-28.5)	**31.9** (28.8-40.3)	1009
	01-02	*	< LOD	**15.8** (13.5-18.7)	**26.1** (23.2-29.3)	**35.9** (31.4-41.4)	1232
	03-04	**5.65** (5.33-5.98)	**5.38** (4.84-5.95)	**10.9** (9.30-12.1)	**19.1** (17.4-21.1)	**27.4** (22.9-29.6)	951
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	**15.8** (12.8-18.2)	636
	01-02	*	< LOD	< LOD	**13.3** (<LOD-18.1)	**19.6** (16.2-23.0)	567
	03-04	**2.43** (2.10-2.80)	**2.12** (1.90-2.40)	**3.34** (2.90-4.16)	**6.10** (5.25-7.40)	**10.4** (6.61-12.2)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	**29.0** (18.6-38.4)	**43.8** (35.4-64.0)	411
	01-02	*	< LOD	**12.0** (<LOD-14.2)	**21.7** (16.4-26.9)	**31.9** (24.5-41.0)	515
	03-04	**4.96** (4.21-5.83)	**4.00** (3.45-4.65)	**9.17** (6.80-12.4)	**23.0** (14.6-35.1)	**40.2** (23.0-68.2)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	**21.6** (18.9-24.0)	**29.0** (24.3-32.3)	719
	01-02	*	< LOD	**14.7** (12.2-17.3)	**25.8** (21.3-30.1)	**35.9** (29.0-42.5)	1061
	03-04	**5.23** (4.98-5.50)	**4.91** (4.38-5.65)	**9.30** (8.60-10.4)	**16.1** (15.1-18.2)	**21.9** (19.2-25.2)	885

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.4, 10.5, and 0.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4',5-Tetrachlorobiphenyl (PCB 74) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**1.84**	0.15	9
		07-08	**1.75**	0.27	6
	20-39	05-06	**2.63**	0.45	12
		07-08	**2.22**	0.08	15
	40-59	05-06	**5.30**	0.32	12
		07-08	**4.09**	0.24	16
	60+	05-06	**11.7**	1.1	15
		07-08	**10.5**	0.9	23
Non-Hispanic White Female	12-19	05-06	**1.82**	0.15	10
		07-08	**1.65**	0.11	7
	20-39	05-06	**2.64**	0.17	16
		07-08	**2.45**	0.3	13
	40-59	05-06	**7.21**	0.59	13
		07-08	**6.25**	0.52	17
	60+	05-06	**17.8**	1.7	17
		07-08	**15.8**	1.1	21
Non-Hispanic Black Male	12-19	05-06	**2.03**	0.16	13
		07-08	**1.37**	0.2	6
	20-39	05-06	**2.30**	0.31	6
		07-08	**1.82**	0.17	6
	40-59	05-06	**4.49**	0.6	5
		07-08	**4.41**	0.74	6
	60+	05-06	**16.5**	2.4	5
		07-08	**11.5**	1.4	8
Non-Hispanic Black Female	12-19	05-06	**1.34**	0.17	14
		07-08	**1.03**	0.15	5
	20-39	05-06	**2.89**	0.34	7
		07-08	**1.83**	0.16	8
	40-59	05-06	**8.74**	1.02	7
		07-08	**8.01**	1.27	8
	60+	05-06	**36.0**	9.3	5
		07-08	**21.5**	2.1	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.8.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4',5-Tetrachlorobiphenyl (PCB 74) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**1.22**	0.17	11
		07-08	**.992**	0.124	6
	20-39	05-06	**1.57**	0.1	9
		07-08	**1.55**	0.14	9
	40-59	05-06	**2.94**	0.34	4
		07-08	**3.13**	0.29	6
	60+	05-06	**6.38**	0.49	4
		07-08	**6.54**	0.59	5
Mexican American Female	12-19	05-06	**1.08**	0.12	16
		07-08	*	*	5
	20-39	05-06	**1.46**	0.17	9
		07-08	**1.60**	0.14	8
	40-59	05-06	**4.28**	0.43	6
		07-08	**4.65**	0.82	6
	60+	05-06	**11.9**	2.1	3
		07-08	**9.71**	2.27	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.8.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4',5-Tetrachlorobiphenyl (PCB 74) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.140 (.120-.150)	.180 (.160-.220)	1924
	01-02	*	< LOD	.090 (.070-.100)	.150 (.140-.180)	.210 (.180-.270)	2307
	03-04	.029 (.028-.031)	.027 (.024-.029)	.058 (.053-.062)	.104 (.093-.121)	.153 (.135-.171)	1898
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	671
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	.011 (.010-.012)	.011 (.010-.012)	.015 (.014-.018)	.021 (.019-.025)	.026 (.021-.033)	598
20 years and older	99-00	*	< LOD	.080 (<LOD-.100)	.150 (.140-.160)	.200 (.170-.230)	1253
	01-02	*	< LOD	.100 (.080-.110)	.170 (.140-.190)	.230 (.200-.280)	1549
	03-04	.034 (.032-.035)	.031 (.028-.033)	.064 (.059-.068)	.115 (.103-.128)	.167 (.143-.186)	1300
Gender							
Males	99-00	*	< LOD	< LOD	.100 (.090-.120)	.150 (.130-.170)	915
	01-02	*	< LOD	.070 (<LOD-.080)	.130 (.100-.170)	.190 (.140-.250)	1075
	03-04	.025 (.023-.027)	.023 (.021-.027)	.043 (.040-.050)	.077 (.067-.087)	.103 (.092-.118)	947
Females	99-00	*	< LOD	.100 (<LOD-.110)	.160 (.140-.180)	.220 (.190-.250)	1009
	01-02	*	< LOD	.100 (.090-.110)	.170 (.150-.190)	.240 (.210-.290)	1232
	03-04	.034 (.032-.037)	.031 (.027-.036)	.071 (.062-.085)	.130 (.120-.143)	.186 (.154-.216)	951
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	.110 (.080-.130)	636
	01-02	*	< LOD	< LOD	.090 (<LOD-.120)	.140 (.110-.160)	567
	03-04	.015 (.013-.017)	.013 (.011-.016)	.022 (.019-.026)	.042 (.032-.054)	.071 (.049-.097)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	.170 (.110-.250)	.280 (.220-.420)	411
	01-02	*	< LOD	.070 (<LOD-.080)	.130 (.100-.170)	.200 (.150-.250)	515
	03-04	.028 (.024-.033)	.022 (.019-.025)	.055 (.038-.077)	.153 (.090-.215)	.236 (.143-.337)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	.150 (.130-.160)	.190 (.160-.210)	719
	01-02	*	< LOD	.100 (.080-.110)	.170 (.140-.200)	.230 (.190-.280)	1061
	03-04	.032 (.030-.034)	.030 (.027-.033)	.064 (.058-.067)	.113 (.096-.123)	.153 (.131-.176)	885

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4',5-Tetrachlorobiphenyl (PCB 74) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.010**	0.001	9
		07-08	**.009**	0.001	6
	20-39	05-06	**.020**	0.004	12
		07-08	**.015**	0.001	15
	40-59	05-06	**.040**	0.003	12
		07-08	**.030**	0.002	16
	60+	05-06	**.079**	0.007	15
		07-08	**.066**	0.005	23
Non-Hispanic White Female	12-19	05-06	**.010**	0.001	10
		07-08	**.008**	0	7
	20-39	05-06	**.017**	0.001	16
		07-08	**.015**	0.002	13
	40-59	05-06	**.054**	0.006	13
		07-08	**.041**	0.004	17
	60+	05-06	**.129**	0.011	17
		07-08	**.106**	0.007	21
Non-Hispanic Black Male	12-19	05-06	**.010**	0.001	13
		07-08	**.006**	0.001	6
	20-39	05-06	**.014**	0.002	6
		07-08	**.010**	0.001	6
	40-59	05-06	**.029**	0.004	5
		07-08	**.028**	0.005	6
	60+	05-06	**.098**	0.013	5
		07-08	**.070**	0.009	8
Non-Hispanic Black Female	12-19	05-06	**.007**	0.001	14
		07-08	**.005**	0.001	5
	20-39	05-06	**.017**	0.002	7
		07-08	**.009**	0.001	8
	40-59	05-06	**.057**	0.008	7
		07-08	**.049**	0.008	8
	60+	05-06	**.239**	0.062	5
		07-08	**.128**	0.01	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,4,4',5-Tetrachlorobiphenyl (PCB 74) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.007**	0.001	11
		07-08	**.005**	0.001	6
	20-39	05-06	**.011**	0.001	9
		07-08	**.011**	0.001	9
	40-59	05-06	**.024**	0.003	4
		07-08	**.022**	0.002	6
	60+	05-06	**.046**	0.005	4
		07-08	**.046**	0.002	5
Mexican American Female	12-19	05-06	**.006**	0.001	16
		07-08	*	*	5
	20-39	05-06	**.010**	0.001	9
		07-08	**.009**	0.001	8
	40-59	05-06	**.031**	0.003	6
		07-08	**.031**	0.006	6
	60+	05-06	**.088**	0.008	3
		07-08	**.067**	0.016	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,5'-Pentachlorobiphenyl (PCB 87) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	**.656** (.579-.744)	**.900** (.800-.980)	**1.32** (1.24-1.46)	**2.02** (1.90-2.17)	**2.70** (2.40-3.03)	1892
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**.706** (.629-.792)	**.860** (.800-1.00)	**1.56** (1.32-1.69)	**2.25** (2.05-2.60)	**3.44** (2.27-3.98)	596
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1540
	03-04	**.650** (.568-.742)	**.900** (.800-.970)	**1.30** (1.22-1.40)	**2.00** (1.85-2.17)	**2.60** (2.35-2.91)	1296
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	**.665** (.606-.730)	**.900** (.800-.970)	**1.40** (1.30-1.50)	**2.05** (1.90-2.27)	**2.70** (2.33-3.08)	945
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1229
	03-04	**.648** (.545-.771)	**.870** (.780-1.00)	**1.30** (1.20-1.41)	**2.00** (1.84-2.23)	**2.60** (2.35-3.08)	947
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	**.693** (.569-.843)	**.840** (.700-1.00)	**1.49** (1.14-1.70)	**2.00** (1.64-2.40)	**2.30** (2.00-3.10)	427
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**.824** (.723-.939)	**1.05** (.950-1.10)	**1.70** (1.32-2.10)	**2.81** (2.48-3.09)	**3.42** (3.00-4.14)	462
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1056
	03-04	**.625** (.531-.735)	**.830** (.780-.940)	**1.30** (1.20-1.40)	**1.97** (1.85-2.17)	**2.49** (2.30-2.80)	882

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,5'-Pentachlorobiphenyl (PCB 87) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	**.416**	0.073	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	**.847**	0.265	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,5'-Pentachlorobiphenyl (PCB 87) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,5'-Pentachlorobiphenyl (PCB 87) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	**.004** (.004-.005)	**.005** (.005-.006)	**.008** (.008-.009)	**.012** (.012-.013)	**.017** (.015-.017)	1892
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**.004** (.003-.004)	**.005** (.004-.005)	**.008** (.007-.008)	**.011** (.010-.013)	**.016** (.011-.021)	596
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1540
	03-04	**.004** (.004-.005)	**.006** (.005-.006)	**.008** (.008-.009)	**.012** (.011-.014)	**.017** (.014-.018)	1296
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	**.004** (.004-.005)	**.006** (.005-.006)	**.009** (.008-.009)	**.013** (.012-.014)	**.017** (.015-.018)	945
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1229
	03-04	**.004** (.003-.005)	**.005** (.005-.006)	**.008** (.007-.009)	**.012** (.011-.013)	**.016** (.014-.017)	947
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	**.004** (.003-.005)	**.005** (.004-.006)	**.008** (.007-.010)	**.011** (.009-.014)	**.014** (.011-.022)	427
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**.005** (.004-.005)	**.006** (.006-.006)	**.009** (.008-.012)	**.015** (.014-.017)	**.020** (.017-.027)	462
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1056
	03-04	**.004** (.003-.005)	**.005** (.005-.006)	**.008** (.007-.009)	**.012** (.011-.013)	**.016** (.014-.017)	882

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,5'-Pentachlorobiphenyl (PCB 87) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	**.003**	0	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,5'-Pentachlorobiphenyl (PCB 87) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5-Pentachlorobiphenyl (PCB 99) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	13.1 (<LOD-14.7)	19.1 (16.2-20.6)	1897
	01-02	*	< LOD	< LOD	17.6 (15.3-21.0)	26.3 (22.1-30.5)	2281
	03-04	4.16 (3.82-4.54)	3.79 (3.43-4.10)	6.53 (5.76-7.56)	13.0 (10.5-16.1)	18.0 (16.7-19.4)	1877
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	654
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	2.34 (2.08-2.64)	2.30 (2.05-2.60)	3.20 (2.80-3.86)	5.16 (3.80-6.12)	6.00 (4.77-10.0)	587
20 years and older	99-00	*	< LOD	< LOD	13.9 (<LOD-16.0)	20.0 (17.2-21.6)	1243
	01-02	*	< LOD	10.8 (<LOD-12.3)	19.4 (16.7-22.3)	29.0 (23.5-32.1)	1523
	03-04	4.52 (4.14-4.94)	4.08 (3.75-4.45)	7.10 (6.08-8.53)	14.7 (10.9-17.0)	18.6 (17.1-21.3)	1290
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	16.7 (13.8-20.5)	905
	01-02	*	< LOD	< LOD	17.0 (13.8-21.0)	24.9 (19.8-30.1)	1061
	03-04	3.97 (3.64-4.33)	3.69 (3.31-4.00)	6.11 (5.44-7.00)	11.1 (9.40-14.3)	16.8 (12.9-19.0)	936
Females	99-00	*	< LOD	< LOD	13.9 (<LOD-16.2)	20.3 (17.3-23.5)	992
	01-02	*	< LOD	< LOD	18.0 (15.8-22.2)	28.5 (22.5-33.2)	1220
	03-04	4.35 (3.94-4.81)	3.90 (3.43-4.70)	7.05 (6.00-8.46)	15.3 (11.5-17.3)	18.9 (17.5-22.8)	941
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	624
	01-02	*	< LOD	< LOD	< LOD	13.8 (10.7-17.4)	562
	03-04	2.33 (2.08-2.62)	2.20 (1.90-2.47)	3.35 (2.80-4.02)	5.21 (4.50-6.10)	6.35 (5.53-7.55)	426
Non-Hispanic blacks	99-00	*	< LOD	< LOD	21.1 (17.0-31.1)	32.0 (22.9-57.4)	400
	01-02	*	< LOD	11.7 (10.6-13.1)	22.5 (18.8-25.8)	29.0 (23.0-37.2)	510
	03-04	5.54 (4.53-6.77)	4.81 (3.80-5.80)	10.4 (7.20-15.3)	23.1 (16.7-29.7)	31.7 (24.2-49.1)	447
Non-Hispanic whites	99-00	*	< LOD	< LOD	12.5 (<LOD-14.5)	18.2 (14.3-20.8)	715
	01-02	*	< LOD	< LOD	18.5 (15.3-22.3)	28.5 (22.1-32.4)	1046
	03-04	4.23 (3.80-4.72)	3.90 (3.40-4.44)	6.70 (5.70-8.00)	12.6 (9.73-15.8)	17.3 (15.5-18.1)	883

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.5, 10.5, and 0.6, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5-Pentachlorobiphenyl (PCB 99) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**1.51**	0.17	9
		07-08	**1.47**	0.16	6
	20-39	05-06	**2.60**	0.41	12
		07-08	**2.29**	0.19	15
	40-59	05-06	**4.29**	0.4	12
		07-08	**3.80**	0.32	16
	60+	05-06	**8.00**	0.53	15
		07-08	**8.46**	0.78	23
Non-Hispanic White Female	12-19	05-06	**1.30**	0.07	10
		07-08	**.931**	0.206	7
	20-39	05-06	**1.86**	0.1	16
		07-08	**2.06**	0.32	13
	40-59	05-06	**4.50**	0.3	13
		07-08	**3.93**	0.29	17
	60+	05-06	**10.0**	1	17
		07-08	**8.84**	0.87	21
Non-Hispanic Black Male	12-19	05-06	**2.09**	0.22	13
		07-08	**1.43**	0.13	6
	20-39	05-06	**2.46**	0.25	6
		07-08	**2.18**	0.19	6
	40-59	05-06	**5.47**	0.79	5
		07-08	**6.22**	1.22	6
	60+	05-06	**14.2**	1.8	5
		07-08	**11.5**	1.2	8
Non-Hispanic Black Female	12-19	05-06	**1.37**	0.09	14
		07-08	**1.20**	0.16	5
	20-39	05-06	**2.39**	0.25	7
		07-08	**1.94**	0.26	8
	40-59	05-06	**7.60**	0.79	7
		07-08	**6.43**	0.75	8
	60+	05-06	**21.5**	5.7	5
		07-08	**17.9**	2.9	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5-Pentachlorobiphenyl (PCB 99) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.912**	0.089	11
		07-08	**.810**	0.143	6
	20-39	05-06	**1.46**	0.09	9
		07-08	**1.52**	0.13	9
	40-59	05-06	**2.39**	0.15	4
		07-08	**3.19**	0.52	6
	60+	05-06	**4.19**	0.31	4
		07-08	**4.50**	0.45	5
Mexican American Female	12-19	05-06	**.816**	0.043	16
		07-08	**.722**	0.075	5
	20-39	05-06	**1.13**	0.12	9
		07-08	**1.27**	0.07	8
	40-59	05-06	**3.32**	0.33	6
		07-08	**2.74**	0.26	6
	60+	05-06	**5.65**	0.74	3
		07-08	**5.21**	1.01	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5-Pentachlorobiphenyl (PCB 99) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.090 (<LOD-.100)	.120 (.100-.150)	1897
	01-02	*	< LOD	< LOD	.120 (.100-.140)	.180 (.150-.210)	2281
	03-04	.025 (.023-.028)	.024 (.021-.026)	.042 (.038-.049)	.082 (.067-.102)	.119 (.102-.140)	1877
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	654
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	.012 (.011-.013)	.012 (.010-.013)	.017 (.015-.019)	.025 (.019-.032)	.032 (.025-.045)	587
20 years and older	99-00	*	< LOD	< LOD	.090 (<LOD-.100)	.130 (.110-.150)	1243
	01-02	*	< LOD	.070 (<LOD-.080)	.130 (.110-.160)	.190 (.160-.210)	1523
	03-04	.028 (.026-.031)	.026 (.024-.028)	.046 (.041-.054)	.093 (.073-.110)	.127 (.110-.153)	1290
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	.110 (.090-.130)	905
	01-02	*	< LOD	< LOD	.110 (.090-.140)	.160 (.120-.200)	1061
	03-04	.025 (.022-.027)	.023 (.021-.025)	.040 (.036-.045)	.070 (.059-.090)	.110 (.078-.132)	936
Females	99-00	*	< LOD	< LOD	.100 (<LOD-.110)	.130 (.100-.170)	992
	01-02	*	< LOD	< LOD	.130 (.110-.160)	.200 (.160-.210)	1220
	03-04	.026 (.024-.029)	.024 (.020-.028)	.045 (.040-.053)	.095 (.078-.111)	.130 (.110-.158)	941
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	624
	01-02	*	< LOD	< LOD	< LOD	.100 (.070-.120)	562
	03-04	.014 (.012-.016)	.013 (.011-.016)	.022 (.019-.026)	.036 (.030-.040)	.046 (.036-.058)	426
Non-Hispanic blacks	99-00	*	< LOD	< LOD	.140 (.110-.180)	.210 (.150-.400)	400
	01-02	*	< LOD	.070 (.060-.090)	.140 (.110-.150)	.190 (.140-.230)	510
	03-04	.032 (.026-.039)	.027 (.023-.033)	.060 (.042-.086)	.149 (.112-.172)	.211 (.150-.306)	447
Non-Hispanic whites	99-00	*	< LOD	< LOD	.090 (<LOD-.100)	.110 (.090-.150)	715
	01-02	*	< LOD	< LOD	.120 (.100-.160)	.190 (.160-.210)	1046
	03-04	.026 (.023-.029)	.025 (.022-.027)	.043 (.038-.051)	.081 (.065-.102)	.112 (.098-.127)	883

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5-Pentachlorobiphenyl (PCB 99) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.008**	0.001	9
		07-08	**.007**	0.001	6
	20-39	05-06	**.019**	0.004	12
		07-08	**.015**	0.002	15
	40-59	05-06	**.032**	0.003	12
		07-08	**.028**	0.002	16
	60+	05-06	**.054**	0.003	15
		07-08	**.054**	0.005	23
Non-Hispanic White Female	12-19	05-06	**.007**	0	10
		07-08	**.004**	0.001	7
	20-39	05-06	**.012**	0.001	16
		07-08	**.012**	0.002	13
	40-59	05-06	**.033**	0.003	13
		07-08	**.026**	0.002	17
	60+	05-06	**.072**	0.007	17
		07-08	**.059**	0.006	21
Non-Hispanic Black Male	12-19	05-06	**.010**	0.001	13
		07-08	**.007**	0.001	6
	20-39	05-06	**.015**	0.002	6
		07-08	**.012**	0.001	6
	40-59	05-06	**.035**	0.005	5
		07-08	**.040**	0.008	6
	60+	05-06	**.084**	0.009	5
		07-08	**.070**	0.008	8
Non-Hispanic Black Female	12-19	05-06	**.007**	0	14
		07-08	**.006**	0.001	5
	20-39	05-06	**.014**	0.002	7
		07-08	**.010**	0.001	8
	40-59	05-06	**.049**	0.006	7
		07-08	**.039**	0.005	8
	60+	05-06	**.144**	0.039	5
		07-08	**.106**	0.014	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5-Pentachlorobiphenyl (PCB 99) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.005**	0	11
		07-08	**.004**	0.001	6
	20-39	05-06	**.010**	0.001	9
		07-08	**.010**	0.001	9
	40-59	05-06	**.019**	0.002	4
		07-08	**.023**	0.004	6
	60+	05-06	**.031**	0.004	4
		07-08	**.032**	0.003	5
Mexican American Female	12-19	05-06	**.004**	0	16
		07-08	**.003**	0	5
	20-39	05-06	**.008**	0.001	9
		07-08	**.007**	0.001	8
	40-59	05-06	**.024**	0.002	6
		07-08	**.019**	0.002	6
	60+	05-06	**.042**	0.005	3
		07-08	**.036**	0.007	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5,5'-Pentachlorobiphenyl (PCB 101) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1929
	01-02	*	< LOD	< LOD	< LOD	< LOD	2307
	03-04	**1.65** (1.51-1.81)	**1.70** (1.50-1.80)	**2.70** (2.50-2.94)	**4.40** (3.97-4.82)	**5.83** (5.29-6.66)	1897
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	669
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**1.93** (1.76-2.11)	**1.73** (1.51-2.10)	**3.20** (3.00-3.60)	**5.05** (4.23-5.87)	**7.25** (5.10-8.30)	598
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1260
	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	**1.62** (1.46-1.78)	**1.67** (1.50-1.80)	**2.64** (2.40-2.90)	**4.40** (3.88-4.75)	**5.51** (5.00-6.60)	1299
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	918
	01-02	*	< LOD	< LOD	< LOD	< LOD	1075
	03-04	**1.71** (1.59-1.84)	**1.75** (1.60-1.90)	**2.80** (2.60-3.10)	**4.50** (3.97-5.06)	**6.00** (5.35-6.75)	947
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1011
	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	**1.60** (1.41-1.81)	**1.61** (1.41-1.82)	**2.57** (2.30-2.98)	**4.40** (3.71-4.94)	**5.60** (4.88-7.25)	950
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	634
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	**1.72** (1.55-1.92)	**1.70** (1.50-1.96)	**3.00** (2.30-3.80)	**4.40** (3.56-5.38)	**5.38** (4.10-6.60)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	413
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**1.69** (1.38-2.07)	**1.70** (1.50-2.16)	**3.00** (2.57-3.80)	**5.88** (3.88-7.39)	**7.68** (6.60-11.9)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	724
	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	**1.61** (1.46-1.79)	**1.61** (1.41-1.80)	**2.60** (2.37-2.90)	**4.40** (3.75-4.61)	**5.50** (5.00-6.15)	885

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 25.7, 10.5, and 0.6, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5,5'-Pentachlorobiphenyl (PCB 101) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	**.632**	0.15	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	**.608	0.187	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	**.954	0.346	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.59 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result**
.Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5,5'-Pentachlorobiphenyl (PCB 101) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.59 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5,5'-Pentachlorobiphenyl (PCB 101) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1929
	01-02	*	< LOD	< LOD	< LOD	< LOD	2307
	03-04	**.010** (.009-.011)	**.010** (.009-.012)	**.016** (.015-.018)	**.027** (.024-.028)	**.033** (.031-.037)	1897
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	669
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**.010** (.009-.011)	**.009** (.008-.011)	**.016** (.014-.018)	**.024** (.021-.028)	**.030** (.025-.044)	598
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1260
	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	**.010** (.009-.011)	**.011** (.009-.012)	**.016** (.015-.018)	**.027** (.024-.029)	**.034** (.031-.037)	1299
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	918
	01-02	*	< LOD	< LOD	< LOD	< LOD	1075
	03-04	**.011** (.010-.011)	**.011** (.010-.012)	**.017** (.016-.019)	**.025** (.024-.029)	**.037** (.031-.041)	947
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1011
	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	**.010** (.009-.011)	**.010** (.009-.011)	**.015** (.014-.018)	**.027** (.022-.029)	**.032** (.030-.036)	950
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	634
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	**.011** (.009-.012)	**.011** (.009-.012)	**.018** (.014-.021)	**.024** (.020-.030)	**.029** (.022-.052)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	413
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**.010** (.008-.012)	**.011** (.008-.013)	**.016** (.013-.022)	**.032** (.023-.041)	**.045** (.032-.059)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	724
	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	**.010** (.009-.011)	**.010** (.009-.011)	**.016** (.014-.018)	**.025** (.024-.027)	**.031** (.029-.037)	885

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5,5'-Pentachlorobiphenyl (PCB 101) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	**.005**	0.001	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,5,5'-Pentachlorobiphenyl (PCB 101) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3,3',4',6-Pentachlorobiphenyl (PCB 110) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	**1.22** (1.11-1.33)	**1.20** (1.10-1.36)	**1.96** (1.80-2.20)	**3.40** (3.10-3.57)	**4.42** (3.88-4.95)	1882
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**1.44** (1.30-1.59)	**1.30** (1.20-1.50)	**2.50** (2.19-2.91)	**4.13** (3.40-4.90)	**5.40** (4.30-7.68)	593
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1540
	03-04	**1.19** (1.08-1.30)	**1.20** (1.09-1.33)	**1.88** (1.71-2.11)	**3.30** (2.95-3.50)	**4.18** (3.66-4.94)	1289
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	**1.26** (1.18-1.35)	**1.30** (1.19-1.40)	**2.05** (1.80-2.30)	**3.42** (3.07-3.70)	**4.61** (3.80-5.00)	939
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1229
	03-04	**1.17** (1.04-1.32)	**1.20** (1.00-1.36)	**1.82** (1.70-2.20)	**3.40** (2.77-3.57)	**4.40** (3.57-5.54)	943
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	**1.33** (1.18-1.51)	**1.29** (1.13-1.50)	**2.30** (1.80-2.95)	**3.40** (2.70-4.30)	**4.10** (3.30-5.50)	420
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**1.36** (1.20-1.53)	**1.30** (1.14-1.50)	**2.10** (1.72-3.00)	**4.19** (2.91-5.10)	**5.32** (4.40-6.89)	464
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1056
	03-04	**1.17** (1.05-1.31)	**1.20** (1.00-1.33)	**1.86** (1.70-2.16)	**3.40** (2.93-3.57)	**4.19** (3.69-4.95)	877

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 0.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3,3',4',6-Pentachlorobiphenyl (PCB 110) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	**.374**	0.077	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	**.315**	0.082	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3,3',4',6-Pentachlorobiphenyl (PCB 110) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3,3',4',6-Pentachlorobiphenyl (PCB 110) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	**.007** (.007-.008)	**.007** (.007-.008)	**.012** (.011-.013)	**.019** (.018-.021)	**.026** (.023-.028)	1882
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**.007** (.007-.008)	**.007** (.006-.008)	**.013** (.010-.015)	**.020** (.017-.022)	**.026** (.019-.037)	593
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1540
	03-04	**.007** (.007-.008)	**.007** (.007-.008)	**.012** (.011-.013)	**.019** (.017-.021)	**.025** (.023-.028)	1289
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	**.008** (.007-.008)	**.008** (.007-.009)	**.013** (.011-.014)	**.019** (.018-.021)	**.028** (.022-.031)	939
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1229
	03-04	**.007** (.006-.008)	**.007** (.006-.008)	**.011** (.010-.013)	**.019** (.016-.022)	**.024** (.021-.027)	943
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	**.008** (.007-.009)	**.008** (.007-.010)	**.014** (.011-.016)	**.019** (.016-.022)	**.022** (.017-.043)	420
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**.008** (.007-.009)	**.008** (.006-.009)	**.012** (.010-.016)	**.023** (.017-.028)	**.028** (.023-.032)	464
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1056
	03-04	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.013)	**.019** (.017-.021)	**.026** (.022-.029)	877

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3,3',4',6-Pentachlorobiphenyl (PCB 110) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	**.002**	0	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	**.002**	0	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,3,3',4',6-Pentachlorobiphenyl (PCB 110) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1927
	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	*	< LOD	< LOD	< LOD	**.600** (.500-.700)	1877
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	668
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	< LOD	< LOD	**.510** (<LOD-.700)	589
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1259
	01-02	*	< LOD	< LOD	< LOD	< LOD	1540
	03-04	*	< LOD	< LOD	< LOD	**.620** (.490-.800)	1288
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	917
	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	*	< LOD	< LOD	< LOD	**.600** (.420-.770)	937
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1010
	01-02	*	< LOD	< LOD	< LOD	< LOD	1229
	03-04	*	< LOD	< LOD	< LOD	**.630** (.500-.800)	940
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	636
	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	*	< LOD	< LOD	< LOD	< LOD	424
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	409
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	*	< LOD	< LOD	**.670** (.500-.800)	**1.00** (.770-2.10)	455
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	725
	01-02	*	< LOD	< LOD	< LOD	< LOD	1056
	03-04	*	< LOD	< LOD	< LOD	**.500** (.420-.600)	878

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.4, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	**.410**	0.103	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	**.367	0.133	5
		07-08	**.822	0.258	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1927
	01-02	*	< LOD	< LOD	< LOD	< LOD	2298
	03-04	*	< LOD	< LOD	< LOD	**.004** (.003-.004)	1877
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	668
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	< LOD	< LOD	**.003** (<LOD-.004)	589
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1259
	01-02	*	< LOD	< LOD	< LOD	< LOD	1540
	03-04	*	< LOD	< LOD	< LOD	**.004** (.004-.005)	1288
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	917
	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	*	< LOD	< LOD	< LOD	**.004** (.003-.005)	937
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1010
	01-02	*	< LOD	< LOD	< LOD	< LOD	1229
	03-04	*	< LOD	< LOD	< LOD	**.004** (.003-.005)	940
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	636
	01-02	*	< LOD	< LOD	< LOD	< LOD	564
	03-04	*	< LOD	< LOD	< LOD	< LOD	424
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	409
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	*	< LOD	< LOD	**.004** (.003-.005)	**.006** (.005-.013)	455
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	725
	01-02	*	< LOD	< LOD	< LOD	< LOD	1056
	03-04	*	< LOD	< LOD	< LOD	**.003** (.002-.004)	878

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	**.003**	0.001	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	*	*	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5' and 2,3,3',4,4',6-Hexachlorobiphenyl (PCB 138 & 158) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**49.3** (42.9-55.8)	**71.2** (59.8-82.7)	1930
	01-02	**19.9** (18.0-22.0)	**20.2** (18.2-23.1)	**40.4** (35.3-45.1)	**70.1** (61.8-78.8)	**94.6** (82.5-107)	2293
	03-04	**15.1** (14.1-16.1)	**15.1** (13.6-16.6)	**30.5** (28.1-34.0)	**55.4** (47.3-63.3)	**75.3** (69.0-81.8)	1896
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	669
	01-02	*	< LOD	< LOD	**17.0** (13.7-20.2)	**23.1** (17.7-41.2)	748
	03-04	**4.97** (4.45-5.55)	**4.57** (4.10-5.02)	**7.39** (6.35-8.63)	**12.7** (10.4-14.5)	**15.2** (13.1-21.3)	598
20 years and older	99-00	*	< LOD	< LOD	**54.7** (47.4-60.8)	**72.8** (66.0-88.9)	1261
	01-02	**23.3** (21.1-25.8)	**24.0** (21.4-26.8)	**44.6** (40.4-49.2)	**73.9** (66.2-83.0)	**100** (88.8-109)	1545
	03-04	**17.7** (16.5-19.0)	**17.6** (15.5-20.4)	**34.3** (30.0-38.8)	**59.6** (50.6-66.9)	**77.4** (72.3-87.7)	1298
Gender							
Males	99-00	*	< LOD	< LOD	**47.2** (<LOD-55.7)	**68.2** (55.7-83.8)	918
	01-02	**20.1** (17.9-22.6)	**20.5** (17.6-23.5)	**39.2** (32.2-46.0)	**69.2** (58.1-82.5)	**94.6** (77.8-109)	1066
	03-04	**14.9** (13.8-15.9)	**14.4** (12.9-15.8)	**29.6** (26.6-33.8)	**56.3** (45.3-62.3)	**75.8** (63.3-87.7)	947
Females	99-00	*	< LOD	< LOD	**53.7** (44.7-61.2)	**72.1** (61.2-88.9)	1012
	01-02	**19.7** (17.8-21.7)	**20.2** (18.2-23.1)	**41.8** (37.5-45.9)	**70.1** (63.4-78.5)	**93.9** (80.2-109)	1227
	03-04	**15.3** (14.0-16.8)	**15.8** (14.2-17.8)	**31.8** (28.3-36.6)	**54.6** (47.3-64.4)	**72.5** (68.4-80.9)	949
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	636
	01-02	*	< LOD	**18.6** (13.6-23.4)	**33.3** (26.5-44.2)	**51.8** (42.3-57.6)	559
	03-04	**7.06** (6.02-8.28)	**6.52** (5.20-7.60)	**12.3** (8.91-16.0)	**23.6** (18.9-28.3)	**29.2** (24.7-36.1)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	**72.6** (61.7-89.4)	**122** (86.5-185)	412
	01-02	**22.3** (19.3-25.6)	**22.0** (18.4-27.1)	**46.5** (38.0-55.6)	**91.5** (70.1-112)	**122** (91.5-169)	513
	03-04	**17.8** (14.9-21.3)	**15.9** (12.5-21.0)	**41.2** (30.6-57.3)	**86.5** (69.4-110)	**153** (94.6-191)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	**49.3** (41.4-55.8)	**70.1** (55.7-85.2)	727
	01-02	**21.5** (19.2-24.0)	**22.1** (19.6-24.9)	**43.0** (37.7-48.0)	**70.7** (62.3-79.7)	**96.1** (79.1-110)	1057
	03-04	**16.0** (14.5-17.7)	**15.8** (14.6-18.4)	**31.4** (28.2-36.6)	**55.1** (47.2-62.3)	**71.6** (64.0-75.8)	883

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 41.1, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5' and 2,3,3',4,4',6-Hexachlorobiphenyl (PCB 138 & 158) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**4.13**	0.65	9
		07-08	**4.81**	0.89	6
	20-39	05-06	**7.98**	1.5	12
		07-08	**8.74**	0.84	15
	40-59	05-06	**19.6**	2.5	12
		07-08	**20.7**	1.6	16
	60+	05-06	**32.6**	1.5	15
		07-08	**47.5**	3.9	23
Non-Hispanic White Female	12-19	05-06	**3.24**	0.3	10
		07-08	**3.53**	0.73	7
	20-39	05-06	**5.23**	0.28	16
		07-08	**7.85**	1.28	13
	40-59	05-06	**16.5**	1.2	13
		07-08	**21.5**	1.2	17
	60+	05-06	**33.5**	3.1	17
		07-08	**45.0**	3.3	21
Non-Hispanic Black Male	12-19	05-06	**4.83**	0.62	13
		07-08	**4.63**	0.64	6
	20-39	05-06	**7.69**	1.17	6
		07-08	**7.95**	0.77	6
	40-59	05-06	**20.9**	2.4	5
		07-08	**28.6**	4.5	6
	60+	05-06	**56.5**	7.5	5
		07-08	**68.2**	8	8
Non-Hispanic Black Female	12-19	05-06	**2.97**	0.19	14
		07-08	**3.25**	0.5	5
	20-39	05-06	**6.94**	0.87	7
		07-08	**7.16**	0.93	8
	40-59	05-06	**25.5**	2.5	7
		07-08	**28.2**	2.8	8
	60+	05-06	**81.1**	23.7	5
		07-08	**79.9**	7.1	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5' and 2,3,3',4,4',6-Hexachlorobiphenyl (PCB 138 & 158) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations† (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**2.68**	0.35	11
		07-08	**2.58**	0.55	6
	20-39	05-06	**4.46**	0.27	9
		07-08	**5.67**	0.55	9
	40-59	05-06	**9.75**	0.58	4
		07-08	**15.2**	2	6
	60+	05-06	**19.6**	3	4
		07-08	**23.9**	3.3	5
Mexican American Female	12-19	05-06	**1.92**	0.19	16
		07-08	**1.84**	0.53	5
	20-39	05-06	**3.22**	0.4	9
		07-08	**4.41**	0.22	8
	40-59	05-06	**12.5**	1	6
		07-08	**14.6**	1.9	6
	60+	05-06	**21.7**	2.3	3
		07-08	**25.6**	4	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5' and 2,3,3',4,4',6-Hexachlorobiphenyl (PCB 138 & 158) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.340 (.300-.370)	.460 (.390-.530)	1930
	01-02	.122 (.110-.135)	.120 (.110-.140)	.270 (.230-.290)	.460 (.410-.510)	.650 (.560-.700)	2293
	03-04	.092 (.086-.099)	.095 (.082-.105)	.206 (.180-.231)	.359 (.326-.392)	.477 (.450-.528)	1896
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	669
	01-02	*	< LOD	< LOD	.090 (.060-.110)	.110 (.090-.210)	748
	03-04	.025 (.023-.028)	.023 (.020-.027)	.037 (.030-.047)	.062 (.049-.074)	.079 (.067-.103)	598
20 years and older	99-00	*	< LOD	< LOD	.360 (.320-.390)	.490 (.400-.560)	1261
	01-02	.148 (.133-.163)	.150 (.140-.170)	.290 (.270-.320)	.510 (.450-.550)	.680 (.610-.720)	1545
	03-04	.111 (.103-.120)	.114 (.099-.128)	.232 (.204-.256)	.383 (.354-.416)	.506 (.467-.594)	1298
Gender							
Males	99-00	*	< LOD	< LOD	.320 (<LOD-.370)	.420 (.370-.530)	918
	01-02	.125 (.112-.140)	.130 (.110-.140)	.260 (.230-.290)	.460 (.370-.540)	.630 (.510-.710)	1066
	03-04	.092 (.085-.099)	.091 (.079-.103)	.198 (.172-.229)	.354 (.316-.379)	.474 (.389-.562)	947
Females	99-00	*	< LOD	< LOD	.340 (.300-.370)	.490 (.390-.540)	1012
	01-02	.119 (.107-.132)	.120 (.110-.150)	.270 (.230-.300)	.460 (.420-.500)	.660 (.590-.700)	1227
	03-04	.093 (.084-.102)	.098 (.085-.115)	.212 (.178-.244)	.373 (.325-.417)	.482 (.450-.568)	949
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	636
	01-02	*	< LOD	.110 (.090-.150)	.240 (.170-.330)	.350 (.270-.430)	559
	03-04	.043 (.036-.051)	.040 (.032-.049)	.080 (.068-.100)	.148 (.122-.203)	.239 (.147-.346)	427
Non-Hispanic blacks	99-00	*	< LOD	< LOD	.470 (.360-.670)	.830 (.530-1.22)	412
	01-02	.125 (.108-.146)	.130 (.090-.160)	.290 (.230-.350)	.560 (.420-.680)	.770 (.560-1.06)	513
	03-04	.101 (.084-.122)	.087 (.068-.113)	.239 (.186-.326)	.568 (.424-.811)	.965 (.698-1.09)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	.340 (.300-.370)	.440 (.370-.530)	727
	01-02	.133 (.119-.149)	.140 (.120-.160)	.280 (.250-.300)	.460 (.420-.530)	.650 (.550-.720)	1057
	03-04	.099 (.089-.109)	.104 (.091-.121)	.216 (.179-.252)	.355 (.320-.390)	.467 (.410-.520)	883

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5' and 2,3,3',4,4',6-Hexachlorobiphenyl (PCB 138 & 158) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.023**	0.003	9
		07-08	**.024**	0.004	6
	20-39	05-06	**.060**	0.013	12
		07-08	**.058**	0.006	15
	40-59	05-06	**.150**	0.022	12
		07-08	**.150**	0.01	16
	60+	05-06	**.221**	0.008	15
		07-08	**.303**	0.023	23
Non-Hispanic White Female	12-19	05-06	**.017**	0.002	10
		07-08	**.017**	0.004	7
	20-39	05-06	**.034**	0.002	16
		07-08	**.047**	0.009	13
	40-59	05-06	**.123**	0.011	13
		07-08	**.143**	0.009	17
	60+	05-06	**.242**	0.02	17
		07-08	**.302**	0.022	21
Non-Hispanic Black Male	12-19	05-06	**.024**	0.003	13
		07-08	**.022**	0.003	6
	20-39	05-06	**.046**	0.007	6
		07-08	**.045**	0.005	6
	40-59	05-06	**.133**	0.016	5
		07-08	**.183**	0.028	6
	60+	05-06	**.335**	0.042	5
		07-08	**.416**	0.054	8
Non-Hispanic Black Female	12-19	05-06	**.015**	0.001	14
		07-08	**.016**	0.003	5
	20-39	05-06	**.040**	0.005	7
		07-08	**.036**	0.005	8
	40-59	05-06	**.165**	0.019	7
		07-08	**.171**	0.02	8
	60+	05-06	**.541**	0.16	5
		07-08	**.477**	0.035	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5' and 2,3,3',4,4',6-Hexachlorobiphenyl (PCB 138 & 158) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.014**	0.002	11
		07-08	**.014**	0.003	6
	20-39	05-06	**.032**	0.003	9
		07-08	**.039**	0.004	9
	40-59	05-06	**.079**	0.004	4
		07-08	**.108**	0.015	6
	60+	05-06	**.142**	0.023	4
		07-08	**.174**	0.025	5
Mexican American Female	12-19	05-06	**.010**	0.001	16
		07-08	**.009**	0.002	5
	20-39	05-06	**.022**	0.003	9
		07-08	**.026**	0.001	8
	40-59	05-06	**.091**	0.007	6
		07-08	**.099**	0.014	6
	60+	05-06	**.162**	0.011	3
		07-08	**.177**	0.029	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**13.3** (<LOD-16.1)	1923
	01-02	*	< LOD	< LOD	**11.0** (<LOD-12.5)	**15.4** (13.6-16.9)	2299
	03-04	**2.17** (2.02-2.32)	**2.21** (2.03-2.54)	**4.80** (4.38-5.21)	**8.27** (7.10-9.50)	**11.7** (10.2-13.3)	1894
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**.620** (.562-.685)	**.600** (.520-.690)	**1.02** (.870-1.20)	**1.67** (1.50-1.80)	**2.30** (1.79-2.97)	594
20 years and older	99-00	*	< LOD	< LOD	< LOD	**14.3** (<LOD-17.1)	1256
	01-02	*	< LOD	< LOD	**11.8** (10.7-13.5)	**16.5** (14.6-18.1)	1541
	03-04	**2.60** (2.41-2.79)	**2.60** (2.40-2.90)	**5.27** (4.82-5.88)	**8.81** (8.00-9.80)	**12.7** (10.7-15.2)	1300
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**13.1** (<LOD-17.1)	915
	01-02	*	< LOD	< LOD	**11.0** (<LOD-13.0)	**15.4** (13.0-17.2)	1069
	03-04	**2.16** (1.97-2.37)	**2.10** (1.90-2.50)	**4.80** (4.09-5.30)	**8.30** (6.90-10.1)	**12.4** (10.0-14.9)	945
Females	99-00	*	< LOD	< LOD	< LOD	**13.9** (<LOD-16.3)	1008
	01-02	*	< LOD	< LOD	**11.0** (<LOD-12.2)	**15.2** (13.2-17.3)	1230
	03-04	**2.17** (2.02-2.34)	**2.35** (2.04-2.63)	**4.83** (4.47-5.37)	**8.00** (7.04-9.10)	**11.3** (9.95-13.2)	949
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	633
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	**.940** (.826-1.07)	**.820** (.780-1.00)	**1.74** (1.21-2.60)	**3.31** (2.80-4.00)	**4.60** (3.47-6.00)	425
Non-Hispanic blacks	99-00	*	< LOD	< LOD	**17.0** (13.4-22.9)	**29.8** (20.2-42.2)	412
	01-02	*	< LOD	< LOD	**16.6** (12.8-21.4)	**23.8** (16.9-31.6)	515
	03-04	**2.81** (2.37-3.34)	**2.60** (2.05-3.50)	**7.10** (4.97-8.90)	**16.8** (11.5-23.2)	**28.5** (17.8-41.6)	463
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	723
	01-02	*	< LOD	< LOD	**10.8** (<LOD-12.0)	**15.2** (12.8-16.8)	1054
	03-04	**2.25** (2.06-2.45)	**2.35** (2.10-2.60)	**4.82** (4.37-5.41)	**7.76** (6.94-8.70)	**10.5** (9.51-11.3)	885

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.4, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.633**	0.079	9
		07-08	*	*	6
	20-39	05-06	**1.41**	0.24	12
		07-08	**1.21**	0.11	15
	40-59	05-06	**3.69**	0.22	12
		07-08	**3.32**	0.21	16
	60+	05-06	**7.11**	0.38	15
		07-08	**7.67**	0.73	23
Non-Hispanic White Female	12-19	05-06	**.514**	0.05	10
		07-08	*	*	7
	20-39	05-06	**.908**	0.06	16
		07-08	**1.09**	0.25	13
	40-59	05-06	**3.13**	0.19	13
		07-08	**3.20**	0.16	17
	60+	05-06	**7.04**	0.65	17
		07-08	**7.10**	0.53	21
Non-Hispanic Black Male	12-19	05-06	**.890**	0.147	13
		07-08	**.694**	0.182	6
	20-39	05-06	**1.73**	0.33	6
		07-08	**1.26**	0.15	6
	40-59	05-06	**5.46**	0.74	5
		07-08	**5.79**	0.97	6
	60+	05-06	**14.3**	1.5	5
		07-08	**14.7**	2	8
Non-Hispanic Black Female	12-19	05-06	**.517**	0.047	14
		07-08	*	*	5
	20-39	05-06	**1.36**	0.19	7
		07-08	**1.17**	0.13	8
	40-59	05-06	**5.30**	0.61	7
		07-08	**4.78**	0.53	8
	60+	05-06	**21.0**	5.7	5
		07-08	**15.5**	1.5	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.358**	0.042	11
		07-08	*	*	6
	20-39	05-06	**.828**	0.059	9
		07-08	**.841**	0.079	9
	40-59	05-06	**1.94**	0.1	4
		07-08	**3.10**	0.43	6
	60+	05-06	**4.17**	0.84	4
		07-08	**4.91**	0.43	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.538**	0.075	9
		07-08	**.610**	0.092	8
	40-59	05-06	**2.21**	0.19	6
		07-08	**2.49**	0.31	6
	60+	05-06	**4.29**	0.14	3
		07-08	**4.67**	0.82	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	.080 (<LOD-.110)	1923
	01-02	*	< LOD	< LOD	.070 (<LOD-.080)	.110 (.090-.120)	2299
	03-04	.013 (.012-.014)	.014 (.013-.016)	.032 (.028-.035)	.054 (.047-.062)	.077 (.069-.090)	1894
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	.003 (.003-.003)	.003 (.003-.003)	.006 (.004-.007)	.008 (.007-.010)	.011 (.009-.014)	594
20 years and older	99-00	*	< LOD	< LOD	< LOD	.090 (<LOD-.120)	1256
	01-02	*	< LOD	< LOD	.080 (.070-.090)	.110 (.100-.120)	1541
	03-04	.016 (.015-.018)	.017 (.015-.020)	.035 (.032-.038)	.058 (.053-.064)	.084 (.073-.099)	1300
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	.080 (<LOD-.110)	915
	01-02	*	< LOD	< LOD	.070 (<LOD-.090)	.100 (.090-.120)	1069
	03-04	.013 (.012-.015)	.014 (.012-.016)	.032 (.027-.036)	.054 (.045-.063)	.074 (.064-.096)	945
Females	99-00	*	< LOD	< LOD	< LOD	.090 (<LOD-.110)	1008
	01-02	*	< LOD	< LOD	.070 (<LOD-.080)	.110 (.090-.120)	1230
	03-04	.013 (.012-.014)	.015 (.013-.016)	.032 (.028-.036)	.054 (.047-.065)	.079 (.069-.088)	949
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	633
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	.006 (.005-.007)	.005 (.004-.007)	.012 (.008-.016)	.024 (.017-.033)	.034 (.024-.046)	425
Non-Hispanic blacks	99-00	*	< LOD	< LOD	.110 (.080-.130)	.180 (.120-.270)	412
	01-02	*	< LOD	< LOD	.100 (.080-.130)	.150 (.110-.200)	515
	03-04	.016 (.013-.019)	.016 (.012-.019)	.041 (.030-.061)	.100 (.069-.167)	.180 (.126-.224)	463
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	723
	01-02	*	< LOD	< LOD	.070 (<LOD-.080)	.100 (.090-.120)	1054
	03-04	.014 (.013-.015)	.015 (.013-.018)	.033 (.028-.036)	.053 (.047-.057)	.069 (.064-.075)	885

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.004**	0	9
		07-08	*	*	6
	20-39	05-06	**.010**	0.002	12
		07-08	**.008**	0.001	15
	40-59	05-06	**.028**	0.002	12
		07-08	**.024**	0.001	16
	60+	05-06	**.048**	0.002	15
		07-08	**.049**	0.004	23
Non-Hispanic White Female	12-19	05-06	**.003**	0	10
		07-08	*	*	7
	20-39	05-06	**.006**	0	16
		07-08	**.007**	0.002	13
	40-59	05-06	**.023**	0.002	13
		07-08	**.021**	0.001	17
	60+	05-06	**.051**	0.004	17
		07-08	**.048**	0.003	21
Non-Hispanic Black Male	12-19	05-06	**.004**	0.001	13
		07-08	**.003**	0.001	6
	20-39	05-06	**.010**	0.002	6
		07-08	**.007**	0.001	6
	40-59	05-06	**.035**	0.005	5
		07-08	**.037**	0.006	6
	60+	05-06	**.086**	0.009	5
		07-08	**.090**	0.013	8
Non-Hispanic Black Female	12-19	05-06	**.003**	0	14
		07-08	*	*	5
	20-39	05-06	**.008**	0.001	7
		07-08	**.006**	0.001	8
	40-59	05-06	**.034**	0.004	7
		07-08	**.029**	0.004	8
	60+	05-06	**.140**	0.038	5
		07-08	**.093**	0.009	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.002**	0	11
		07-08	*	*	6
	20-39	05-06	**.006**	0.001	9
		07-08	**.006**	0.001	9
	40-59	05-06	**.016**	0.001	4
		07-08	**.022**	0.003	6
	60+	05-06	**.030**	0.006	4
		07-08	**.035**	0.002	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.004**	0.001	9
		07-08	**.004**	0.001	8
	40-59	05-06	**.016**	0.001	6
		07-08	**.017**	0.002	6
	60+	05-06	**.033**	0.003	3
		07-08	**.032**	0.006	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2307
	03-04	**.598** (.556-.642)	**.600** (.550-.680)	**.900** (.830-1.00)	**1.45** (1.28-1.60)	**1.90** (1.68-2.20)	1873
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**.650** (.605-.698)	**.640** (.600-.700)	**1.00** (.900-1.10)	**1.70** (1.40-2.15)	**2.40** (1.80-2.98)	590
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	**.590** (.546-.638)	**.600** (.540-.680)	**.900** (.800-1.00)	**1.40** (1.20-1.60)	**1.89** (1.60-2.17)	1283
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1075
	03-04	**.623** (.578-.671)	**.650** (.600-.700)	**.960** (.880-1.06)	**1.50** (1.30-1.66)	**1.90** (1.60-2.40)	930
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	**.575** (.521-.634)	**.600** (.500-.620)	**.890** (.800-.950)	**1.40** (1.20-1.67)	**1.90** (1.69-2.20)	943
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	**.549** (.496-.608)	**.530** (.500-.600)	**.900** (.700-1.04)	**1.28** (1.03-1.60)	**1.60** (1.26-2.30)	408
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**.760** (.678-.853)	**.800** (.700-.880)	**1.20** (1.00-1.58)	**1.98** (1.70-2.59)	**2.90** (2.20-4.20)	463
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	**.574** (.524-.628)	**.600** (.510-.670)	**.880** (.800-.950)	**1.33** (1.19-1.50)	**1.80** (1.50-2.02)	881

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	**.373**	0.106	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2307
	03-04	**.004** (.003-.004)	**.004** (.004-.004)	**.006** (.005-.006)	**.009** (.008-.009)	**.011** (.010-.013)	1873
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**.003** (.003-.004)	**.003** (.003-.003)	**.005** (.004-.006)	**.008** (.007-.009)	**.012** (.008-.016)	590
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	**.004** (.003-.004)	**.004** (.004-.004)	**.006** (.005-.006)	**.009** (.007-.010)	**.011** (.010-.013)	1283
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1075
	03-04	**.004** (.004-.004)	**.004** (.004-.004)	**.006** (.005-.007)	**.009** (.008-.010)	**.011** (.010-.013)	930
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	**.003** (.003-.004)	**.004** (.003-.004)	**.005** (.005-.006)	**.008** (.007-.010)	**.011** (.009-.013)	943
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	**.003** (.003-.004)	**.003** (.003-.004)	**.005** (.004-.006)	**.007** (.006-.008)	**.009** (.007-.014)	408
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**.004** (.004-.005)	**.004** (.004-.005)	**.007** (.006-.008)	**.012** (.010-.013)	**.019** (.013-.022)	463
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	**.004** (.003-.004)	**.004** (.003-.004)	**.005** (.005-.006)	**.008** (.007-.009)	**.010** (.009-.012)	881

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	*	*	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	**.002**	0.001	5
		07-08	*	*	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2307
	03-04	*	< LOD	**.420** (.400-.500)	**.700** (.640-.820)	**1.00** (.840-1.30)	1870
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	**.400** (<LOD-.470)	**.700** (.510-.820)	**.880** (.700-1.10)	588
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	*	< LOD	**.440** (.400-.500)	**.720** (.650-.850)	**1.02** (.850-1.40)	1282
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1075
	03-04	*	< LOD	**.430** (.400-.500)	**.720** (.620-.900)	**1.10** (.830-1.50)	931
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	*	< LOD	**.410** (.400-.500)	**.700** (.600-.820)	**1.00** (.830-1.20)	939
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	*	< LOD	< LOD	**.500** (.400-.700)	**.700** (.530-.700)	426
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	*	**.400** (<LOD-.500)	**.700** (.500-.900)	**1.30** (.900-1.90)	**2.20** (1.40-4.55)	461
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	*	< LOD	**.400** (<LOD-.450)	**.650** (.590-.700)	**.850** (.750-1.00)	864

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	**.439**	0.048	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	**.468**	0.07	5
		07-08	**.580**	0.148	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2307
	03-04	*	< LOD	.003 (.002-.003)	.004 (.004-.005)	.006 (.005-.008)	1870
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	.002 (<LOD-.002)	.003 (.003-.004)	.004 (.003-.006)	588
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	*	< LOD	.003 (.003-.003)	.004 (.004-.006)	.007 (.005-.010)	1282
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1075
	03-04	*	< LOD	.003 (.003-.003)	.005 (.004-.006)	.006 (.005-.010)	931
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	*	< LOD	.003 (.002-.003)	.004 (.004-.005)	.006 (.005-.008)	939
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	*	< LOD	< LOD	.003 (.003-.004)	.004 (.003-.005)	426
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	*	.002 (<LOD-.003)	.004 (.003-.006)	.008 (.006-.010)	.013 (.008-.028)	461
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	*	< LOD	.003 (<LOD-.003)	.004 (.004-.004)	.005 (.004-.006)	864

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	*	*	12
		07-08	*	*	15
	40-59	05-06	*	*	12
		07-08	*	*	16
	60+	05-06	*	*	15
		07-08	*	*	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	*	*	13
		07-08	*	*	17
	60+	05-06	*	*	17
		07-08	*	*	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	*	*	6
		07-08	*	*	6
	40-59	05-06	*	*	5
		07-08	*	*	6
	60+	05-06	**.003**	0	5
		07-08	*	*	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	*	*	7
		07-08	*	*	8
	60+	05-06	**.003**	0	5
		07-08	**.004**	0.001	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	*	*	4
		07-08	*	*	6
	60+	05-06	*	*	4
		07-08	*	*	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	*	*	6
		07-08	*	*	6
	60+	05-06	*	*	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**77.8** (70.2-87.3)	**114** (93.0-133)	1926
	01-02	**27.2** (24.7-30.1)	**30.1** (26.1-34.3)	**57.8** (52.1-63.2)	**94.7** (86.5-104)	**126** (109-142)	2306
	03-04	**19.8** (18.8-20.9)	**20.8** (18.4-22.2)	**43.3** (39.1-46.9)	**71.8** (64.4-82.8)	**97.1** (88.8-111)	1896
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	668
	01-02	*	< LOD	**12.5** (11.1-14.1)	**21.2** (17.4-26.7)	**31.9** (23.1-64.7)	757
	03-04	**5.86** (5.25-6.55)	**5.40** (4.70-6.21)	**8.50** (7.80-9.85)	**15.7** (12.9-18.4)	**20.7** (16.9-28.3)	596
20 years and older	99-00	*	< LOD	< LOD	**83.2** (75.9-91.8)	**122** (100-139)	1258
	01-02	**32.6** (29.5-36.1)	**35.1** (31.1-39.0)	**62.8** (57.6-68.0)	**99.5** (90.7-110)	**132** (116-146)	1549
	03-04	**23.7** (22.3-25.1)	**24.2** (21.8-27.4)	**47.1** (43.3-50.5)	**77.5** (68.0-87.9)	**101** (92.9-119)	1300
Gender							
Males	99-00	*	< LOD	< LOD	**75.0** (66.7-86.2)	**111** (87.7-128)	917
	01-02	**28.5** (25.5-32.0)	**31.5** (26.7-35.2)	**57.7** (48.3-66.2)	**97.5** (82.1-110)	**126** (104-150)	1074
	03-04	**20.0** (18.7-21.3)	**19.7** (17.7-21.2)	**42.9** (37.4-47.6)	**72.7** (60.4-88.8)	**107** (86.8-122)	947
Females	99-00	*	< LOD	< LOD	**79.0** (70.2-92.0)	**119** (91.4-142)	1009
	01-02	**26.1** (23.6-28.8)	**29.0** (25.1-33.4)	**57.9** (52.1-62.9)	**94.3** (87.8-98.2)	**128** (105-145)	1232
	03-04	**19.7** (18.4-21.1)	**21.9** (19.0-24.1)	**43.8** (39.4-47.7)	**70.9** (63.0-81.5)	**93.3** (83.8-100)	949
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	**67.5** (59.5-71.8)	634
	01-02	**12.5** (10.8-14.4)	**11.1** (<LOD-13.3)	**24.5** (18.2-33.9)	**47.4** (36.2-60.3)	**66.7** (55.2-72.3)	567
	03-04	**8.75** (7.39-10.4)	**7.86** (6.17-9.40)	**15.6** (11.4-22.2)	**30.3** (25.2-34.9)	**37.8** (31.1-45.2)	425
Non-Hispanic blacks	99-00	*	< LOD	**59.4** (<LOD-82.0)	**121** (90.3-159)	**176** (130-287)	412
	01-02	**30.0** (26.2-34.4)	**31.0** (25.8-36.4)	**65.1** (54.2-82.7)	**127** (97.1-152)	**170** (126-246)	515
	03-04	**22.8** (19.1-27.2)	**20.9** (17.0-28.7)	**54.1** (37.3-69.2)	**126** (92.9-158)	**194** (126-294)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	**76.4** (69.3-83.9)	**102** (87.8-127)	725
	01-02	**29.9** (26.8-33.4)	**33.0** (28.7-37.1)	**61.2** (55.8-66.7)	**96.3** (86.5-109)	**126** (104-142)	1061
	03-04	**21.3** (19.7-23.1)	**22.2** (20.4-25.9)	**44.9** (39.7-49.5)	**70.9** (60.4-82.1)	**91.3** (82.1-103)	885

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 55.6, 10.5, and 1.1, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**6.27**	1.11	9
		07-08	**5.80**	1.04	6
	20-39	05-06	**13.2**	2.6	12
		07-08	**11.0**	1	15
	40-59	05-06	**36.4**	5.1	12
		07-08	**28.2**	1.6	16
	60+	05-06	**60.4**	2.7	15
		07-08	**63.9**	4.8	23
Non-Hispanic White Female	12-19	05-06	**4.59**	0.49	10
		07-08	**4.34**	0.99	7
	20-39	05-06	**8.47**	0.59	16
		07-08	**9.36**	1.4	13
	40-59	05-06	**27.8**	1.4	13
		07-08	**27.7**	1.3	17
	60+	05-06	**58.0**	5.1	17
		07-08	**56.4**	3.7	21
Non-Hispanic Black Male	12-19	05-06	**7.42**	1	13
		07-08	**5.74**	0.81	6
	20-39	05-06	**13.8**	2.1	6
		07-08	**10.3**	0.9	6
	40-59	05-06	**38.8**	4.2	5
		07-08	**41.0**	5.5	6
	60+	05-06	**103**	13	5
		07-08	**94.5**	11	8
Non-Hispanic Black Female	12-19	05-06	**4.20**	0.29	14
		07-08	**3.76**	0.52	5
	20-39	05-06	**10.8**	1.4	7
		07-08	**8.99**	1.17	8
	40-59	05-06	**41.2**	4	7
		07-08	**35.7**	3.2	8
	60+	05-06	**130**	33	5
		07-08	**102**	8	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**3.70**	0.45	11
		07-08	**3.32**	0.69	6
	20-39	05-06	**6.93**	0.31	9
		07-08	**6.85**	0.64	9
	40-59	05-06	**16.5**	0.8	4
		07-08	**22.4**	2.5	6
	60+	05-06	**37.3**	6.8	4
		07-08	**39.5**	4.1	5
Mexican American Female	12-19	05-06	**2.83**	0.2	16
		07-08	****2.88**	1.29	5
	20-39	05-06	**4.75**	0.67	9
		07-08	**5.58**	0.41	8
	40-59	05-06	**19.1**	1.5	6
		07-08	**20.9**	2.8	6
	60+	05-06	**36.2**	1.6	3
		07-08	**40.9**	8.5	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.530 (.490-.560)	.750 (.610-.840)	1926
	01-02	.167 (.151-.185)	.190 (.170-.210)	.380 (.340-.410)	.620 (.560-.690)	.860 (.760-.950)	2306
	03-04	.121 (.114-.128)	.135 (.120-.144)	.283 (.258-.310)	.477 (.439-.518)	.624 (.575-.733)	1896
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	668
	01-02	*	< LOD	.060 (.050-.070)	.110 (.080-.140)	.150 (.110-.310)	757
	03-04	.030 (.027-.033)	.027 (.025-.031)	.044 (.039-.055)	.076 (.062-.098)	.101 (.079-.129)	596
20 years and older	99-00	*	< LOD	< LOD	.560 (.510-.610)	.790 (.670-.880)	1258
	01-02	.206 (.187-.228)	.220 (.200-.250)	.410 (.380-.450)	.670 (.600-.740)	.900 (.820-1.04)	1549
	03-04	.148 (.139-.158)	.156 (.141-.179)	.313 (.283-.339)	.512 (.452-.563)	.671 (.603-.756)	1300
Gender							
Males	99-00	*	< LOD	< LOD	.530 (.470-.560)	.690 (.580-.850)	917
	01-02	.177 (.159-.198)	.200 (.170-.220)	.380 (.340-.430)	.610 (.510-.730)	.850 (.700-1.04)	1074
	03-04	.123 (.115-.133)	.127 (.111-.146)	.277 (.253-.310)	.474 (.413-.522)	.608 (.533-.794)	947
Females	99-00	*	< LOD	< LOD	.530 (.480-.590)	.770 (.610-.880)	1009
	01-02	.158 (.142-.175)	.180 (.150-.210)	.380 (.340-.400)	.630 (.570-.710)	.860 (.760-.950)	1232
	03-04	.119 (.110-.128)	.138 (.113-.149)	.291 (.253-.319)	.492 (.439-.541)	.624 (.578-.689)	949
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	.470 (.380-.540)	634
	01-02	.075 (.063-.089)	.060 (<LOD-.080)	.150 (.120-.210)	.330 (.270-.420)	.470 (.380-.550)	567
	03-04	.053 (.044-.064)	.047 (.038-.057)	.100 (.078-.144)	.205 (.164-.241)	.323 (.213-.435)	425
Non-Hispanic blacks	99-00	*	< LOD	.370 (<LOD-.510)	.750 (.620-.890)	1.27 (.820-1.64)	412
	01-02	.169 (.146-.195)	.180 (.140-.200)	.390 (.330-.490)	.780 (.580-.950)	1.05 (.830-1.43)	515
	03-04	.129 (.108-.156)	.126 (.098-.149)	.330 (.236-.425)	.734 (.562-1.06)	1.26 (.892-1.60)	464
Non-Hispanic whites	99-00	*	< LOD	< LOD	.520 (.480-.560)	.740 (.580-.850)	725
	01-02	.185 (.165-.207)	.210 (.180-.230)	.390 (.370-.430)	.640 (.570-.720)	.840 (.740-.990)	1061
	03-04	.131 (.121-.143)	.144 (.127-.170)	.295 (.268-.329)	.474 (.412-.518)	.600 (.519-.689)	885

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.034**	0.006	9
		07-08	**.028**	0.005	6
	20-39	05-06	**.099**	0.023	12
		07-08	**.074**	0.008	15
	40-59	05-06	**.279**	0.045	12
		07-08	**.205**	0.011	16
	60+	05-06	**.409**	0.015	15
		07-08	**.407**	0.028	23
Non-Hispanic White Female	12-19	05-06	**.025**	0.003	10
		07-08	**.021**	0.005	7
	20-39	05-06	**.055**	0.004	16
		07-08	**.057**	0.009	13
	40-59	05-06	**.207**	0.016	13
		07-08	**.184**	0.01	17
	60+	05-06	**.420**	0.033	17
		07-08	**.378**	0.024	21
Non-Hispanic Black Male	12-19	05-06	**.037**	0.005	13
		07-08	**.027**	0.003	6
	20-39	05-06	**.082**	0.013	6
		07-08	**.058**	0.006	6
	40-59	05-06	**.247**	0.027	5
		07-08	**.263**	0.037	6
	60+	05-06	**.614**	0.073	5
		07-08	**.576**	0.073	8
Non-Hispanic Black Female	12-19	05-06	**.021**	0.002	14
		07-08	**.018**	0.003	5
	20-39	05-06	**.062**	0.009	7
		07-08	**.045**	0.006	8
	40-59	05-06	**.264**	0.029	7
		07-08	**.216**	0.023	8
	60+	05-06	**.865**	0.218	5
		07-08	**.614**	0.045	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.020**	0.002	11
		07-08	**.018**	0.004	6
	20-39	05-06	**.049**	0.003	9
		07-08	**.047**	0.005	9
	40-59	05-06	**.134**	0.01	4
		07-08	**.160**	0.02	6
	60+	05-06	**.268**	0.045	4
		07-08	**.281**	0.022	5
Mexican American Female	12-19	05-06	**.015**	0.001	16
		07-08	*	*	5
	20-39	05-06	**.032**	0.005	9
		07-08	**.033**	0.003	8
	40-59	05-06	**.140**	0.01	6
		07-08	**.141**	0.018	6
	60+	05-06	**.274**	0.023	3
		07-08	**.283**	0.061	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**23.6** (22.0-25.4)	**30.9** (28.1-35.1)	1798
	01-02	*	< LOD	**17.5** (15.7-19.3)	**26.7** (24.9-29.0)	**35.0** (32.4-37.3)	2301
	03-04	**5.46** (5.22-5.71)	**6.30** (5.96-7.10)	**12.9** (12.3-13.9)	**21.7** (19.2-23.5)	**28.2** (25.8-29.8)	1888
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	645
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	**1.12** (.974-1.30)	**1.12** (1.00-1.30)	**1.90** (1.70-2.50)	**4.00** (3.53-4.37)	**5.60** (4.35-6.69)	592
20 years and older	99-00	*	< LOD	< LOD	**24.9** (23.3-26.4)	**33.9** (29.6-37.5)	1153
	01-02	**10.5** (<LOD-11.3)	**11.1** (<LOD-12.2)	**19.1** (17.3-20.9)	**28.4** (26.2-30.9)	**36.8** (33.4-39.4)	1545
	03-04	**6.86** (6.48-7.26)	**7.83** (6.87-8.70)	**14.2** (13.1-14.9)	**22.7** (20.7-24.9)	**29.5** (26.7-32.2)	1296
Gender							
Males	99-00	*	< LOD	< LOD	**24.1** (22.0-27.0)	**32.6** (28.1-37.0)	863
	01-02	*	**10.9** (<LOD-11.9)	**18.4** (16.3-20.9)	**28.1** (24.7-31.9)	**36.1** (32.1-38.3)	1073
	03-04	**5.81** (5.43-6.22)	**6.40** (5.61-7.68)	**13.8** (12.4-14.4)	**23.4** (20.4-25.6)	**29.4** (26.0-32.7)	942
Females	99-00	*	< LOD	< LOD	**22.4** (20.7-25.4)	**29.7** (25.8-36.3)	935
	01-02	*	< LOD	**16.4** (15.0-18.0)	**25.9** (24.0-28.4)	**34.0** (30.6-38.4)	1228
	03-04	**5.14** (4.82-5.48)	**6.28** (5.81-7.18)	**12.5** (11.5-13.8)	**19.2** (17.9-21.7)	**26.1** (24.0-29.8)	946
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	**23.2** (20.3-26.5)	606
	01-02	*	< LOD	< LOD	**15.4** (11.4-18.7)	**21.1** (17.1-25.1)	565
	03-04	**2.34** (1.91-2.86)	**2.20** (1.54-3.20)	**4.91** (3.40-8.17)	**10.4** (8.40-13.5)	**13.9** (10.8-20.1)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	**30.9** (23.1-36.3)	**41.9** (33.7-59.1)	382
	01-02	*	< LOD	**19.0** (14.9-23.2)	**32.5** (25.5-43.9)	**44.4** (32.5-61.7)	514
	03-04	**5.42** (4.63-6.35)	**6.28** (5.11-7.75)	**14.3** (10.7-18.3)	**31.7** (23.1-40.7)	**48.5** (32.1-66.1)	461
Non-Hispanic whites	99-00	*	< LOD	< LOD	**24.1** (22.1-25.9)	**31.0** (26.8-37.3)	658
	01-02	*	**10.9** (<LOD-12.0)	**18.4** (16.8-20.4)	**27.7** (25.4-30.2)	**35.0** (32.3-38.1)	1059
	03-04	**6.13** (5.74-6.56)	**7.40** (6.40-8.18)	**13.8** (12.6-14.6)	**21.7** (19.2-24.2)	**27.0** (24.9-29.5)	882

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 17.2, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**1.41**	0.32	9
		07-08	**1.52**	0.29	6
	20-39	05-06	**3.93**	0.94	12
		07-08	**3.36**	0.28	15
	40-59	05-06	**13.7**	2.6	12
		07-08	**10.3**	0.4	16
	60+	05-06	**20.5**	1.3	15
		07-08	**22.4**	1.4	23
Non-Hispanic White Female	12-19	05-06	**.896**	0.155	10
		07-08	**1.14**	0.32	7
	20-39	05-06	**2.28**	0.35	16
		07-08	**2.75**	0.41	13
	40-59	05-06	**8.44**	0.46	13
		07-08	**9.09**	0.45	17
	60+	05-06	**17.2**	1.4	17
		07-08	**18.1**	0.9	21
Non-Hispanic Black Male	12-19	05-06	**1.44**	0.28	13
		07-08	**1.12**	0.28	6
	20-39	05-06	**3.71**	0.52	6
		07-08	**2.82**	0.3	6
	40-59	05-06	**11.4**	1	5
		07-08	**13.1**	1.5	6
	60+	05-06	**30.9**	3.4	5
		07-08	**30.6**	3.4	8
Non-Hispanic Black Female	12-19	05-06	**.589**	0.099	14
		07-08	**.828**	0.105	5
	20-39	05-06	**2.15**	0.52	7
		07-08	**2.29**	0.35	8
	40-59	05-06	**11.1**	1.2	7
		07-08	**10.8**	1	8
	60+	05-06	**33.3**	6.7	5
		07-08	**29.0**	1.7	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.575**	0.138	11
		07-08	**.891**	0.17	6
	20-39	05-06	**2.01**	0.11	9
		07-08	**2.19**	0.24	9
	40-59	05-06	**6.41**	0.43	4
		07-08	**8.71**	0.91	6
	60+	05-06	**14.0**	3.2	4
		07-08	**16.1**	1.9	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**1.39**	0.21	9
		07-08	**1.62**	0.11	8
	40-59	05-06	**5.93**	0.46	6
		07-08	**7.50**	1.08	6
	60+	05-06	**11.7**	0.1	3
		07-08	**13.5**	2.5	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.160 (.140-.180)	.210 (.200-.230)	1798
	01-02	*	< LOD	.110 (.110-.120)	.180 (.170-.200)	.250 (.210-.270)	2301
	03-04	.033 (.032-.035)	.041 (.037-.045)	.087 (.080-.092)	.144 (.134-.149)	.188 (.173-.202)	1888
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	645
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	.006 (.005-.006)	.006 (.005-.007)	.010 (.009-.012)	.020 (.017-.022)	.029 (.022-.033)	592
20 years and older	99-00	*	< LOD	< LOD	.170 (.150-.190)	.220 (.200-.250)	1153
	01-02	.067 (<LOD-.072)	.070 (<LOD-.080)	.120 (.110-.130)	.200 (.180-.210)	.250 (.230-.290)	1545
	03-04	.043 (.040-.046)	.051 (.045-.054)	.093 (.089-.099)	.149 (.141-.160)	.199 (.180-.223)	1296
Gender							
Males	99-00	*	< LOD	< LOD	.170 (.140-.200)	.220 (.200-.250)	863
	01-02	*	.070 (<LOD-.080)	.120 (.110-.130)	.190 (.170-.210)	.250 (.210-.280)	1073
	03-04	.036 (.033-.039)	.043 (.036-.051)	.089 (.080-.093)	.148 (.132-.164)	.200 (.173-.225)	942
Females	99-00	*	< LOD	< LOD	.150 (.130-.170)	.210 (.190-.230)	935
	01-02	*	< LOD	.110 (.100-.120)	.180 (.160-.200)	.250 (.210-.280)	1228
	03-04	.031 (.029-.033)	.040 (.034-.044)	.083 (.075-.092)	.140 (.121-.149)	.176 (.160-.194)	946
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	.170 (.130-.190)	606
	01-02	*	< LOD	< LOD	.110 (.080-.130)	.150 (.120-.190)	565
	03-04	.014 (.012-.018)	.015 (.010-.018)	.032 (.025-.047)	.073 (.054-.113)	.119 (.078-.134)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	.190 (.150-.210)	.260 (.190-.370)	382
	01-02	*	< LOD	.110 (.090-.140)	.210 (.150-.270)	.290 (.210-.390)	514
	03-04	.031 (.026-.037)	.038 (.027-.044)	.087 (.069-.117)	.210 (.136-.280)	.338 (.221-.380)	461
Non-Hispanic whites	99-00	*	< LOD	< LOD	.160 (.140-.200)	.210 (.200-.240)	658
	01-02	*	.070 (<LOD-.080)	.120 (.110-.130)	.190 (.170-.210)	.250 (.210-.280)	1059
	03-04	.038 (.035-.041)	.046 (.042-.052)	.091 (.083-.096)	.145 (.132-.151)	.180 (.164-.207)	882

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.008**	0.002	9
		07-08	**.007**	0.001	6
	20-39	05-06	**.030**	0.008	12
		07-08	**.022**	0.002	15
	40-59	05-06	**.105**	0.022	12
		07-08	**.075**	0.003	16
	60+	05-06	**.139**	0.008	15
		07-08	**.143**	0.008	23
Non-Hispanic White Female	12-19	05-06	**.005**	0.001	10
		07-08	**.006**	0.002	7
	20-39	05-06	**.015**	0.002	16
		07-08	**.017**	0.003	13
	40-59	05-06	**.063**	0.005	13
		07-08	**.060**	0.003	17
	60+	05-06	**.125**	0.009	17
		07-08	**.122**	0.006	21
Non-Hispanic Black Male	12-19	05-06	**.007**	0.001	13
		07-08	**.005**	0.001	6
	20-39	05-06	**.022**	0.003	6
		07-08	**.016**	0.002	6
	40-59	05-06	**.072**	0.007	5
		07-08	**.084**	0.009	6
	60+	05-06	**.185**	0.021	5
		07-08	**.186**	0.022	8
Non-Hispanic Black Female	12-19	05-06	**.003**	0	14
		07-08	**.004**	0.001	5
	20-39	05-06	**.012**	0.003	7
		07-08	**.011**	0.002	8
	40-59	05-06	**.071**	0.008	7
		07-08	**.066**	0.007	8
	60+	05-06	**.222**	0.044	5
		07-08	**.175**	0.011	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.003**	0.001	11
		07-08	**.005**	0.001	6
	20-39	05-06	**.014**	0.001	9
		07-08	**.015**	0.002	9
	40-59	05-06	**.052**	0.005	4
		07-08	**.062**	0.007	6
	60+	05-06	**.100**	0.021	4
		07-08	**.115**	0.01	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.009**	0.001	9
		07-08	**.010**	0.001	8
	40-59	05-06	**.043**	0.003	6
		07-08	**.050**	0.007	6
	60+	05-06	**.089**	0.009	3
		07-08	**.094**	0.018	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1901
	01-02	*	< LOD	< LOD	< LOD	< LOD	2199
	03-04	**.647** (.606-.691)	**.900** (.800-1.00)	**1.80** (1.69-1.90)	**2.98** (2.70-3.30)	**4.16** (3.65-4.55)	1878
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	660
	01-02	*	< LOD	< LOD	< LOD	< LOD	679
	03-04	*	< LOD	< LOD	**.610** (.460-.840)	**1.10** (.700-1.43)	585
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1241
	01-02	*	< LOD	< LOD	< LOD	< LOD	1520
	03-04	**.805** (.746-.869)	**1.08** (1.00-1.16)	**1.95** (1.80-2.10)	**3.20** (2.87-3.60)	**4.38** (3.79-5.00)	1293
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	911
	01-02	*	< LOD	< LOD	< LOD	< LOD	1027
	03-04	**.668** (.612-.730)	**.900** (.800-1.01)	**1.82** (1.70-2.00)	**3.30** (2.80-3.80)	**4.43** (3.76-5.50)	937
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	990
	01-02	*	< LOD	< LOD	< LOD	< LOD	1172
	03-04	**.627** (.581-.678)	**.900** (.800-1.03)	**1.72** (1.51-1.90)	**2.80** (2.50-3.11)	**3.70** (3.37-4.26)	941
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	630
	01-02	*	< LOD	< LOD	< LOD	< LOD	519
	03-04	*	< LOD	**.700** (.470-1.20)	**1.40** (1.20-1.95)	**2.00** (1.40-2.91)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	409
	01-02	*	< LOD	< LOD	< LOD	< LOD	494
	03-04	**.688** (.579-.818)	**.900** (.700-1.10)	**2.20** (1.70-2.60)	**5.00** (3.38-6.53)	**7.60** (5.00-11.3)	458
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	706
	01-02	*	< LOD	< LOD	< LOD	< LOD	1027
	03-04	**.720** (.665-.781)	**1.00** (.870-1.10)	**1.80** (1.69-2.00)	**2.94** (2.70-3.20)	**3.90** (3.53-4.20)	877

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.5, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.480**	0.126	12
		07-08	*	*	15
	40-59	05-06	**1.57**	0.18	12
		07-08	**1.29**	0.07	16
	60+	05-06	**2.61**	0.16	15
		07-08	**2.98**	0.2	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	**1.03**	0.06	13
		07-08	**1.13**	0.06	17
	60+	05-06	**2.19**	0.17	17
		07-08	**2.31**	0.13	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.404**	0.074	6
		07-08	*	*	6
	40-59	05-06	**1.57**	0.11	5
		07-08	**1.85**	0.24	6
	60+	05-06	**4.16**	0.33	5
		07-08	**4.64**	0.61	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	**1.48**	0.16	7
		07-08	**1.48**	0.15	8
	60+	05-06	**4.61**	0.95	5
		07-08	**4.09**	0.3	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**.808**	0.073	4
		07-08	**1.32**	0.18	6
	60+	05-06	**1.86**	0.45	4
		07-08	**2.34**	0.29	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.789**	0.059	6
		07-08	**.967**	0.118	6
	60+	05-06	**1.50**	0.09	3
		07-08	**1.90**	0.37	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1901
	01-02	*	< LOD	< LOD	< LOD	< LOD	2199
	03-04	**.004** (.004-.004)	**.006** (.005-.006)	**.012** (.011-.012)	**.021** (.019-.022)	**.027** (.024-.031)	1878
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	660
	01-02	*	< LOD	< LOD	< LOD	< LOD	679
	03-04	*	< LOD	< LOD	**.003** (.002-.004)	**.005** (.004-.009)	585
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1241
	01-02	*	< LOD	< LOD	< LOD	< LOD	1520
	03-04	**.005** (.005-.005)	**.007** (.006-.007)	**.013** (.012-.014)	**.022** (.020-.024)	**.028** (.025-.033)	1293
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	911
	01-02	*	< LOD	< LOD	< LOD	< LOD	1027
	03-04	**.004** (.004-.005)	**.006** (.005-.007)	**.012** (.011-.013)	**.021** (.018-.024)	**.029** (.024-.036)	937
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	990
	01-02	*	< LOD	< LOD	< LOD	< LOD	1172
	03-04	**.004** (.003-.004)	**.006** (.005-.006)	**.012** (.010-.012)	**.019** (.017-.021)	**.026** (.023-.028)	941
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	630
	01-02	*	< LOD	< LOD	< LOD	< LOD	519
	03-04	*	< LOD	**.005** (.003-.007)	**.010** (.007-.015)	**.017** (.011-.022)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	409
	01-02	*	< LOD	< LOD	< LOD	< LOD	494
	03-04	**.004** (.003-.005)	**.006** (.004-.006)	**.013** (.010-.017)	**.030** (.020-.048)	**.052** (.028-.067)	458
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	706
	01-02	*	< LOD	< LOD	< LOD	< LOD	1027
	03-04	**.004** (.004-.005)	**.006** (.005-.007)	**.012** (.011-.013)	**.020** (.018-.022)	**.026** (.023-.029)	877

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.004**	0.001	12
		07-08	*	*	15
	40-59	05-06	**.012**	0.002	12
		07-08	**.009**	0.001	16
	60+	05-06	**.018**	0.001	15
		07-08	**.019**	0.001	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	**.008**	0.001	13
		07-08	**.007**	0	17
	60+	05-06	**.016**	0.001	17
		07-08	**.015**	0.001	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.002**	0	6
		07-08	*	*	6
	40-59	05-06	**.010**	0.001	5
		07-08	**.012**	0.002	6
	60+	05-06	**.025**	0.002	5
		07-08	**.028**	0.004	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	*	*	7
		07-08	*	*	8
	40-59	05-06	**.009**	0.001	7
		07-08	**.009**	0.001	8
	60+	05-06	**.031**	0.006	5
		07-08	**.025**	0.002	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**.007**	0.001	4
		07-08	**.009**	0.001	6
	60+	05-06	**.013**	0.003	4
		07-08	**.017**	0.002	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.006**	0	6
		07-08	**.007**	0.001	6
	60+	05-06	**.011**	0.002	3
		07-08	**.013**	0.003	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1873
	01-02	*	< LOD	< LOD	< LOD	< LOD	2287
	03-04	**1.13** (1.07-1.20)	**1.30** (1.20-1.40)	**2.77** (2.50-3.09)	**5.30** (4.70-5.90)	**7.20** (6.38-8.50)	1882
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	653
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	**.600** (.500-.720)	**1.04** (.800-1.40)	**1.70** (1.20-1.95)	588
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1220
	01-02	*	< LOD	< LOD	< LOD	< LOD	1531
	03-04	**1.40** (1.30-1.50)	**1.50** (1.40-1.71)	**3.10** (2.80-3.44)	**5.70** (4.99-6.22)	**7.80** (6.50-9.50)	1294
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	887
	01-02	*	< LOD	< LOD	< LOD	< LOD	1065
	03-04	**1.12** (1.03-1.21)	**1.30** (1.17-1.41)	**2.70** (2.40-3.00)	**5.30** (4.72-5.80)	**7.82** (6.22-9.50)	940
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	986
	01-02	*	< LOD	< LOD	< LOD	< LOD	1222
	03-04	**1.15** (1.06-1.23)	**1.30** (1.18-1.49)	**2.80** (2.57-3.19)	**5.30** (4.50-6.06)	**6.97** (6.15-7.92)	942
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	622
	01-02	*	< LOD	< LOD	< LOD	< LOD	562
	03-04	**.500** (<LOD-.649)	**.550** (.400-.700)	**1.36** (1.00-1.63)	**2.40** (1.86-3.30)	**3.40** (2.33-4.63)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	399
	01-02	*	< LOD	< LOD	< LOD	**10.6** (<LOD-12.4)	515
	03-04	**1.52** (1.25-1.84)	**1.56** (1.29-2.05)	**4.40** (3.20-5.70)	**9.80** (6.30-13.3)	**15.8** (10.0-25.7)	458
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	698
	01-02	*	< LOD	< LOD	< LOD	< LOD	1048
	03-04	**1.16** (1.08-1.25)	**1.34** (1.20-1.50)	**2.74** (2.41-3.09)	**5.00** (4.57-5.56)	**6.50** (5.98-7.40)	880

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.5, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.606**	0.123	12
		07-08	**.469**	0.065	15
	40-59	05-06	**1.59**	0.2	12
		07-08	**1.26**	0.07	16
	60+	05-06	**2.92**	0.19	15
		07-08	**3.26**	0.37	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**.369**	0.022	16
		07-08	*	*	13
	40-59	05-06	**1.24**	0.1	13
		07-08	**1.16**	0.08	17
	60+	05-06	**2.65**	0.21	17
		07-08	**2.81**	0.2	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.684**	0.098	6
		07-08	**.553**	0.065	6
	40-59	05-06	**2.09**	0.29	5
		07-08	**2.36**	0.33	6
	60+	05-06	**5.62**	0.59	5
		07-08	**5.17**	0.63	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.556**	0.07	7
		07-08	*	*	8
	40-59	05-06	**2.36**	0.22	7
		07-08	**2.18**	0.31	8
	60+	05-06	**7.31**	1.57	5
		07-08	**6.47**	0.57	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.420**	0.032	9
		07-08	**.360**	0.068	9
	40-59	05-06	**1.02**	0.13	4
		07-08	**1.48**	0.22	6
	60+	05-06	**2.10**	0.4	4
		07-08	**2.34**	0.27	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**1.20**	0.08	6
		07-08	**1.23**	0.15	6
	60+	05-06	**2.48**	0.21	3
		07-08	**2.64**	0.53	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1873
	01-02	*	< LOD	< LOD	< LOD	< LOD	2287
	03-04	**.007** (.007-.007)	**.008** (.008-.009)	**.018** (.016-.021)	**.034** (.031-.037)	**.047** (.043-.056)	1882
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	653
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	**.003** (.003-.004)	**.006** (.005-.007)	**.007** (.006-.011)	588
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1220
	01-02	*	< LOD	< LOD	< LOD	< LOD	1531
	03-04	**.009** (.008-.009)	**.010** (.009-.011)	**.021** (.018-.023)	**.036** (.033-.041)	**.053** (.045-.058)	1294
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	887
	01-02	*	< LOD	< LOD	< LOD	< LOD	1065
	03-04	**.007** (.006-.007)	**.009** (.008-.009)	**.018** (.016-.021)	**.032** (.030-.036)	**.045** (.039-.062)	940
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	986
	01-02	*	< LOD	< LOD	< LOD	< LOD	1222
	03-04	**.007** (.006-.008)	**.008** (.007-.009)	**.018** (.017-.021)	**.035** (.032-.042)	**.051** (.043-.056)	942
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	622
	01-02	*	< LOD	< LOD	< LOD	< LOD	562
	03-04	**.003** (<LOD-.004)	**.003** (.002-.005)	**.008** (.006-.011)	**.018** (.012-.025)	**.025** (.018-.032)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	399
	01-02	*	< LOD	< LOD	< LOD	**.070** (<LOD-.100)	515
	03-04	**.009** (.007-.011)	**.009** (.007-.012)	**.026** (.018-.036)	**.057** (.044-.090)	**.105** (.058-.143)	458
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	698
	01-02	*	< LOD	< LOD	< LOD	< LOD	1048
	03-04	**.007** (.007-.008)	**.009** (.008-.010)	**.018** (.016-.021)	**.032** (.029-.036)	**.044** (.040-.052)	880

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.005**	0.001	12
		07-08	**.003**	0	15
	40-59	05-06	**.012**	0.002	12
		07-08	**.009**	0.001	16
	60+	05-06	**.020**	0.001	15
		07-08	**.021**	0.002	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**.002**	0	16
		07-08	*	*	13
	40-59	05-06	**.009**	0.001	13
		07-08	**.008**	0.001	17
	60+	05-06	**.019**	0.001	17
		07-08	**.019**	0.001	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.004**	0.001	6
		07-08	**.003**	0	6
	40-59	05-06	**.013**	0.002	5
		07-08	**.015**	0.002	6
	60+	05-06	**.033**	0.003	5
		07-08	**.032**	0.004	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.003**	0	7
		07-08	*	*	8
	40-59	05-06	**.015**	0.001	7
		07-08	**.013**	0.002	8
	60+	05-06	**.049**	0.011	5
		07-08	**.039**	0.004	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.003**	0	9
		07-08	**.002**	0	9
	40-59	05-06	**.008**	0.001	4
		07-08	**.010**	0.002	6
	60+	05-06	**.015**	0.003	4
		07-08	**.016**	0.002	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.009**	0	6
		07-08	**.008**	0.001	6
	60+	05-06	**.019**	0.003	3
		07-08	**.018**	0.004	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1932
	01-02	*	< LOD	< LOD	< LOD	< LOD	2299
	03-04	**.933** (.894-.974)	**1.20** (1.10-1.30)	**2.50** (2.30-2.67)	**4.24** (3.90-4.47)	**6.10** (5.13-7.10)	1887
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	669
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	**.400** (<LOD-.480)	**.850** (.620-1.04)	**1.12** (1.00-1.32)	590
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1263
	01-02	*	< LOD	< LOD	< LOD	< LOD	1541
	03-04	**1.18** (1.11-1.25)	**1.46** (1.30-1.60)	**2.74** (2.60-2.90)	**4.41** (4.10-4.80)	**6.50** (5.69-7.58)	1297
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	919
	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	**.991** (.918-1.07)	**1.20** (1.10-1.37)	**2.66** (2.45-2.80)	**4.50** (3.80-5.10)	**6.40** (5.30-7.70)	940
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1013
	01-02	*	< LOD	< LOD	< LOD	< LOD	1230
	03-04	**.881** (.835-.930)	**1.20** (1.10-1.30)	**2.30** (2.20-2.59)	**4.01** (3.71-4.34)	**5.40** (4.47-6.70)	947
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	635
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	*	< LOD	**.900** (.600-1.34)	**1.99** (1.37-2.60)	**3.10** (2.00-3.60)	424
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	415
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**1.09** (.911-1.30)	**1.30** (.910-1.65)	**3.10** (2.30-4.21)	**7.10** (5.13-10.1)	**11.4** (6.80-16.5)	460
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	724
	01-02	*	< LOD	< LOD	< LOD	< LOD	1054
	03-04	**1.03** (.963-1.10)	**1.30** (1.19-1.50)	**2.61** (2.40-2.80)	**4.20** (3.80-4.40)	**5.33** (4.58-6.30)	882

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.4, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.735**	0.151	12
		07-08	**.591**	0.067	15
	40-59	05-06	**2.39**	0.22	12
		07-08	**1.81**	0.09	16
	60+	05-06	**4.18**	0.26	15
		07-08	**4.07**	0.3	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**.460**	0.036	16
		07-08	*	*	13
	40-59	05-06	**1.59**	0.12	13
		07-08	**1.49**	0.08	17
	60+	05-06	**3.55**	0.29	17
		07-08	**3.44**	0.17	21
Non-Hispanic Black Male	12-19	05-06	**.351**	0.049	13
		07-08	*	*	6
	20-39	05-06	**.854**	0.136	6
		07-08	**.564**	0.098	6
	40-59	05-06	**2.78**	0.15	5
		07-08	**2.85**	0.3	6
	60+	05-06	**7.22**	0.75	5
		07-08	**6.82**	0.77	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.545**	0.092	7
		07-08	*	*	8
	40-59	05-06	**2.39**	0.27	7
		07-08	**2.11**	0.23	8
	60+	05-06	**7.83**	1.63	5
		07-08	**6.33**	0.56	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.382**	0.039	9
		07-08	*	*	9
	40-59	05-06	**1.14**	0.08	4
		07-08	**1.58**	0.21	6
	60+	05-06	**2.79**	0.67	4
		07-08	**3.23**	0.45	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**1.12**	0.08	6
		07-08	**1.37**	0.23	6
	60+	05-06	**2.42**	0.2	3
		07-08	**3.00**	0.59	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1932
	01-02	*	< LOD	< LOD	< LOD	< LOD	2299
	03-04	**.006** (.005-.006)	**.008** (.007-.008)	**.016** (.015-.018)	**.029** (.026-.032)	**.041** (.035-.045)	1887
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	669
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	*	< LOD	**.002** (<LOD-.002)	**.004** (.003-.005)	**.006** (.004-.007)	590
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1263
	01-02	*	< LOD	< LOD	< LOD	< LOD	1541
	03-04	**.007** (.007-.008)	**.009** (.008-.010)	**.018** (.017-.019)	**.031** (.028-.034)	**.043** (.038-.048)	1297
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	919
	01-02	*	< LOD	< LOD	< LOD	< LOD	1069
	03-04	**.006** (.006-.007)	**.008** (.007-.009)	**.017** (.016-.018)	**.030** (.025-.034)	**.042** (.034-.050)	940
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1013
	01-02	*	< LOD	< LOD	< LOD	< LOD	1230
	03-04	**.005** (.005-.006)	**.008** (.006-.008)	**.016** (.014-.017)	**.028** (.025-.031)	**.040** (.034-.045)	947
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	635
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	*	< LOD	**.005** (.004-.008)	**.013** (.009-.020)	**.022** (.014-.028)	424
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	415
	01-02	*	< LOD	< LOD	< LOD	< LOD	515
	03-04	**.006** (.005-.008)	**.008** (.006-.008)	**.019** (.016-.027)	**.044** (.032-.061)	**.077** (.045-.089)	460
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	724
	01-02	*	< LOD	< LOD	< LOD	< LOD	1054
	03-04	**.006** (.006-.007)	**.008** (.007-.010)	**.017** (.015-.018)	**.028** (.025-.031)	**.037** (.033-.045)	882

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.006**	0.001	12
		07-08	**.004**	0	15
	40-59	05-06	**.018**	0.002	12
		07-08	**.013**	0.001	16
	60+	05-06	**.028**	0.002	15
		07-08	**.026**	0.002	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**.003**	0	16
		07-08	*	*	13
	40-59	05-06	**.012**	0.001	13
		07-08	**.010**	0.001	17
	60+	05-06	**.026**	0.002	17
		07-08	**.023**	0.001	21
Non-Hispanic Black Male	12-19	05-06	**.002**	0	13
		07-08	*	*	6
	20-39	05-06	**.005**	0.001	6
		07-08	**.003**	0.001	6
	40-59	05-06	**.018**	0.001	5
		07-08	**.018**	0.002	6
	60+	05-06	**.043**	0.005	5
		07-08	**.041**	0.005	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.003**	0.001	7
		07-08	*	*	8
	40-59	05-06	**.015**	0.002	7
		07-08	**.013**	0.002	8
	60+	05-06	**.052**	0.011	5
		07-08	**.038**	0.004	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.003**	0	9
		07-08	*	*	9
	40-59	05-06	**.009**	0.001	4
		07-08	**.011**	0.001	6
	60+	05-06	**.020**	0.004	4
		07-08	**.023**	0.002	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.008**	0	6
		07-08	**.009**	0.002	6
	60+	05-06	**.019**	0.003	3
		07-08	**.021**	0.005	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	**37.5** (32.7-41.8)	**62.0** (56.6-66.6)	**79.3** (72.1-89.2)	1924
	01-02	**19.2** (17.4-21.1)	**21.8** (19.0-24.6)	**42.2** (38.3-47.5)	**69.7** (63.7-75.9)	**87.3** (83.3-93.0)	2302
	03-04	**15.1** (14.5-15.7)	**18.0** (16.4-18.9)	**37.1** (34.9-39.5)	**63.7** (56.2-68.2)	**81.5** (75.8-89.9)	1896
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	**12.2** (<LOD-14.8)	**21.3** (14.2-26.0)	755
	03-04	**3.06** (2.65-3.54)	**2.97** (2.57-3.41)	**5.00** (4.20-5.80)	**11.1** (8.70-13.0)	**14.7** (13.0-18.8)	598
20 years and older	99-00	*	< LOD	**41.1** (37.6-45.2)	**65.6** (60.6-69.4)	**84.8** (75.6-96.1)	1257
	01-02	**23.0** (20.8-25.5)	**26.5** (22.7-28.6)	**46.7** (41.4-51.3)	**74.5** (66.7-79.8)	**91.4** (85.0-99.5)	1547
	03-04	**19.0** (17.9-20.1)	**21.5** (18.9-24.3)	**40.4** (37.9-42.8)	**66.7** (61.0-70.1)	**88.0** (77.8-96.7)	1298
Gender							
Males	99-00	*	< LOD	**40.6** (34.5-45.0)	**65.1** (58.6-71.4)	**83.8** (75.8-96.3)	919
	01-02	**21.1** (18.8-23.7)	**25.1** (21.2-30.0)	**46.7** (39.8-51.8)	**73.8** (63.2-79.8)	**86.9** (78.0-99.4)	1073
	03-04	**16.1** (14.8-17.4)	**18.5** (15.8-21.3)	**39.6** (35.8-41.7)	**68.6** (63.7-75.0)	**88.3** (76.8-96.7)	947
Females	99-00	*	< LOD	**34.4** (29.8-39.3)	**56.7** (52.2-62.6)	**74.6** (66.6-90.5)	1005
	01-02	**17.5** (15.9-19.3)	**18.5** (16.0-21.6)	**39.7** (34.8-43.9)	**64.3** (58.0-74.8)	**87.9** (79.1-98.1)	1229
	03-04	**14.2** (13.4-15.0)	**17.8** (15.8-19.2)	**35.4** (31.8-38.5)	**55.7** (51.2-59.9)	**74.3** (64.8-87.6)	949
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	**41.7** (33.2-50.5)	**57.8** (49.7-63.8)	633
	01-02	*	< LOD	**18.0** (11.5-22.7)	**36.9** (28.2-45.7)	**54.2** (42.2-60.0)	566
	03-04	**6.14** (4.91-7.67)	**5.80** (3.80-7.50)	**12.6** (8.97-21.5)	**27.2** (22.3-35.4)	**38.8** (27.2-60.7)	427
Non-Hispanic blacks	99-00	*	< LOD	**39.3** (32.2-48.4)	**78.4** (64.3-93.7)	**117** (89.6-144)	414
	01-02	**19.5** (16.5-23.1)	**21.0** (16.9-23.8)	**48.4** (36.7-57.9)	**90.5** (73.7-101)	**116** (96.1-167)	514
	03-04	**15.1** (12.8-17.7)	**18.1** (12.6-20.8)	**39.0** (29.7-51.1)	**89.9** (64.4-122)	**137** (91.4-206)	464
Non-Hispanic whites	99-00	*	< LOD	**39.9** (34.5-45.3)	**62.3** (56.5-68.6)	**79.0** (71.3-91.4)	719
	01-02	**21.4** (19.1-23.9)	**24.8** (21.5-28.1)	**45.6** (40.2-51.0)	**72.4** (63.8-78.0)	**87.9** (83.8-94.3)	1059
	03-04	**16.9** (15.9-18.0)	**19.8** (18.4-23.1)	**39.3** (35.8-42.0)	**63.7** (55.0-69.1)	**79.8** (70.1-89.3)	883

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 28.2, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**4.20**	0.71	9
		07-08	**3.50**	0.65	6
	20-39	05-06	**10.7**	2.6	12
		07-08	**8.43**	0.64	15
	40-59	05-06	**37.8**	6.8	12
		07-08	**25.8**	1	16
	60+	05-06	**58.6**	3.4	15
		07-08	**57.6**	3.4	23
Non-Hispanic White Female	12-19	05-06	**2.70**	0.27	10
		07-08	**2.82**	0.82	7
	20-39	05-06	**6.45**	0.74	16
		07-08	**6.65**	0.93	13
	40-59	05-06	**22.4**	1.2	13
		07-08	**22.3**	1.1	17
	60+	05-06	**48.3**	3.7	17
		07-08	**45.7**	2.2	21
Non-Hispanic Black Male	12-19	05-06	**4.06**	0.56	13
		07-08	**3.54**	0.68	6
	20-39	05-06	**10.5**	1.3	6
		07-08	**7.36**	0.82	6
	40-59	05-06	**32.8**	2.3	5
		07-08	**34.2**	3.9	6
	60+	05-06	**88.0**	8.6	5
		07-08	**82.5**	9.9	8
Non-Hispanic Black Female	12-19	05-06	**2.10**	0.16	14
		07-08	**2.02**	0.3	5
	20-39	05-06	**6.93**	1.06	7
		07-08	**5.69**	0.88	8
	40-59	05-06	**30.5**	3.1	7
		07-08	**26.4**	2.5	8
	60+	05-06	**88.6**	17.3	5
		07-08	**73.1**	4.2	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**2.04**	0.29	11
		07-08	**2.24**	0.37	6
	20-39	05-06	**5.12**	0.28	9
		07-08	**5.47**	0.6	9
	40-59	05-06	**15.9**	1.3	4
		07-08	**20.9**	2.6	6
	60+	05-06	**39.3**	10.1	4
		07-08	**42.0**	5.5	5
Mexican American Female	12-19	05-06	**1.78**	0.18	16
		07-08	****2.10**	1.27	5
	20-39	05-06	**3.45**	0.6	9
		07-08	**3.88**	0.21	8
	40-59	05-06	**15.5**	1.4	6
		07-08	**18.2**	2.6	6
	60+	05-06	**30.9**	0.3	3
		07-08	**33.7**	6.7	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	.250 (.220-.270)	.410 (.370-.450)	.540 (.490-.600)	1924
	01-02	.118 (.106-.130)	.140 (.120-.160)	.280 (.250-.300)	.460 (.400-.510)	.610 (.540-.690)	2302
	03-04	.092 (.088-.096)	.114 (.102-.127)	.246 (.230-.253)	.409 (.386-.438)	.534 (.495-.598)	1896
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	.060 (<LOD-.080)	.090 (.070-.140)	755
	03-04	.016 (.014-.018)	.015 (.013-.017)	.025 (.022-.030)	.050 (.046-.056)	.076 (.056-.096)	598
20 years and older	99-00	*	< LOD	.270 (.240-.300)	.440 (.410-.480)	.560 (.500-.620)	1257
	01-02	.146 (.131-.162)	.170 (.150-.190)	.300 (.280-.340)	.490 (.430-.560)	.640 (.570-.740)	1547
	03-04	.119 (.112-.126)	.138 (.125-.151)	.270 (.249-.284)	.433 (.402-.474)	.572 (.511-.635)	1298
Gender							
Males	99-00	*	< LOD	.260 (.220-.300)	.460 (.370-.510)	.570 (.500-.650)	919
	01-02	.131 (.117-.147)	.170 (.140-.200)	.300 (.260-.340)	.480 (.410-.550)	.620 (.530-.720)	1073
	03-04	.099 (.091-.108)	.117 (.098-.148)	.250 (.231-.274)	.422 (.388-.495)	.596 (.499-.654)	947
Females	99-00	*	< LOD	.230 (.200-.270)	.380 (.340-.410)	.510 (.430-.560)	1005
	01-02	.106 (.096-.117)	.120 (.100-.140)	.260 (.230-.280)	.420 (.380-.470)	.610 (.520-.700)	1229
	03-04	.085 (.080-.092)	.110 (.094-.123)	.230 (.209-.252)	.386 (.349-.421)	.494 (.459-.541)	949
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	.280 (.200-.320)	.390 (.320-.450)	633
	01-02	*	< LOD	.110 (.080-.160)	.260 (.200-.310)	.360 (.280-.420)	566
	03-04	.037 (.030-.047)	.035 (.024-.051)	.086 (.059-.118)	.191 (.138-.313)	.343 (.191-.405)	427
Non-Hispanic blacks	99-00	*	< LOD	.250 (.190-.300)	.500 (.350-.660)	.730 (.530-1.04)	414
	01-02	.110 (.092-.131)	.120 (.090-.140)	.290 (.220-.350)	.580 (.440-.650)	.720 (.520-1.01)	514
	03-04	.086 (.072-.102)	.098 (.070-.126)	.248 (.194-.327)	.580 (.373-.824)	.919 (.592-1.12)	464
Non-Hispanic whites	99-00	*	< LOD	.260 (.240-.300)	.430 (.380-.470)	.540 (.480-.600)	719
	01-02	.132 (.118-.148)	.160 (.140-.180)	.290 (.260-.330)	.470 (.410-.530)	.620 (.530-.730)	1059
	03-04	.104 (.097-.112)	.132 (.115-.151)	.253 (.235-.280)	.409 (.382-.449)	.512 (.478-.572)	883

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.023**	0.004	9
		07-08	**.017**	0.003	6
	20-39	05-06	**.081**	0.023	12
		07-08	**.056**	0.005	15
	40-59	05-06	**.288**	0.058	12
		07-08	**.188**	0.008	16
	60+	05-06	**.397**	0.02	15
		07-08	**.369**	0.021	23
Non-Hispanic White Female	12-19	05-06	**.014**	0.002	10
		07-08	**.014**	0.004	7
	20-39	05-06	**.042**	0.005	16
		07-08	**.040**	0.006	13
	40-59	05-06	**.167**	0.014	13
		07-08	**.147**	0.008	17
	60+	05-06	**.350**	0.025	17
		07-08	**.306**	0.015	21
Non-Hispanic Black Male	12-19	05-06	**.020**	0.003	13
		07-08	**.017**	0.003	6
	20-39	05-06	**.062**	0.008	6
		07-08	**.041**	0.004	6
	40-59	05-06	**.209**	0.015	5
		07-08	**.219**	0.025	6
	60+	05-06	**.527**	0.054	5
		07-08	**.501**	0.063	8
Non-Hispanic Black Female	12-19	05-06	**.010**	0.001	14
		07-08	**.010**	0.002	5
	20-39	05-06	**.040**	0.006	7
		07-08	**.029**	0.005	8
	40-59	05-06	**.196**	0.021	7
		07-08	**.160**	0.018	8
	60+	05-06	**.589**	0.113	5
		07-08	**.439**	0.028	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.011**	0.001	11
		07-08	**.012**	0.002	6
	20-39	05-06	**.036**	0.002	9
		07-08	**.037**	0.004	9
	40-59	05-06	**.130**	0.015	4
		07-08	**.148**	0.018	6
	60+	05-06	**.281**	0.066	4
		07-08	**.298**	0.029	5
Mexican American Female	12-19	05-06	**.010**	0.001	16
		07-08	*	*	5
	20-39	05-06	**.023**	0.004	9
		07-08	**.023**	0.002	8
	40-59	05-06	**.113**	0.009	6
		07-08	**.122**	0.017	6
	60+	05-06	**.236**	0.025	3
		07-08	**.233**	0.049	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1928
	01-02	*	< LOD	< LOD	< LOD	< LOD	2306
	03-04	**1.45** (1.38-1.54)	**1.60** (1.50-1.77)	**3.29** (3.15-3.54)	**5.86** (5.50-6.29)	**7.90** (7.50-8.74)	1886
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	668
	01-02	*	< LOD	< LOD	< LOD	< LOD	757
	03-04	*	**.440** (<LOD-.500)	**.730** (.660-.840)	**1.30** (.990-1.62)	**1.91** (1.50-2.24)	590
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1260
	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	**1.77** (1.67-1.88)	**1.88** (1.73-2.09)	**3.70** (3.34-4.00)	**6.25** (5.71-6.83)	**8.40** (7.70-9.55)	1296
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	919
	01-02	*	< LOD	< LOD	< LOD	< LOD	1074
	03-04	**1.47** (1.34-1.61)	**1.54** (1.40-1.77)	**3.29** (3.10-3.54)	**5.80** (5.30-6.50)	**7.90** (7.20-9.20)	940
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1009
	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	**1.44** (1.34-1.55)	**1.69** (1.50-1.82)	**3.30** (3.05-3.80)	**5.88** (5.21-6.30)	**7.90** (7.31-9.24)	946
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	635
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	**.703** (.579-.854)	**.700** (.600-.890)	**1.40** (1.19-1.90)	**2.62** (2.20-3.47)	**3.73** (2.60-5.60)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	**12.7** (<LOD-23.1)	413
	01-02	*	< LOD	< LOD	< LOD	**13.0** (<LOD-14.9)	514
	03-04	**1.64** (1.41-1.90)	**1.60** (1.20-2.00)	**4.31** (3.25-5.63)	**11.0** (6.69-13.7)	**14.8** (11.3-17.4)	459
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	722
	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	**1.56** (1.43-1.69)	**1.74** (1.55-1.90)	**3.30** (3.14-3.73)	**5.71** (5.20-6.29)	**7.59** (6.70-8.04)	883

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.4, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.443**	0.059	9
		07-08	*	*	6
	20-39	05-06	**1.17**	0.31	12
		07-08	**.964**	0.069	15
	40-59	05-06	**3.14**	0.76	12
		07-08	**2.15**	0.08	16
	60+	05-06	**4.82**	0.23	15
		07-08	**5.17**	0.41	23
Non-Hispanic White Female	12-19	05-06	**.311**	0.03	10
		07-08	*	*	7
	20-39	05-06	**.694**	0.043	16
		07-08	**.839**	0.194	13
	40-59	05-06	**2.04**	0.11	13
		07-08	**2.08**	0.12	17
	60+	05-06	**4.13**	0.34	17
		07-08	**4.20**	0.26	21
Non-Hispanic Black Male	12-19	05-06	**.598**	0.087	13
		07-08	*	*	6
	20-39	05-06	**1.10**	0.13	6
		07-08	**.927**	0.087	6
	40-59	05-06	**3.05**	0.33	5
		07-08	**3.92**	0.7	6
	60+	05-06	**7.74**	0.74	5
		07-08	**8.16**	1.05	8
Non-Hispanic Black Female	12-19	05-06	**.335**	0.035	14
		07-08	*	*	5
	20-39	05-06	**.861**	0.111	7
		07-08	**.801**	0.164	8
	40-59	05-06	**3.48**	0.24	7
		07-08	**3.14**	0.33	8
	60+	05-06	**9.38**	2.28	5
		07-08	**9.22**	0.69	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.686**	0.053	9
		07-08	**.781**	0.056	9
	40-59	05-06	**1.52**	0.12	4
		07-08	**2.22**	0.34	6
	60+	05-06	**3.05**	0.58	4
		07-08	**3.84**	0.67	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.476**	0.076	9
		07-08	**.475**	0.087	8
	40-59	05-06	**1.86**	0.13	6
		07-08	**2.09**	0.25	6
	60+	05-06	**3.36**	0.07	3
		07-08	**4.27**	1.05	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1928
	01-02	*	< LOD	< LOD	< LOD	< LOD	2306
	03-04	**.009** (.008-.009)	**.010** (.009-.011)	**.021** (.019-.024)	**.039** (.036-.042)	**.054** (.048-.059)	1886
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	668
	01-02	*	< LOD	< LOD	< LOD	< LOD	757
	03-04	*	**.002** (<LOD-.003)	**.004** (.004-.004)	**.007** (.005-.009)	**.009** (.007-.010)	590
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1260
	01-02	*	< LOD	< LOD	< LOD	< LOD	1549
	03-04	**.011** (.010-.012)	**.012** (.011-.014)	**.024** (.022-.027)	**.042** (.038-.045)	**.057** (.052-.064)	1296
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	919
	01-02	*	< LOD	< LOD	< LOD	< LOD	1074
	03-04	**.009** (.008-.010)	**.010** (.009-.011)	**.022** (.019-.025)	**.038** (.035-.042)	**.052** (.043-.064)	940
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1009
	01-02	*	< LOD	< LOD	< LOD	< LOD	1232
	03-04	**.009** (.008-.009)	**.010** (.009-.012)	**.021** (.019-.023)	**.042** (.036-.044)	**.055** (.049-.061)	946
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	635
	01-02	*	< LOD	< LOD	< LOD	< LOD	567
	03-04	**.004** (.003-.005)	**.005** (.004-.006)	**.009** (.007-.013)	**.019** (.013-.029)	**.029** (.017-.044)	423
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	**.070** (<LOD-.150)	413
	01-02	*	< LOD	< LOD	< LOD	**.080** (<LOD-.110)	514
	03-04	**.009** (.008-.011)	**.009** (.008-.012)	**.027** (.019-.037)	**.065** (.043-.084)	**.090** (.058-.120)	459
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	722
	01-02	*	< LOD	< LOD	< LOD	< LOD	1061
	03-04	**.010** (.009-.010)	**.011** (.010-.012)	**.022** (.019-.025)	**.038** (.035-.042)	**.049** (.046-.055)	883

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.002**	0	9
		07-08	*	*	6
	20-39	05-06	**.009**	0.003	12
		07-08	**.006**	0.001	15
	40-59	05-06	**.024**	0.006	12
		07-08	**.016**	0.001	16
	60+	05-06	**.033**	0.001	15
		07-08	**.033**	0.003	23
Non-Hispanic White Female	12-19	05-06	**.002**	0	10
		07-08	*	*	7
	20-39	05-06	**.005**	0	16
		07-08	**.005**	0.001	13
	40-59	05-06	**.015**	0.001	13
		07-08	**.014**	0.001	17
	60+	05-06	**.030**	0.002	17
		07-08	**.028**	0.002	21
Non-Hispanic Black Male	12-19	05-06	**.003**	0	13
		07-08	*	*	6
	20-39	05-06	**.007**	0.001	6
		07-08	**.005**	0.001	6
	40-59	05-06	**.019**	0.002	5
		07-08	**.025**	0.005	6
	60+	05-06	**.046**	0.004	5
		07-08	**.050**	0.007	8
Non-Hispanic Black Female	12-19	05-06	**.002**	0	14
		07-08	*	*	5
	20-39	05-06	**.005**	0.001	7
		07-08	**.004**	0.001	8
	40-59	05-06	**.022**	0.002	7
		07-08	**.019**	0.002	8
	60+	05-06	**.063**	0.015	5
		07-08	**.055**	0.004	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.005**	0	9
		07-08	**.005**	0	9
	40-59	05-06	**.012**	0.001	4
		07-08	**.016**	0.002	6
	60+	05-06	**.022**	0.004	4
		07-08	**.027**	0.004	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.003**	0.001	9
		07-08	**.003**	0	8
	40-59	05-06	**.014**	0.001	6
		07-08	**.014**	0.002	6
	60+	05-06	**.026**	0.003	3
		07-08	**.030**	0.008	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**17.7** (15.6-20.4)	**24.8** (22.0-27.7)	1930
	01-02	*	< LOD	**12.2** (10.6-13.8)	**21.7** (19.6-23.7)	**28.1** (26.8-29.7)	2307
	03-04	**4.23** (3.96-4.50)	**4.60** (4.20-5.23)	**10.1** (9.42-10.5)	**17.2** (16.1-18.1)	**24.3** (20.5-27.8)	1889
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	**1.00** (.859-1.17)	**1.00** (.880-1.10)	**1.66** (1.50-1.99)	**3.20** (2.50-4.34)	**5.00** (3.70-6.07)	594
20 years and older	99-00	*	< LOD	< LOD	**19.3** (16.8-21.8)	**26.0** (24.1-29.0)	1263
	01-02	*	< LOD	**13.3** (12.0-15.2)	**23.0** (20.9-24.7)	**29.2** (27.3-32.0)	1549
	03-04	**5.20** (4.83-5.60)	**5.71** (5.01-6.19)	**10.9** (10.3-11.7)	**18.1** (16.9-19.5)	**25.9** (22.1-32.1)	1295
Gender							
Males	99-00	*	< LOD	< LOD	**17.8** (15.8-19.6)	**25.9** (21.6-29.8)	917
	01-02	*	< LOD	**12.7** (<LOD-15.8)	**22.5** (19.4-24.1)	**27.7** (25.2-30.3)	1075
	03-04	**4.34** (3.97-4.75)	**4.50** (4.00-5.40)	**10.4** (9.21-10.9)	**17.9** (16.1-19.5)	**25.1** (20.4-30.9)	939
Females	99-00	*	< LOD	< LOD	**17.7** (15.1-21.7)	**24.2** (21.6-27.0)	1013
	01-02	*	< LOD	**11.9** (<LOD-13.0)	**21.3** (18.5-23.5)	**28.5** (26.2-31.3)	1232
	03-04	**4.12** (3.84-4.41)	**4.67** (4.10-5.30)	**9.85** (8.83-10.5)	**16.4** (15.3-17.9)	**24.2** (19.1-27.8)	950
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	**17.6** (15.1-19.1)	636
	01-02	*	< LOD	< LOD	**10.8** (<LOD-13.4)	**15.7** (12.7-18.2)	567
	03-04	**1.79** (1.47-2.20)	**1.58** (1.26-2.00)	**3.96** (2.70-5.90)	**7.86** (5.96-10.3)	**11.6** (9.41-14.9)	426
Non-Hispanic blacks	99-00	*	< LOD	**15.5** (<LOD-21.1)	**31.6** (26.0-39.0)	**47.1** (36.6-72.1)	412
	01-02	*	< LOD	**16.5** (12.3-21.0)	**30.3** (22.9-40.6)	**44.8** (30.3-61.9)	515
	03-04	**5.09** (4.39-5.90)	**5.40** (4.20-6.21)	**13.9** (10.6-17.7)	**31.7** (22.7-46.4)	**51.5** (31.7-76.5)	458
Non-Hispanic whites	99-00	*	< LOD	< LOD	**16.8** (14.9-18.6)	**22.0** (19.1-25.2)	727
	01-02	*	< LOD	**12.5** (10.8-14.6)	**21.7** (18.9-23.7)	**27.4** (25.2-29.5)	1061
	03-04	**4.47** (4.17-4.79)	**5.00** (4.40-5.70)	**10.1** (9.26-10.8)	**16.5** (15.3-17.9)	**21.1** (19.1-24.2)	884

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 12.4, 10.5, and 0.4, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**1.15**	0.17	9
		07-08	**.986**	0.243	6
	20-39	05-06	**3.08**	0.71	12
		07-08	**2.65**	0.22	15
	40-59	05-06	**8.32**	0.66	12
		07-08	**6.81**	0.33	16
	60+	05-06	**16.6**	1	15
		07-08	**16.8**	1.3	23
Non-Hispanic White Female	12-19	05-06	**.832**	0.069	10
		07-08	*	*	7
	20-39	05-06	**1.77**	0.13	16
		07-08	**2.19**	0.54	13
	40-59	05-06	**6.07**	0.42	13
		07-08	**5.76**	0.32	17
	60+	05-06	**14.0**	1.1	17
		07-08	**13.8**	0.8	21
Non-Hispanic Black Male	12-19	05-06	**1.68**	0.29	13
		07-08	**1.56**	0.3	6
	20-39	05-06	**3.61**	0.61	6
		07-08	**2.73**	0.31	6
	40-59	05-06	**12.3**	1	5
		07-08	**12.8**	1.9	6
	60+	05-06	**32.1**	3.5	5
		07-08	**31.5**	4.1	8
Non-Hispanic Black Female	12-19	05-06	**.956**	0.08	14
		07-08	**.872**	0.162	5
	20-39	05-06	**2.57**	0.42	7
		07-08	**2.20**	0.31	8
	40-59	05-06	**11.3**	1.1	7
		07-08	**9.55**	1.07	8
	60+	05-06	**37.6**	9.4	5
		07-08	**32.7**	3.2	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.633**	0.083	11
		07-08	**.656**	0.133	6
	20-39	05-06	**1.72**	0.15	9
		07-08	**1.92**	0.22	9
	40-59	05-06	**4.78**	0.5	4
		07-08	**6.80**	0.92	6
	60+	05-06	**10.6**	2.5	4
		07-08	**13.1**	1.9	5
Mexican American Female	12-19	05-06	**.615**	0.063	16
		07-08	*	*	5
	20-39	05-06	**1.05**	0.2	9
		07-08	**1.40**	0.13	8
	40-59	05-06	**4.80**	0.3	6
		07-08	**5.66**	0.8	6
	60+	05-06	**10.4**	0.6	3
		07-08	**12.7**	2.8	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	.120 (.110-.130)	.170 (.140-.180)	1930
	01-02	*	< LOD	.080 (.070-.090)	.140 (.130-.160)	.200 (.180-.220)	2307
	03-04	.026 (.024-.028)	.029 (.027-.032)	.065 (.061-.069)	.115 (.106-.125)	.167 (.139-.197)	1889
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	758
	03-04	.005 (.004-.006)	.005 (.004-.006)	.009 (.007-.010)	.016 (.013-.019)	.023 (.016-.029)	594
20 years and older	99-00	*	< LOD	< LOD	.130 (.110-.140)	.180 (.160-.190)	1263
	01-02	*	< LOD	.090 (.080-.100)	.150 (.130-.180)	.210 (.190-.230)	1549
	03-04	.033 (.030-.035)	.036 (.032-.040)	.071 (.067-.075)	.124 (.112-.139)	.172 (.143-.215)	1295
Gender							
Males	99-00	*	< LOD	< LOD	.120 (.100-.140)	.180 (.140-.200)	917
	01-02	*	< LOD	.080 (<LOD-.100)	.150 (.130-.160)	.190 (.170-.230)	1075
	03-04	.027 (.024-.030)	.030 (.026-.035)	.067 (.061-.072)	.116 (.102-.137)	.160 (.137-.215)	939
Females	99-00	*	< LOD	< LOD	.120 (.110-.130)	.160 (.140-.180)	1013
	01-02	*	< LOD	.080 (<LOD-.090)	.140 (.120-.150)	.200 (.180-.220)	1232
	03-04	.025 (.023-.027)	.029 (.026-.033)	.063 (.056-.070)	.115 (.104-.125)	.168 (.141-.191)	950
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	.120 (.100-.130)	636
	01-02	*	< LOD	< LOD	.080 (<LOD-.100)	.100 (.090-.120)	567
	03-04	.011 (.009-.013)	.010 (.007-.015)	.025 (.018-.038)	.057 (.042-.079)	.094 (.059-.110)	426
Non-Hispanic blacks	99-00	*	< LOD	.090 (<LOD-.130)	.200 (.160-.230)	.290 (.210-.530)	412
	01-02	*	< LOD	.100 (.070-.120)	.190 (.150-.260)	.290 (.190-.380)	515
	03-04	.029 (.025-.034)	.032 (.024-.037)	.083 (.070-.109)	.191 (.140-.273)	.330 (.228-.468)	458
Non-Hispanic whites	99-00	*	< LOD	< LOD	.110 (.100-.130)	.150 (.130-.170)	727
	01-02	*	< LOD	.080 (.070-.090)	.140 (.120-.160)	.190 (.170-.220)	1061
	03-04	.028 (.026-.030)	.032 (.029-.036)	.065 (.061-.071)	.111 (.101-.124)	.153 (.132-.172)	884

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.006**	0.001	9
		07-08	**.005**	0.001	6
	20-39	05-06	**.023**	0.006	12
		07-08	**.018**	0.002	15
	40-59	05-06	**.063**	0.005	12
		07-08	**.049**	0.002	16
	60+	05-06	**.112**	0.006	15
		07-08	**.107**	0.008	23
Non-Hispanic White Female	12-19	05-06	**.004**	0	10
		07-08	*****	*	7
	20-39	05-06	**.011**	0.001	16
		07-08	**.013**	0.004	13
	40-59	05-06	**.045**	0.004	13
		07-08	**.038**	0.002	17
	60+	05-06	**.102**	0.008	17
		07-08	**.093**	0.005	21
Non-Hispanic Black Male	12-19	05-06	**.008**	0.001	13
		07-08	**.007**	0.001	6
	20-39	05-06	**.021**	0.004	6
		07-08	**.015**	0.002	6
	40-59	05-06	**.078**	0.006	5
		07-08	**.082**	0.012	6
	60+	05-06	**.191**	0.02	5
		07-08	**.193**	0.028	8
Non-Hispanic Black Female	12-19	05-06	**.005**	0	14
		07-08	**.004**	0.001	5
	20-39	05-06	**.015**	0.003	7
		07-08	**.011**	0.002	8
	40-59	05-06	**.072**	0.007	7
		07-08	**.058**	0.008	8
	60+	05-06	**.251**	0.063	5
		07-08	**.197**	0.021	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.003**	0	11
		07-08	**.004**	0.001	6
	20-39	05-06	**.012**	0.001	9
		07-08	**.013**	0.002	9
	40-59	05-06	**.039**	0.006	4
		07-08	**.048**	0.007	6
	60+	05-06	**.076**	0.017	4
		07-08	**.092**	0.01	5
Mexican American Female	12-19	05-06	**.003**	0	16
		07-08	*	*	5
	20-39	05-06	**.007**	0.001	9
		07-08	**.008**	0.001	8
	40-59	05-06	**.035**	0.001	6
		07-08	**.038**	0.005	6
	60+	05-06	**.080**	0.012	3
		07-08	**.088**	0.02	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	11.1 (<LOD-11.9)	18.2 (16.5-19.5)	23.7 (21.0-27.0)	2279
	03-04	2.69 (2.53-2.85)	4.19 (3.55-4.70)	8.47 (7.79-9.06)	14.3 (13.3-16.0)	19.1 (17.6-20.8)	1835
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	746
	03-04	*	< LOD	1.11 (.700-1.57)	2.40 (1.70-3.57)	5.18 (2.80-6.81)	572
20 years and older	01-02	*	< LOD	12.0 (11.0-13.3)	19.1 (17.7-20.5)	25.3 (22.7-28.0)	1533
	03-04	3.64 (3.40-3.89)	4.95 (4.56-5.42)	9.30 (8.62-9.90)	15.3 (13.9-17.1)	20.1 (18.1-21.9)	1263
Gender							
Males	01-02	*	< LOD	12.3 (10.6-14.1)	19.2 (17.2-21.2)	25.2 (21.7-29.0)	1059
	03-04	2.95 (2.61-3.35)	4.47 (3.55-5.20)	9.60 (8.30-10.9)	17.1 (14.2-18.8)	21.8 (19.8-25.6)	913
Females	01-02	*	< LOD	< LOD	17.0 (14.7-18.8)	21.9 (19.3-26.2)	1220
	03-04	2.45 (2.28-2.64)	4.00 (3.39-4.49)	7.50 (7.01-8.39)	12.7 (11.2-13.6)	16.6 (13.7-18.6)	922
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	14.3 (10.5-17.6)	561
	03-04	.845 (.582-1.23)	.900 (.640-1.49)	2.90 (1.79-4.76)	7.21 (4.80-8.90)	9.50 (7.40-15.0)	410
Non-Hispanic blacks	01-02	*	< LOD	12.3 (<LOD-15.3)	22.6 (18.0-27.5)	29.8 (23.7-41.1)	508
	03-04	2.45 (1.94-3.08)	3.62 (2.70-4.49)	8.83 (6.80-11.2)	18.1 (13.0-23.2)	28.3 (18.9-35.6)	450
Non-Hispanic whites	01-02	*	< LOD	11.9 (10.9-13.1)	18.8 (17.1-20.2)	24.1 (20.9-28.0)	1048
	03-04	3.25 (2.97-3.56)	4.90 (4.19-5.42)	9.08 (8.36-9.80)	14.7 (13.5-16.6)	19.1 (17.4-21.2)	861

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.599**	0.081	9
		07-08	**.622**	0.099	6
	20-39	05-06	**2.31**	0.63	12
		07-08	**1.91**	0.2	15
	40-59	05-06	**8.60**	1.06	12
		07-08	**7.17**	0.32	16
	60+	05-06	**15.1**	0.9	15
		07-08	**15.5**	0.7	23
Non-Hispanic White Female	12-19	05-06	**.386**	0.061	10
		07-08	**.691**	0.184	7
	20-39	05-06	**1.30**	0.16	16
		07-08	**1.64**	0.16	13
	40-59	05-06	**4.30**	0.54	13
		07-08	**5.43**	0.35	17
	60+	05-06	**11.3**	0.8	17
		07-08	**11.7**	0.6	21
Non-Hispanic Black Male	12-19	05-06	**.604**	0.084	13
		07-08	*	*	6
	20-39	05-06	**2.19**	0.28	6
		07-08	**1.75**	0.2	6
	40-59	05-06	**8.55**	0.39	5
		07-08	**8.95**	0.86	6
	60+	05-06	**21.6**	2.2	5
		07-08	**20.8**	2.1	8
Non-Hispanic Black Female	12-19	05-06	**.362**	0.042	14
		07-08	*	*	5
	20-39	05-06	**1.30**	0.2	7
		07-08	**1.11**	0.26	8
	40-59	05-06	**6.26**	0.84	7
		07-08	**6.00**	0.7	8
	60+	05-06	**18.1**	3.4	5
		07-08	**16.9**	1	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.501**	0.138	11
		07-08	**.465**	0.077	6
	20-39	05-06	**.988**	0.082	9
		07-08	****1.76**	0.57	9
	40-59	05-06	**3.83**	0.39	4
		07-08	**5.26**	0.76	6
	60+	05-06	**9.53**	2.54	4
		07-08	**12.2**	1.7	5
Mexican American Female	12-19	05-06	**.331**	0.038	16
		07-08	*****	*	5
	20-39	05-06	**.641**	0.109	9
		07-08	**.943**	0.049	8
	40-59	05-06	**3.25**	0.45	6
		07-08	**3.73**	0.95	6
	60+	05-06	**6.74**	0.23	3
		07-08	**7.77**	1.42	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.070** (<LOD-.080)	**.120** (.110-.140)	**.160** (.150-.190)	2279
	03-04	**.016** (.015-.017)	**.026** (.022-.028)	**.056** (.052-.060)	**.096** (.091-.103)	**.129** (.116-.139)	1835
Age group							
12-19 years	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	746
	03-04	*	**< LOD**	**.006** (.004-.008)	**.013** (.009-.020)	**.023** (.013-.035)	572
20 years and older	01-02	*	**< LOD**	**.080** (.070-.090)	**.130** (.110-.150)	**.170** (.150-.200)	1533
	03-04	**.023** (.021-.024)	**.031** (.027-.035)	**.061** (.057-.065)	**.103** (.094-.113)	**.133** (.122-.145)	1263
Gender							
Males	01-02	*	**< LOD**	**.080** (.070-.090)	**.140** (.110-.160)	**.170** (.150-.210)	1059
	03-04	**.018** (.016-.021)	**.027** (.023-.034)	**.061** (.054-.069)	**.106** (.095-.121)	**.142** (.129-.166)	913
Females	01-02	*	**< LOD**	**< LOD**	**.110** (.090-.130)	**.150** (.130-.180)	1220
	03-04	**.015** (.014-.016)	**.024** (.020-.027)	**.051** (.047-.056)	**.088** (.080-.096)	**.112** (.103-.117)	922
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.100** (.080-.110)	561
	03-04	**.005** (.004-.008)	**.006** (.004-.010)	**.019** (.012-.031)	**.049** (.033-.064)	**.081** (.051-.118)	410
Non-Hispanic blacks	01-02	*	**< LOD**	**.080** (<LOD-.090)	**.150** (.100-.180)	**.200** (.140-.250)	508
	03-04	**.014** (.011-.018)	**.020** (.014-.026)	**.054** (.045-.063)	**.120** (.081-.155)	**.172** (.123-.202)	450
Non-Hispanic whites	01-02	*	**< LOD**	**.080** (.070-.090)	**.130** (.110-.150)	**.170** (.150-.190)	1048
	03-04	**.020** (.018-.022)	**.029** (.026-.034)	**.061** (.056-.066)	**.099** (.090-.106)	**.132** (.116-.143)	861

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.003**	0	9
		07-08	**.003**	0	6
	20-39	05-06	**.018**	0.005	12
		07-08	**.013**	0.001	15
	40-59	05-06	**.065**	0.008	12
		07-08	**.052**	0.003	16
	60+	05-06	**.102**	0.005	15
		07-08	**.100**	0.005	23
Non-Hispanic White Female	12-19	05-06	**.002**	0	10
		07-08	**.003**	0.001	7
	20-39	05-06	**.008**	0.001	16
		07-08	**.010**	0.001	13
	40-59	05-06	**.032**	0.005	13
		07-08	**.036**	0.003	17
	60+	05-06	**.082**	0.006	17
		07-08	**.079**	0.004	21
Non-Hispanic Black Male	12-19	05-06	**.003**	0	13
		07-08	*	*	6
	20-39	05-06	**.013**	0.002	6
		07-08	**.010**	0.001	6
	40-59	05-06	**.054**	0.003	5
		07-08	**.057**	0.006	6
	60+	05-06	**.131**	0.017	5
		07-08	**.127**	0.014	8
Non-Hispanic Black Female	12-19	05-06	**.002**	0	14
		07-08	*	*	5
	20-39	05-06	**.007**	0.001	7
		07-08	**.006**	0.001	8
	40-59	05-06	**.040**	0.005	7
		07-08	**.036**	0.005	8
	60+	05-06	**.120**	0.022	5
		07-08	**.102**	0.007	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.003**	0.001	11
		07-08	**.002**	0	6
	20-39	05-06	**.007**	0.001	9
		07-08	*	*	9
	40-59	05-06	**.031**	0.004	4
		07-08	**.037**	0.005	6
	60+	05-06	**.069**	0.018	4
		07-08	**.086**	0.009	5
Mexican American Female	12-19	05-06	**.002**	0	16
		07-08	*	*	5
	20-39	05-06	**.004**	0.001	9
		07-08	**.005**	0	8
	40-59	05-06	**.024**	0.003	6
		07-08	**.025**	0.006	6
	60+	05-06	**.052**	0.007	3
		07-08	**.054**	0.011	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2230
	03-04	*	**.900** (<LOD-1.01)	**1.98** (1.80-2.10)	**3.40** (3.10-3.60)	**4.51** (3.90-5.18)	1820
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	716
	03-04	*	< LOD	< LOD	< LOD	**1.74** (.720-3.82)	567
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1514
	03-04	**.800** (.721-.888)	**1.10** (.980-1.20)	**2.10** (2.00-2.30)	**3.53** (3.20-3.74)	**4.68** (4.12-5.19)	1253
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1035
	03-04	*	**.800** (<LOD-1.00)	**2.08** (1.82-2.20)	**3.50** (3.12-3.70)	**4.60** (3.82-5.40)	904
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1195
	03-04	*	**.970** (<LOD-1.10)	**1.85** (1.64-2.09)	**3.30** (2.86-3.60)	**4.50** (3.57-5.25)	916
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	544
	03-04	*	< LOD	< LOD	**1.80** (1.11-2.40)	**2.40** (1.80-3.50)	407
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	490
	03-04	**.709** (<LOD-.870)	**.820** (<LOD-1.14)	**2.00** (1.65-2.57)	**4.18** (3.16-5.30)	**6.90** (4.18-8.10)	444
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1037
	03-04	**.749** (<LOD-.850)	**1.00** (.800-1.18)	**2.10** (1.90-2.30)	**3.40** (3.10-3.61)	**4.44** (3.80-5.19)	856

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 28.1 and 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.487**	0.129	12
		07-08	*	*	15
	40-59	05-06	**1.50**	0.29	12
		07-08	**1.25**	0.05	16
	60+	05-06	**2.52**	0.16	15
		07-08	**2.74**	0.16	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	**.936**	0.067	13
		07-08	**1.14**	0.08	17
	60+	05-06	**2.04**	0.16	17
		07-08	**2.38**	0.13	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.435**	0.047	6
		07-08	*	*	6
	40-59	05-06	**1.35**	0.13	5
		07-08	**1.80**	0.23	6
	60+	05-06	**3.40**	0.27	5
		07-08	**3.99**	0.53	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.348**	0.044	7
		07-08	*	*	8
	40-59	05-06	**1.41**	0.15	7
		07-08	**1.35**	0.17	8
	60+	05-06	**3.82**	0.76	5
		07-08	**3.94**	0.26	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**.766**	0.083	4
		07-08	**1.02**	0.11	6
	60+	05-06	**1.69**	0.4	4
		07-08	**2.24**	0.29	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.780**	0.083	6
		07-08	**.986**	0.187	6
	60+	05-06	**1.47**	0.06	3
		07-08	**1.98**	0.39	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2230
	03-04	*	.005 (<LOD-.006)	.012 (.012-.013)	.022 (.020-.025)	.031 (.027-.034)	1820
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	716
	03-04	*	< LOD	< LOD	< LOD	.007 (.004-.017)	567
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1514
	03-04	.005 (.004-.006)	.007 (.006-.007)	.014 (.012-.015)	.023 (.021-.026)	.032 (.028-.035)	1253
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1035
	03-04	*	.005 (<LOD-.006)	.013 (.012-.014)	.022 (.020-.025)	.031 (.025-.035)	904
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1195
	03-04	*	.006 (<LOD-.007)	.012 (.011-.013)	.021 (.019-.025)	.031 (.026-.035)	916
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	544
	03-04	*	< LOD	< LOD	.012 (.008-.018)	.018 (.013-.025)	407
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	490
	03-04	.004 (<LOD-.005)	.004 (<LOD-.006)	.012 (.010-.016)	.027 (.019-.034)	.041 (.029-.048)	444
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1037
	03-04	.005 (<LOD-.005)	.006 (.005-.007)	.013 (.012-.014)	.022 (.020-.025)	.030 (.027-.033)	856

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.004**	0.001	12
		07-08	*	*	15
	40-59	05-06	**.011**	0.002	12
		07-08	**.009**	0	16
	60+	05-06	**.017**	0.001	15
		07-08	**.018**	0.001	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	*	*	16
		07-08	*	*	13
	40-59	05-06	**.007**	0.001	13
		07-08	**.008**	0.001	17
	60+	05-06	**.015**	0.001	17
		07-08	**.016**	0.001	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.003**	0	6
		07-08	*	*	6
	40-59	05-06	**.009**	0.001	5
		07-08	**.012**	0.002	6
	60+	05-06	**.020**	0.001	5
		07-08	**.024**	0.004	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.002**	0	7
		07-08	*	*	8
	40-59	05-06	**.009**	0.001	7
		07-08	**.008**	0.001	8
	60+	05-06	**.025**	0.005	5
		07-08	**.024**	0.002	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	*	*	9
		07-08	*	*	9
	40-59	05-06	**.006**	0.001	4
		07-08	**.007**	0.001	6
	60+	05-06	**.012**	0.003	4
		07-08	**.016**	0.001	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.006**	0.001	6
		07-08	**.006**	0.001	6
	60+	05-06	**.011**	0.002	3
		07-08	**.014**	0.003	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6' and 2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 196 & 203) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	**14.2** (13.0-15.7)	**19.2** (17.4-20.9)	2299
	01-02	*	< LOD	< LOD	**14.2** (13.0-15.7)	**19.2** (17.4-20.9)	2299
	03-04	**2.61** (2.44-2.79)	**3.40** (3.01-3.80)	**6.70** (6.16-7.23)	**11.8** (10.8-12.7)	**15.0** (13.2-17.4)	1878
	03-04	**2.61** (2.44-2.79)	**3.40** (3.01-3.80)	**6.70** (6.16-7.23)	**11.8** (10.8-12.7)	**15.0** (13.2-17.4)	1878
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	755
	01-02	*	< LOD	< LOD	< LOD	< LOD	755
	03-04	**.437** (<LOD-.546)	**.520** (.400-.700)	**1.10** (.900-1.42)	**2.41** (1.86-3.19)	**3.59** (2.93-4.20)	587
	03-04	**.437** (<LOD-.546)	**.520** (.400-.700)	**1.10** (.900-1.42)	**2.41** (1.86-3.19)	**3.59** (2.93-4.20)	587
20 years and older	01-02	*	< LOD	< LOD	**15.0** (13.7-17.0)	**19.9** (18.2-21.4)	1544
	01-02	*	< LOD	< LOD	**15.0** (13.7-17.0)	**19.9** (18.2-21.4)	1544
	03-04	**3.37** (3.15-3.61)	**4.07** (3.74-4.46)	**7.30** (6.79-8.20)	**12.4** (11.5-13.2)	**15.9** (13.4-19.5)	1291
	03-04	**3.37** (3.15-3.61)	**4.07** (3.74-4.46)	**7.30** (6.79-8.20)	**12.4** (11.5-13.2)	**15.9** (13.4-19.5)	1291
Gender							
Males	01-02	*	< LOD	< LOD	**14.6** (13.3-16.5)	**19.4** (16.3-21.2)	1071
	01-02	*	< LOD	< LOD	**14.6** (13.3-16.5)	**19.4** (16.3-21.2)	1071
	03-04	**2.77** (2.49-3.08)	**3.45** (3.07-3.98)	**6.92** (6.12-7.71)	**12.5** (11.2-13.7)	**16.3** (13.7-23.1)	935
	03-04	**2.77** (2.49-3.08)	**3.45** (3.07-3.98)	**6.92** (6.12-7.71)	**12.5** (11.2-13.7)	**16.3** (13.7-23.1)	935
Females	01-02	*	< LOD	< LOD	**13.8** (11.9-15.9)	**19.1** (17.0-21.3)	1228
	01-02	*	< LOD	< LOD	**13.8** (11.9-15.9)	**19.1** (17.0-21.3)	1228
	03-04	**2.46** (2.27-2.66)	**3.32** (2.83-3.80)	**6.68** (6.12-7.20)	**11.1** (9.74-12.3)	**13.4** (12.8-14.9)	943
	03-04	**2.46** (2.27-2.66)	**3.32** (2.83-3.80)	**6.68** (6.12-7.20)	**11.1** (9.74-12.3)	**13.4** (12.8-14.9)	943
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	**11.1** (<LOD-12.5)	565
	01-02	*	< LOD	< LOD	< LOD	**11.1** (<LOD-12.5)	565
	03-04	**.947** (.689-1.30)	**1.00** (.700-1.50)	**2.80** (1.60-4.30)	**5.90** (4.30-7.40)	**8.35** (6.00-12.3)	424
	03-04	**.947** (.689-1.30)	**1.00** (.700-1.50)	**2.80** (1.60-4.30)	**5.90** (4.30-7.40)	**8.35** (6.00-12.3)	424
Non-Hispanic blacks	01-02	*	< LOD	< LOD	**17.6** (14.2-21.0)	**23.1** (19.6-30.2)	513
	01-02	*	< LOD	< LOD	**17.6** (14.2-21.0)	**23.1** (19.6-30.2)	513
	03-04	**2.45** (2.06-2.90)	**2.90** (2.33-3.80)	**7.18** (5.80-9.00)	**13.8** (11.5-16.8)	**21.6** (14.0-32.3)	453
	03-04	**2.45** (2.06-2.90)	**2.90** (2.33-3.80)	**7.18** (5.80-9.00)	**13.8** (11.5-16.8)	**21.6** (14.0-32.3)	453
Non-Hispanic whites	01-02	*	< LOD	< LOD	**14.7** (13.6-16.5)	**19.6** (18.1-21.3)	1058
	01-02	*	< LOD	< LOD	**14.7** (13.6-16.5)	**19.6** (18.1-21.3)	1058
	03-04	**3.01** (2.76-3.27)	**3.88** (3.44-4.20)	**7.10** (6.32-8.20)	**11.8** (10.8-13.1)	**15.4** (12.9-19.0)	882
	03-04	**3.01** (2.76-3.27)	**3.88** (3.44-4.20)	**7.10** (6.32-8.20)	**11.8** (10.8-13.1)	**15.4** (12.9-19.0)	882

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6' and 2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 196 & 203) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.793**	0.071	9
		07-08	**.667**	0.151	6
	20-39	05-06	**2.63**	0.69	12
		07-08	**2.15**	0.14	15
	40-59	05-06	**8.33**	0.94	12
		07-08	**6.45**	0.25	16
	60+	05-06	**15.4**	0.8	15
		07-08	**15.3**	0.8	23
Non-Hispanic White Female	12-19	05-06	**.593**	0.046	10
		07-08	*	*	7
	20-39	05-06	**1.49**	0.12	16
		07-08	**1.72**	0.21	13
	40-59	05-06	**5.23**	0.24	13
		07-08	**5.27**	0.3	17
	60+	05-06	**12.6**	1	17
		07-08	**12.2**	0.7	21
Non-Hispanic Black Male	12-19	05-06	**.937**	0.103	13
		07-08	*	*	6
	20-39	05-06	**2.34**	0.22	6
		07-08	**1.79**	0.18	6
	40-59	05-06	**8.31**	0.66	5
		07-08	**8.17**	0.91	6
	60+	05-06	**20.9**	2.2	5
		07-08	**19.8**	2.3	8
Non-Hispanic Black Female	12-19	05-06	**.557**	0.039	14
		07-08	*	*	5
	20-39	05-06	**1.61**	0.22	7
		07-08	**1.40**	0.21	8
	40-59	05-06	**7.01**	0.65	7
		07-08	**6.50**	0.73	8
	60+	05-06	**21.2**	4.7	5
		07-08	**18.1**	1.4	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6' and 2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 196 & 203) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations† (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.500**	0.047	11
		07-08	**.514**	0.087	6
	20-39	05-06	**1.16**	0.1	9
		07-08	****1.97**	0.7	9
	40-59	05-06	**3.85**	0.42	4
		07-08	**4.71**	0.62	6
	60+	05-06	**9.56**	2.38	4
		07-08	**10.6**	1.8	5
Mexican American Female	12-19	05-06	**.464**	0.05	16
		07-08	*****	*	5
	20-39	05-06	**.770**	0.121	9
		07-08	**1.02**	0.04	8
	40-59	05-06	**3.87**	0.54	6
		07-08	**4.02**	0.61	6
	60+	05-06	**7.87**	0.44	3
		07-08	**7.87**	1.56	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6' and 2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 196 & 203) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	.100 (.090-.110)	.130 (.110-.140)	2299
	01-02	*	< LOD	< LOD	.100 (.090-.110)	.130 (.110-.140)	2299
	03-04	.016 (.015-.017)	.022 (.019-.025)	.044 (.042-.048)	.082 (.071-.087)	.101 (.091-.112)	1878
	03-04	.016 (.015-.017)	.022 (.019-.025)	.044 (.042-.048)	.082 (.071-.087)	.101 (.091-.112)	1878
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	755
	01-02	*	< LOD	< LOD	< LOD	< LOD	755
	03-04	.002 (<LOD-.003)	.003 (.002-.004)	.006 (.005-.007)	.013 (.009-.016)	.016 (.014-.025)	587
	03-04	.002 (<LOD-.003)	.003 (.002-.004)	.006 (.005-.007)	.013 (.009-.016)	.016 (.014-.025)	587
20 years and older	01-02	*	< LOD	< LOD	.100 (.090-.110)	.130 (.120-.150)	1544
	01-02	*	< LOD	< LOD	.100 (.090-.110)	.130 (.120-.150)	1544
	03-04	.021 (.020-.023)	.026 (.024-.028)	.049 (.045-.052)	.084 (.077-.090)	.104 (.092-.123)	1291
	03-04	.021 (.020-.023)	.026 (.024-.028)	.049 (.045-.052)	.084 (.077-.090)	.104 (.092-.123)	1291
Gender							
Males	01-02	*	< LOD	< LOD	.100 (.090-.120)	.130 (.110-.150)	1071
	01-02	*	< LOD	< LOD	.100 (.090-.120)	.130 (.110-.150)	1071
	03-04	.017 (.015-.019)	.023 (.020-.026)	.045 (.042-.050)	.084 (.077-.091)	.106 (.093-.127)	935
	03-04	.017 (.015-.019)	.023 (.020-.026)	.045 (.042-.050)	.084 (.077-.091)	.106 (.093-.127)	935
Females	01-02	*	< LOD	< LOD	.090 (.080-.100)	.130 (.110-.140)	1228
	01-02	*	< LOD	< LOD	.090 (.080-.100)	.130 (.110-.140)	1228
	03-04	.015 (.014-.016)	.020 (.017-.023)	.043 (.038-.047)	.076 (.066-.084)	.093 (.085-.111)	943
	03-04	.015 (.014-.016)	.020 (.017-.023)	.043 (.038-.047)	.076 (.066-.084)	.093 (.085-.111)	943
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	.070 (<LOD-.090)	565
	01-02	*	< LOD	< LOD	< LOD	.070 (<LOD-.090)	565
	03-04	.006 (.004-.008)	.007 (.004-.010)	.017 (.011-.026)	.038 (.028-.054)	.058 (.035-.087)	424
	03-04	.006 (.004-.008)	.007 (.004-.010)	.017 (.011-.026)	.038 (.028-.054)	.058 (.035-.087)	424
Non-Hispanic blacks	01-02	*	< LOD	< LOD	.110 (.090-.140)	.150 (.110-.210)	513
	01-02	*	< LOD	< LOD	.110 (.090-.140)	.150 (.110-.210)	513
	03-04	.014 (.012-.017)	.017 (.012-.022)	.046 (.038-.054)	.090 (.065-.111)	.141 (.094-.209)	453
	03-04	.014 (.012-.017)	.017 (.012-.022)	.046 (.038-.054)	.090 (.065-.111)	.141 (.094-.209)	453
Non-Hispanic whites	01-02	*	< LOD	< LOD	.100 (.090-.110)	.130 (.110-.140)	1058
	01-02	*	< LOD	< LOD	.100 (.090-.110)	.130 (.110-.140)	1058
	03-04	.019 (.017-.020)	.025 (.022-.028)	.048 (.043-.052)	.084 (.070-.090)	.100 (.090-.120)	882
	03-04	.019 (.017-.020)	.025 (.022-.028)	.048 (.043-.052)	.084 (.070-.090)	.100 (.090-.120)	882

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6' and 2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 196 & 203) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations† (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.004**	0	9
		07-08	**.003**	0.001	6
	20-39	05-06	**.020**	0.006	12
		07-08	**.014**	0.001	15
	40-59	05-06	**.063**	0.008	12
		07-08	**.047**	0.002	16
	60+	05-06	**.104**	0.004	15
		07-08	**.098**	0.005	23
Non-Hispanic White Female	12-19	05-06	**.003**	0	10
		07-08	*	*	7
	20-39	05-06	**.010**	0.001	16
		07-08	**.010**	0.001	13
	40-59	05-06	**.039**	0.003	13
		07-08	**.035**	0.002	17
	60+	05-06	**.091**	0.007	17
		07-08	**.082**	0.005	21
Non-Hispanic Black Male	12-19	05-06	**.005**	0	13
		07-08	*	*	6
	20-39	05-06	**.014**	0.001	6
		07-08	**.010**	0.001	6
	40-59	05-06	**.053**	0.004	5
		07-08	**.053**	0.006	6
	60+	05-06	**.125**	0.013	5
		07-08	**.121**	0.016	8
Non-Hispanic Black Female	12-19	05-06	**.003**	0	14
		07-08	*	*	5
	20-39	05-06	**.009**	0.001	7
		07-08	**.007**	0.001	8
	40-59	05-06	**.045**	0.004	7
		07-08	**.039**	0.005	8
	60+	05-06	**.140**	0.031	5
		07-08	**.108**	0.008	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,6' and 2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 196 & 203) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.003**	0	11
		07-08	**.003**	0	6
	20-39	05-06	**.008**	0.001	9
		07-08	*	*	9
	40-59	05-06	**.032**	0.004	4
		07-08	**.033**	0.004	6
	60+	05-06	**.069**	0.017	4
		07-08	**.075**	0.011	5
Mexican American Female	12-19	05-06	**.003**	0	16
		07-08	*	*	5
	20-39	05-06	**.005**	0.001	9
		07-08	**.006**	0	8
	40-59	05-06	**.028**	0.003	6
		07-08	**.027**	0.004	6
	60+	05-06	**.060**	0.008	3
		07-08	**.054**	0.011	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 199) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	**17.0** (15.4-18.1)	**22.4** (19.9-25.9)	2292
	03-04	**2.81** (2.64-3.00)	**3.80** (3.26-4.26)	**8.30** (7.70-9.08)	**14.9** (13.8-15.7)	**18.9** (17.9-21.3)	1861
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	**.416** (<LOD-.522)	**.500** (<LOD-.700)	**1.17** (.890-1.59)	**2.43** (2.02-2.73)	**3.92** (2.90-4.10)	579
20 years and older	01-02	*	< LOD	**10.6** (<LOD-11.8)	**17.9** (16.2-19.2)	**24.4** (20.7-27.4)	1536
	03-04	**3.71** (3.41-4.02)	**4.60** (4.10-5.08)	**9.40** (8.73-10.0)	**15.7** (14.7-16.9)	**20.6** (18.3-23.6)	1282
Gender							
Males	01-02	*	< LOD	< LOD	**17.3** (15.4-18.7)	**21.3** (19.3-24.6)	1066
	03-04	**3.01** (2.68-3.39)	**3.95** (3.30-4.67)	**9.10** (7.60-9.94)	**16.6** (14.0-17.3)	**22.1** (18.1-27.4)	925
Females	01-02	*	< LOD	< LOD	**16.2** (14.5-17.9)	**22.9** (19.4-27.3)	1226
	03-04	**2.63** (2.49-2.79)	**3.70** (3.20-4.00)	**7.70** (6.92-8.81)	**14.0** (11.6-15.3)	**17.0** (15.7-18.9)	936
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	**12.3** (<LOD-14.2)	565
	03-04	**.943** (.664-1.34)	**1.00** (.600-1.50)	**3.35** (1.50-5.33)	**7.37** (5.10-10.2)	**10.2** (7.40-13.5)	418
Non-Hispanic blacks	01-02	*	< LOD	**12.5** (<LOD-15.3)	**21.9** (17.0-28.1)	**30.7** (22.4-37.4)	513
	03-04	**3.03** (2.46-3.74)	**3.60** (2.70-4.70)	**10.0** (7.70-13.7)	**21.3** (15.9-30.4)	**35.1** (21.3-43.3)	452
Non-Hispanic whites	01-02	*	< LOD	< LOD	**17.3** (15.9-18.9)	**22.7** (19.8-26.3)	1051
	03-04	**3.24** (3.03-3.47)	**4.19** (3.78-4.69)	**9.08** (7.88-9.86)	**14.8** (13.5-16.3)	**18.6** (16.9-21.7)	871

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 0.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 199) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.629**	0.101	9
		07-08	*	*	6
	20-39	05-06	**2.45**	0.63	12
		07-08	**2.12**	0.18	15
	40-59	05-06	**8.40**	0.83	12
		07-08	**6.73**	0.4	16
	60+	05-06	**17.5**	1.1	15
		07-08	**16.9**	1	23
Non-Hispanic White Female	12-19	05-06	**.540**	0.058	10
		07-08	*	*	7
	20-39	05-06	**1.37**	0.12	16
		07-08	**1.61**	0.18	13
	40-59	05-06	**5.45**	0.34	13
		07-08	**5.27**	0.38	17
	60+	05-06	**15.1**	1.2	17
		07-08	**14.7**	0.9	21
Non-Hispanic Black Male	12-19	05-06	**.851**	0.108	13
		07-08	*	*	6
	20-39	05-06	**2.43**	0.32	6
		07-08	**1.70**	0.17	6
	40-59	05-06	**10.7**	0.9	5
		07-08	**9.25**	1.05	6
	60+	05-06	**28.0**	3.6	5
		07-08	**24.6**	2.9	8
Non-Hispanic Black Female	12-19	05-06	**.490**	0.051	14
		07-08	*	*	5
	20-39	05-06	**1.59**	0.24	7
		07-08	**1.36**	0.17	8
	40-59	05-06	**8.16**	1.04	7
		07-08	**6.94**	0.87	8
	60+	05-06	**27.6**	6	5
		07-08	**22.0**	1.8	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 199) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.395**	0.045	11
		07-08	*	*	6
	20-39	05-06	**1.03**	0.11	9
		07-08	**1.92	0.79	9
	40-59	05-06	**4.23**	0.49	4
		07-08	**5.47**	0.92	6
	60+	05-06	**10.1**	2.6	4
		07-08	**11.4**	1.6	5
Mexican American Female	12-19	05-06	**.386**	0.052	16
		07-08	*	*	5
	20-39	05-06	**.634**	0.11	9
		07-08	**.843**	0.031	8
	40-59	05-06	**3.67**	0.52	6
		07-08	**4.09**	0.69	6
	60+	05-06	**8.79**	0.55	3
		07-08	**8.71**	1.93	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 199) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	.110 (.100-.130)	.150 (.140-.170)	2292
	03-04	.017 (.016-.018)	.023 (.020-.027)	.056 (.053-.060)	.100 (.091-.106)	.127 (.119-.144)	1861
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	.002 (<LOD-.003)	.002 (<LOD-.003)	.006 (.005-.008)	.012 (.009-.015)	.016 (.015-.019)	579
20 years and older	01-02	*	< LOD	.070 (<LOD-.080)	.120 (.110-.140)	.160 (.140-.180)	1536
	03-04	.023 (.021-.025)	.029 (.026-.033)	.062 (.058-.067)	.106 (.097-.113)	.135 (.120-.158)	1282
Gender							
Males	01-02	*	< LOD	< LOD	.110 (.100-.130)	.150 (.130-.180)	1066
	03-04	.019 (.016-.021)	.025 (.020-.030)	.059 (.053-.068)	.105 (.090-.113)	.138 (.120-.162)	925
Females	01-02	*	< LOD	< LOD	.110 (.100-.130)	.150 (.130-.170)	1226
	03-04	.016 (.015-.017)	.022 (.019-.025)	.054 (.047-.058)	.094 (.085-.105)	.120 (.108-.133)	936
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	.090 (<LOD-.110)	565
	03-04	.006 (.004-.008)	.007 (.004-.010)	.019 (.011-.031)	.051 (.029-.079)	.079 (.051-.093)	418
Non-Hispanic blacks	01-02	*	< LOD	.070 (<LOD-.090)	.140 (.100-.180)	.190 (.130-.300)	513
	03-04	.017 (.014-.021)	.021 (.015-.026)	.064 (.054-.073)	.135 (.102-.173)	.207 (.147-.297)	452
Non-Hispanic whites	01-02	*	< LOD	< LOD	.120 (.100-.130)	.150 (.130-.180)	1051
	03-04	.020 (.019-.022)	.027 (.023-.030)	.059 (.054-.065)	.101 (.087-.108)	.125 (.108-.144)	871

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 199) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.003**	0.001	9
		07-08	*	*	6
	20-39	05-06	**.019**	0.006	12
		07-08	**.014**	0.001	15
	40-59	05-06	**.063**	0.005	12
		07-08	**.049**	0.003	16
	60+	05-06	**.118**	0.006	15
		07-08	**.109**	0.006	23
Non-Hispanic White Female	12-19	05-06	**.003**	0	10
		07-08	*	*	7
	20-39	05-06	**.009**	0.001	16
		07-08	**.010**	0.001	13
	40-59	05-06	**.041**	0.004	13
		07-08	**.035**	0.003	17
	60+	05-06	**.110**	0.009	17
		07-08	**.099**	0.006	21
Non-Hispanic Black Male	12-19	05-06	**.004**	0.001	13
		07-08	*	*	6
	20-39	05-06	**.014**	0.002	6
		07-08	**.010**	0.001	6
	40-59	05-06	**.069**	0.006	5
		07-08	**.059**	0.007	6
	60+	05-06	**.168**	0.024	5
		07-08	**.150**	0.02	8
Non-Hispanic Black Female	12-19	05-06	**.002**	0	14
		07-08	*	*	5
	20-39	05-06	**.009**	0.001	7
		07-08	**.007**	0.001	8
	40-59	05-06	**.052**	0.006	7
		07-08	**.042**	0.006	8
	60+	05-06	**.183**	0.039	5
		07-08	**.132**	0.011	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 199) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	**.002**	0	11
		07-08	*	*	6
	20-39	05-06	**.007**	0.001	9
		07-08	*	*	9
	40-59	05-06	**.035**	0.005	4
		07-08	**.038**	0.006	6
	60+	05-06	**.073**	0.02	4
		07-08	**.081**	0.009	5
Mexican American Female	12-19	05-06	**.002**	0	16
		07-08	*	*	5
	20-39	05-06	**.004**	0.001	9
		07-08	**.005**	0	8
	40-59	05-06	**.027**	0.003	6
		07-08	**.028**	0.004	6
	60+	05-06	**.068**	0.01	3
		07-08	**.060**	0.014	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2208
	03-04	**2.13** (1.97-2.31)	**2.34** (2.00-2.60)	**5.00** (4.69-5.50)	**9.20** (8.55-9.79)	**13.7** (11.5-15.6)	1867
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	723
	03-04	*	< LOD	**.900** (.750-1.20)	**1.75** (1.23-2.92)	**3.12** (1.60-6.91)	585
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1485
	03-04	**2.59** (2.37-2.83)	**2.80** (2.42-3.06)	**5.53** (5.10-6.10)	**9.61** (9.03-11.0)	**14.2** (12.2-17.1)	1282
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1033
	03-04	**2.23** (2.03-2.45)	**2.30** (1.90-2.70)	**5.10** (4.78-5.53)	**9.31** (8.18-10.8)	**13.8** (10.8-15.7)	933
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1175
	03-04	**2.05** (1.86-2.25)	**2.34** (1.95-2.78)	**5.00** (4.30-5.70)	**9.00** (8.00-9.79)	**13.6** (11.2-16.5)	934
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	533
	03-04	**.861** (<LOD-1.15)	**.730** (<LOD-1.10)	**1.70** (1.00-3.14)	**4.40** (2.61-6.20)	**6.20** (4.40-8.40)	421
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	483
	03-04	**2.27** (1.98-2.60)	**2.26** (1.85-2.51)	**5.60** (4.30-7.40)	**11.5** (9.49-16.5)	**20.9** (12.1-31.7)	456
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1034
	03-04	**2.40** (2.19-2.63)	**2.70** (2.37-3.01)	**5.37** (4.88-6.06)	**9.20** (8.65-10.1)	**13.8** (11.2-16.6)	872

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 28.1 and 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.392**	0.038	9
		07-08	*	*	6
	20-39	05-06	**1.24**	0.26	12
		07-08	**1.19**	0.09	15
	40-59	05-06	**3.97**	0.23	12
		07-08	**3.46**	0.26	16
	60+	05-06	**10.3**	0.7	15
		07-08	**8.72**	0.48	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	**.486**	0.089	7
	20-39	05-06	**.778**	0.066	16
		07-08	**.970**	0.116	13
	40-59	05-06	**2.94**	0.22	13
		07-08	**2.93**	0.21	17
	60+	05-06	**11.2**	1.3	17
		07-08	**9.65**	0.75	21
Non-Hispanic Black Male	12-19	05-06	**.519**	0.052	13
		07-08	**.427**	0.112	6
	20-39	05-06	**1.27**	0.13	6
		07-08	**1.10**	0.13	6
	40-59	05-06	**6.34**	0.29	5
		07-08	**4.69**	0.43	6
	60+	05-06	**17.8**	3.2	5
		07-08	**13.7**	1.7	8
Non-Hispanic Black Female	12-19	05-06	**.333**	0.028	14
		07-08	*	*	5
	20-39	05-06	**.953**	0.119	7
		07-08	**.861**	0.122	8
	40-59	05-06	**4.56**	0.47	7
		07-08	**3.75**	0.52	8
	60+	05-06	**21.1**	4.7	5
		07-08	**14.9**	1.7	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.528**	0.046	9
		07-08	****1.32**	0.61	9
	40-59	05-06	**2.01**	0.24	4
		07-08	**2.47**	0.34	6
	60+	05-06	**5.50**	1.47	4
		07-08	**5.60**	0.7	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.351**	0.047	9
		07-08	**.509**	0.087	8
	40-59	05-06	**1.91**	0.28	6
		07-08	**2.01**	0.29	6
	60+	05-06	**5.76**	0.27	3
		07-08	**5.10**	1.24	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2208
	03-04	**.013** (.012-.014)	**.015** (.012-.017)	**.034** (.031-.037)	**.060** (.054-.068)	**.086** (.077-.104)	1867
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	723
	03-04	*	< LOD	**.005** (.004-.006)	**.010** (.006-.013)	**.014** (.008-.035)	585
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1485
	03-04	**.016** (.015-.018)	**.017** (.016-.020)	**.038** (.034-.042)	**.066** (.059-.074)	**.090** (.081-.112)	1282
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1033
	03-04	**.014** (.012-.015)	**.015** (.012-.018)	**.034** (.032-.038)	**.060** (.051-.070)	**.082** (.070-.097)	933
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1175
	03-04	**.012** (.011-.014)	**.014** (.012-.016)	**.035** (.029-.038)	**.061** (.054-.069)	**.088** (.078-.118)	934
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	533
	03-04	**.005** (<LOD-.007)	**.005** (<LOD-.007)	**.011** (.008-.018)	**.031** (.019-.044)	**.044** (.030-.062)	421
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	483
	03-04	**.013** (.011-.015)	**.012** (.010-.014)	**.035** (.028-.045)	**.078** (.052-.107)	**.128** (.080-.213)	456
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1034
	03-04	**.015** (.013-.016)	**.017** (.015-.020)	**.036** (.033-.040)	**.063** (.058-.069)	**.088** (.077-.107)	872

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	**.002**	0	9
		07-08	*	*	6
	20-39	05-06	**.009**	0.002	12
		07-08	**.008**	0.001	15
	40-59	05-06	**.030**	0.002	12
		07-08	**.025**	0.002	16
	60+	05-06	**.070**	0.004	15
		07-08	**.056**	0.003	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	**.002**	0	7
	20-39	05-06	**.005**	0	16
		07-08	**.006**	0.001	13
	40-59	05-06	**.022**	0.002	13
		07-08	**.019**	0.001	17
	60+	05-06	**.081**	0.009	17
		07-08	**.065**	0.005	21
Non-Hispanic Black Male	12-19	05-06	**.003**	0	13
		07-08	**.002**	0	6
	20-39	05-06	**.007**	0.001	6
		07-08	**.006**	0.001	6
	40-59	05-06	**.040**	0.003	5
		07-08	**.030**	0.003	6
	60+	05-06	**.107**	0.02	5
		07-08	**.084**	0.012	8
Non-Hispanic Black Female	12-19	05-06	**.002**	0	14
		07-08	*	*	5
	20-39	05-06	**.005**	0.001	7
		07-08	**.004**	0.001	8
	40-59	05-06	**.029**	0.003	7
		07-08	**.023**	0.004	8
	60+	05-06	**.140**	0.03	5
		07-08	**.090**	0.01	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.004**	0	9
		07-08	*	*	9
	40-59	05-06	**.016**	0.002	4
		07-08	**.017**	0.002	6
	60+	05-06	**.040**	0.012	4
		07-08	**.040**	0.004	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	**.002**	0	9
		07-08	**.003**	0	8
	40-59	05-06	**.014**	0.002	6
		07-08	**.014**	0.002	6
	60+	05-06	**.044**	0.005	3
		07-08	**.035**	0.009	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (PCB 209) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.40** (1.21-1.61)	**1.18** (1.00-1.48)	**3.20** (2.67-4.01)	**7.58** (6.20-8.81)	**11.1** (9.00-15.7)	1854
Age group							
12-19 years	03-04	*	**< LOD**	**< LOD**	**1.12** (.800-4.60)	**3.49** (1.12-6.64)	578
20 years and older	03-04	**1.63** (1.42-1.88)	**1.40** (1.18-1.70)	**3.80** (3.04-4.44)	**8.09** (6.60-9.30)	**12.3** (9.05-18.0)	1276
Gender							
Males	03-04	**1.37** (1.18-1.60)	**1.15** (1.00-1.50)	**3.00** (2.70-3.58)	**6.22** (4.97-8.20)	**9.10** (7.09-13.0)	925
Females	03-04	**1.42** (1.22-1.66)	**1.20** (1.00-1.50)	**3.46** (2.45-4.61)	**8.78** (7.45-9.47)	**13.9** (10.0-18.7)	929
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**1.10** (.770-1.60)	**2.40** (1.60-3.60)	**3.71** (2.40-4.97)	416
Non-Hispanic blacks	03-04	**1.56** (1.37-1.78)	**1.35** (1.10-1.52)	**3.40** (2.62-4.82)	**9.83** (6.70-13.6)	**18.0** (11.8-27.7)	455
Non-Hispanic whites	03-04	**1.53** (1.31-1.79)	**1.30** (1.09-1.70)	**3.89** (3.04-4.50)	**7.95** (6.49-9.09)	**11.3** (9.07-16.3)	864

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (PCB 209) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.664**	0.144	12
		07-08	**.654**	0.097	15
	40-59	05-06	**1.78**	0.14	12
		07-08	**1.86**	0.18	16
	60+	05-06	**7.07**	0.6	15
		07-08	**7.12**	0.68	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**.374**	0.033	16
		07-08	**.420**	0.073	13
	40-59	05-06	**1.36**	0.12	13
		07-08	**1.64**	0.16	17
	60+	05-06	**11.2**	1.5	17
		07-08	**11.0**	1.2	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.797**	0.226	6
		07-08	**.500**	0.107	6
	40-59	05-06	**4.04**	0.4	5
		07-08	**2.72**	0.39	6
	60+	05-06	**14.7**	2.6	5
		07-08	**13.4**	1.9	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.570**	0.093	7
		07-08	*	*	8
	40-59	05-06	**2.80**	0.3	7
		07-08	**2.36**	0.38	8
	60+	05-06	**21.6**	4.9	5
		07-08	**16.0**	2.5	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (PCB 209) (lipid adjusted)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.317**	0.029	9
		07-08	**.330**	0.075	9
	40-59	05-06	**.846**	0.084	4
		07-08	**1.21**	0.17	6
	60+	05-06	****3.91**	1.65	4
		07-08	**4.41**	0.65	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**1.01**	0.15	6
		07-08	**1.44**	0.39	6
	60+	05-06	**4.98**	0.24	3
		07-08	****4.83**	1.49	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
Limit of detection (LOD, see Data Analysis section) for Survey years 05-06 and 07-08 are 0.31 and 0.3.
*** Not calculated: proportion of results below limit of detection was too high to provide a valid result.**
****Standard error of the mean estimate is >30%.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (PCB 209) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the following page for data from later NHANES Survey periods.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**.009** (.007-.010)	**.008** (.006-.009)	**.021** (.017-.026)	**.049** (.040-.058)	**.073** (.059-.097)	1854
Age group							
12-19 years	03-04	*	**< LOD**	**< LOD**	**.006** (.004-.018)	**.017** (.005-.033)	578
20 years and older	03-04	**.010** (.009-.012)	**.009** (.008-.011)	**.024** (.020-.028)	**.053** (.044-.063)	**.077** (.065-.105)	1276
Gender							
Males	03-04	**.008** (.007-.010)	**.008** (.006-.010)	**.019** (.017-.023)	**.039** (.032-.051)	**.063** (.042-.077)	925
Females	03-04	**.009** (.007-.010)	**.008** (.006-.009)	**.024** (.016-.032)	**.057** (.049-.064)	**.092** (.068-.134)	929
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**.007** (.005-.010)	**.018** (.010-.023)	**.024** (.018-.035)	416
Non-Hispanic blacks	03-04	**.009** (.008-.010)	**.008** (.006-.009)	**.022** (.018-.027)	**.065** (.039-.077)	**.097** (.065-.144)	455
Non-Hispanic whites	03-04	**.009** (.008-.011)	**.009** (.007-.011)	**.024** (.020-.029)	**.053** (.044-.061)	**.076** (.063-.099)	864

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (PCB 209) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.
See the previous page for data from earlier NHANES Survey periods.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Non-Hispanic White Male	12-19	05-06	*	*	9
		07-08	*	*	6
	20-39	05-06	**.005**	0.001	12
		07-08	**.004**	0.001	15
	40-59	05-06	**.013**	0.001	12
		07-08	**.014**	0.001	16
	60+	05-06	**.048**	0.004	15
		07-08	**.045**	0.004	23
Non-Hispanic White Female	12-19	05-06	*	*	10
		07-08	*	*	7
	20-39	05-06	**.002**	0	16
		07-08	**.003**	0	13
	40-59	05-06	**.010**	0.001	13
		07-08	**.011**	0.001	17
	60+	05-06	**.080**	0.01	17
		07-08	**.074**	0.008	21
Non-Hispanic Black Male	12-19	05-06	*	*	13
		07-08	*	*	6
	20-39	05-06	**.005**	0.001	6
		07-08	**.003**	0	6
	40-59	05-06	**.026**	0.003	5
		07-08	**.017**	0.003	6
	60+	05-06	**.089**	0.017	5
		07-08	**.082**	0.013	8
Non-Hispanic Black Female	12-19	05-06	*	*	14
		07-08	*	*	5
	20-39	05-06	**.003**	0.001	7
		07-08	*	*	8
	40-59	05-06	**.018**	0.002	7
		07-08	**.014**	0.003	8
	60+	05-06	**.142**	0.03	5
		07-08	**.096**	0.015	7

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Serum 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (PCB 209) (whole weight)

Weighted arithmetic mean and unadjusted standard error of pooled serum concentrations†
(in ng/g of serum or parts per billion) for the U.S. population from
the National Health and Nutrition Examination Survey.

Category	Age (years)	Survey years	Weighted arithmetic mean	Unadjusted standard error	Number of pools ‡
Mexican American Male	12-19	05-06	*	*	11
		07-08	*	*	6
	20-39	05-06	**.002**	0	9
		07-08	**.002**	0.001	9
	40-59	05-06	**.007**	0.001	4
		07-08	**.008**	0.001	6
	60+	05-06	*	*	4
		07-08	**.031**	0.004	5
Mexican American Female	12-19	05-06	*	*	16
		07-08	*	*	5
	20-39	05-06	*	*	9
		07-08	*	*	8
	40-59	05-06	**.007**	0.001	6
		07-08	**.010**	0.003	6
	60+	05-06	**.038**	0.002	3
		07-08	*	*	5

†See Special Analysis of Pooled Samples for Select Chemicals for additional explanation.
‡ Each pool was composed of serum from 8 persons.
Weighted arithmetic means are not comparable to weighted geometric means.
Unadjusted standard errors do not incorporate survey design effects.
*** Not reported: proportion of results below limit of detection was too high to provide a valid result or standard error >30% of mean.**

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NDL-PCBs_BiomonitoringSummary.html

Appendix C. References for Biomonitoring Analytical Methods

Tobacco Smoke

Cotinine

Bernert JT, McGuffey JE, Morrison MA, Pirkle JL. Comparison of serum and salivary cotinine measurements by a sensitive high-performance liquid chromatography/tandem mass spectrometry method as an indicator of exposure to tobacco smoke among smokers and nonsmokers. J Anal Toxicol 2000;24:333-9.

Bernert JT, Turner WE, Pirkle JL, Sosnoff CS, Akins JR, Waldrep MK, et al. Development and validation of sensitive method for determination of serum cotinine in smokers and nonsmokers by liquid chromatography/atmospheric pressure ionization tandem mass spectrometry. Clin Chem 1997;43:2281-91.

NNAL

Xia Y, Bernert JT. Stability of the tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) in urine samples stored at various temperatures. J Anal Toxicol 2010:34:411-5.

Xia Y, McGuffey JE, Bhattacharyya S, Sellergren B, Yilmaz E, Wang L, et al. Analysis of the tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol in urine by extraction on a molecularly imprinted polymer column and liquid chromatography/ atmospheric pressure ionization tandem mass spectrometry. Anal Chem. 2005;77(23):7639-45.

Environmental Phenols

Ye X, Kuklenyik Z, Needham LL, Calafat AM. Automated on-line column-switching HPLC-MS/MS method with peak focusing for the determination of nine environmental phenols in urine. Anal Chem 2005;77:5407-13.

Fungicides and Metabolites

Bravo R, Caltabiano LM, Fernandez C, Smith KD, Gallegos M, Whitehead RD, et al. Quantification of phenolic metabolites of environmental chemicals in human urine using gas chromatography-tandem mass spectrometry and isotope dilution quantification. J Chromatog B 2005;820(2):229-36.

Hill RH Jr, Shealy DB, Head SL, Williams CC, Bailey SL, Gregg M, et al. Determination of pesticide metabolites in human urine using isotope dilution technique and tandem mass spectrometry. J Anal Toxicol 1995;19(5):323-9.

Montesano MA, Olsson AO, Kuklenyik P, Needham LL, Bradman AS, Barr DB. Method for determination of acephate, methamidophos, omethoate, dimethoate, ethylenethiourea and propylenethiourea in human urine using high-performance liquid chromatography-atmospheric pressure chemical ionization tandem mass spectrometry. J Expo Sci Environ Epidemiol. 2007;17(4):321-30.

Herbicides and Metabolites

2,4-D and 2,4,5-T

Davis MD, Wade EL, Restrepo PR, Roman-Esteva W, Bravo R, Kuklenyik P, Calafat AM. Semi-automated solid phase extraction method for the mass spectrometric quantification of 12 specific metabolites of organophosphorus pesticides, synthetic pyrethroids, and select herbicides in human urine. J Chromatogr B 2013;929:18-26. (NHANES 2007-2008 and later)

Olsson AO, Baker SE, Nguyen JV, Romanoff LC, Udunka SO, Walker RD, et al. A liquid chromatography-tandem mass spectrometry multiresidue method for quantification of specific metabolites of organophosphorus pesticides, synthetic pyrethroids, selected herbicides, and DEET in human urine. Anal Chem 2004;76(9):2453-61. (NHANES 1999-2004)

Sulfonylurea Herbicides

Nguyen JV, Olsson AO, Bravo R, Needham LL, Barr DB. Quantification of atrazine, phenylurea, and sulfonylurea herbicide metabolites in urine by high-performance liquid chromatography-tandem mass spectrometry. J Anal Toxicol. 2007;31(4):181-6.

Baker SE, Olsson AO, Needham LL, Barr DB. High-performance liquid chromatography-tandem mass spectrometry method for quantifying sulfonylurea herbicides in human urine: reconsidering the validation process. Anal Bioanal Chem 2005; 383:963-76.

Insecticides and Pesticides

Carbamate Pesticide Metabolites

Bravo R, Caltabiano LM, Fernandez C, Smith KD, Gallegos M, Whitehead RD, et al. Quantification of phenolic metabolites of environmental chemicals in human urine using gas chromatography-tandem mass spectrometry and isotope dilution quantification. J Chromatog B 2005;820(2):229-36.

Hill RH Jr, Shealy DB, Head SL, Williams CC, Bailey SL, Gregg M, et al. Determination of pesticide metabolites in human urine using isotope dilution technique and tandem mass spectrometry. J Anal Toxicol 1995;19(5):323-9.

Organochlorine Pesticides and Metabolites (Individual and Pooled Samples)

Barr JB, Maggio VL, Barr DB, Turner WE, Sjodin A, Sandau CD, et al. New high-resolution mass spectrometric approach for the measurement of polychlorinated biphenyls and organochlorine pesticides in human serum. J Chromatog B 2003;794:137-48.

Jones R, Edenfield E, Anderson S, Zhang Y and Sjodin A. Semi-automated Extraction and Cleanup Method for Measuring Persistent Organic Pollutants in Human Serum. Organohalogen Compounds 2012;74:97-8.

Sjodin A, Jones RS, Lapeza CR, Focant J-F, McGahee EE III, Patterson DG. Semiautomated high-throughput extraction and cleanup method for the measurement of polybrominated diphenyl ethers, polybrominated biphenyls, and polychlorinated biphenyls in human serum. Anal Chem 2004;76:1921-7.

2,4,5- and 2,4,6-Trichlorophenol

Ye X, Kuklenyik Z, Needham LL, Calafat AM. Automated on-line column-switching HPLC-MS/MS method with peak focusing for the determination of nine environmental phenols in urine. Anal Chem 2005;77:5407-13.

Other Pesticides and Metabolites (2,4- and 2,5-Dichlorophenol)

Ye X, Kuklenyik Z, Needham LL, Calafat AM. Automated on-line column-switching HPLC-MS/MS method with peak focusing for the determination of nine environmental phenols in urine. Anal Chem 2005;77:5407-13.

Organophosphorus Insecticides: Specific Metabolites

Davis MD, Wade EL, Restrepo PR, Roman-Esteva W, Bravo R, Kuklenyik P, Calafat AM. Semi-automated solid phase extraction method for the mass spectrometric quantification of 12 specific metabolites of organophosphorus pesticides, synthetic pyrethroids, and select herbicides in human urine. J Chromatogr B 2013;929:18-26. (NHANES 2007-2008 and later)

Olsson AO, Baker SE, Nguyen JV, Romanoff LC, Udunka SO, Walker RD, et al. A liquid chromatography-tandem mass spectrometry multiresidue method for quantification of specific metabolites of organophosphorus pesticides, synthetic pyrethroids, selected herbicides, and DEET in human urine. Anal Chem 2004;76(9):2453-61. (NHANES 1999-2004)

Organophosphorus Insecticides: Dialkyl Phosphate Metabolites

Bravo R, Caltabiano LM, Weerasekera G, Whitehead RD, Fernandez C, Needham LL, et al. Measurement of dialkyl phosphate metabolites of organophosphorus pesticides in human urine using lyophilization with gas chromatography-tandem mass spectrometry and isotope dilution quantification. J Expo Anal Environ Epidemiol 2004;14:249-59.

Pyrethroid Metabolites

Davis MD, Wade EL, Restrepo PR, Roman-Esteva W, Bravo R, Kuklenyik P, Calafat AM. Semi-automated solid phase extraction method for the mass spectrometric quantification of 12 specific metabolites of organophosphorus pesticides, synthetic pyrethroids, and select herbicides in human urine. J Chromatogr B 2013;929:18-26. (NHANES 2007-2008 and later)

Olsson AO, Baker SE, Nguyen JV, Romanoff LC, Udunka SO, Walker RD, et al. A liquid chromatography-tandem mass spectrometry multiresidue method for quantification of specific metabolites of organophosphorus pesticides, synthetic pyrethroids, selected herbicides, and DEET in human urine. Anal Chem 2004;76(9):2453-61. (NHANES 1999-2002)

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Caldwell KL, Hartel J, Jarrett J, Jones RL. Inductively coupled plasma mass spectrometry to measure multiple toxic elements in urine in NHANES 1999-2000. Atomic Spectroscopy. 2005;26(1):1-7.

Jarrett JM, Jones RL, Caldwell KL, Verdon CP. Total urine arsenic measurements using inductively coupled plasma mass spectrometry with a dynamic reaction cell. Atomic Spectroscopy 2007;28(4):113-22. (after NHANES 2001-2002)

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Parabens

Ye X, Kuklenyik Z, Bishop AM, Needham LL, Calafat AM. Quantification of the urinary concentrations of parabens in humans by on-line solid phase extraction-high performance liquid chromatography–isotope dilution tandem mass spectrometry. J Chromatogr B 2006;844:53-9.

Perchlorate and Other Anions

Valentin-Blasini L, Blount BC, Delinsky A. Quantification of iodide and sodium-iodide symporter inhibitors in human urine using ion chromatography tandem mass spectrometry. J Chrom A 2007;1155(1):40-6.

Valentin-Blasini L, Mauldin JP, Maple D, Blount BC. Analysis of perchlorate in human urine using ion chromatography and electrospray tandem mass spectrometry. Anal Chem 2005;77(8):2475-81.

Perfluorinated Compounds: Surfactants

Kuklenyik Z, Needham LL, Calafat AM. Measurement of 18 Perfluorinated Organic Acids and Amides in Human Serum Using On-Line Solid-Phase Extraction. Anal Chem 2005;77:6085-91.

Kuklenyik Z, Reich JA, Tully JS, Needham LL, Calafat AM. Automated solid phase extraction and measurement of perfluorinated organic acids and amides in human serum and milk. Environ Sci Technol 2004;38:3698-704.

Phthalate and Phthalate Alternative Metabolites

Blount BC, Milgram KE, Silva M, Malek N, Reidy J, Needham LL, et al. Quantitative detection of eight phthalate metabolites in human urine using HPLC-APCI-MS/MS. Anal Chem 2000;72:4127-34. (NHANES 1999-2000)

Kato K, Silva MJ, Needham LL, Calafat AM. Determination of 16 phthalate metabolites in urine using automated sample preparation and on-line preconcentration/high-performance liquid chromatography/tandem mass spectrometry. Anal Chem 2005;77(9):2985-91. (NHANES 2003-2004)

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Silva MJ, Malek NA, Hodge CC, Reidy JA, Kato K, Barr DB, et al. Improved quantitative detection of 11 urinary phthalate metabolites in humans using liquid chromatography-atmospheric pressure chemical ionization tandem mass spectrometry. J Chromatogr B 2003;789:393-404. (NHANES 1999-2000)

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Phytoestrogens and Metabolites

Kuklenyik Z, Ye X, Reich JA, Needham LL, Calafat AM. Automated on-line and off-line solid phase extraction methods for measuring isoflavones and lignans in urine. J Chromatogr Sci 2004; 42:495-500. (NHANES 2001-2002)

Parker DL, Rybak ME, Pfeiffer CM. Phytoestrogen biomonitoring: an extractionless LC-MS/MS method for measuring urinary isoflavones and lignans by use of atmospheric pressure photoionization (APPI). Anal Bioanal Chem 2012;402:1123-1136. (NHANES 2005-2006 and later)

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Polycyclic Aromatic Hydrocarbon Metabolites

Li Z, Romanoff LC, Trinidad DA, Hussain N, Jones RS, Porter EN, et al. Measurement of urinary Monohydroxy polycyclic aromatic hydrocarbons using automated liquid-liquid extraction and gas chromatography/isotope dilution high-resolution mass spectrometry. Anal Chem 2006;78:5744-51.

Volatile Organic Compounds (VOCs), including Disinfection By-Products

Alwis KU, Blount BC, Silva LK, Smith MM, Loose KH. Method for quantifying nitromethane in blood as a potential biomarker of halonitromethane exposure. Environ Sci Technol 2008;42 (7): 2522-7.

Bonin MA, Silva LK, Smith MM, Ashley DL, Blount BC. Measurement of trihalomethanes and methyl tert-butyl ether in whole blood using gas chromatography with high-resolution mass spectrometry. J Anal Toxicol 2005;29(2):81-9.

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Chambers DM, McElprang DO, Mauldin JP, Hughes TM, Blount BC. Identification and elimination of polysiloxane curing agent interference encountered in the quantification of low-picogram per milliliter methyl tert-butyl ether in blood by solid-phase microextraction headspace analysis. Anal Chem 2005;77 (9): 2912-9.

Chambers DM, McElprang DO, Waterhouse MG, Blount BC. An improved approach for accurate quantitation of benzene, toluene, ethylbenzene, xylene, and styrene in blood. Anal Chem 2006;78 (15): 5375-83.

Volatile Organic Compound (VOC) Metabolites

Alwis KU, Blount BC, Britt AS, Patel D, Ashley DL. Simultaneous analysis of 28 urinary VOC metabolites using ultra high performance liquid chromatography coupled with electrospray ionization tandem mass spectrometry (UPLC-ESI/MSMS). Anal Chim Acta 2012;750:152-60.

Polybrominated Diphenyl Ethers and PBB 153 (Pooled and Individual Samples)

Jones R, Edenfield E, Anderson S, Zhang Y, Sjodin A. Semi-automated extraction and cleanup method for measuring persistent organic pollutants in human serum. Organohalogen Compounds 2012;74: 97-8.

Sjodin A, Jones RS, Lapeza CR, Focant J-F, McGahee EE III, Patterson DG. Semiautomated high-throughput extraction and cleanup method for the measurement of polybrominated diphenyl ethers, polybrominated biphenyls, and polychlorinated biphenyls in human serum. Anal Chem 2004;76:1921-7.

Non-dioxin-like and mono-*ortho*-substituted Polychlorinated Biphenyls (Pooled and Individual Samples)

Barr JB, Maggio VL, Barr DB, Turner WE, Sjodin A, Sandau CD, et al. New high-resolution mass spectrometric approach for the measurement of polychlorinated biphenyls and organochlorine pesticides in human serum. J Chromatog B 2003;794:137-48.

Jones R, Edenfield E, Anderson S, Zhang Y and Sjodin A. Semi-automated extraction and cleanup method for measuring persistent organic pollutants in human serum. Organohalogen Compounds 2012;74:97-8.

Sjodin A, Jones RS, Lapeza CR, Focant J-F, McGahee EE III, Patterson DG. Semiautomated high-throughput extraction and cleanup method for the measurement of polybrominated diphenyl ethers, polybrominated biphenyls, and polychlorinated biphenyls in human serum. Anal Chem 2004;76:1921-7.

Appendix D. Limit of Detection Table

The analytical limit of detection (LOD) for each of the different chemical measurements is presented in the table below. The LOD is the concentration at which the measurement has a 95% probability of being greater than zero (Taylor, 1987). As analytical methods improve, LODs will often change. For this reason, LOD results are reported by survey periods (e.g., 1999-2000, 2001-2002, etc.).

Reference: Taylor JK. Quality Assurance of Chemical Measurements. Chelsea (MI): Lewis Publishing. 1987.

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Tobacco Smoke									
Cotinine	serum	ng/mL	0.05	0.05	0.015	0.015	0.015	0.015	0.015
NNAL	urine	pg/mL					1.0	0.6	0.6
Disinfection By-Products									
Bromodichloromethane	blood	pg/mL		0.233	0.62	0.62			
Dibromochloromethane	blood	pg/mL		0.271	0.62	0.62			
Tribromomethane (Bromoform)	blood	pg/mL		0.596	1.5	1.0			
Trichloromethane (Chloroform)	blood	pg/mL		2.37	2.11	2.1			
Environmental Phenols									
Benzophenone-3	urine	µg/L			0.3	0.4	0.4	0.4	0.4
Bisphenol A	urine	µg/L			0.4	0.4	0.4	0.4	0.4
4-*tert*-Octylphenol	urine	µg/L				0.2	0.2	0.2	
Triclosan	urine	µg/L			2.3	2.3	2.3	2.3	2.3
Fungicides and Metabolites									
ortho-Phenylphenol	urine	µg/L			0.1	0.1	0.1	0.2	
Ethylene thiourea	urine	µg/L			0.1	0.24	0.21		
Pentachlorophenol	urine	µg/L			0.5				
Propylene thiourea	urine	µg/L			0.1	0.37	0.36		
Herbicides and Metabolites									
2,4-Dichlorophenoxyacetic acid	urine	µg/L	0.89	0.2	0.1		0.4	0.15	
2,4,5-Trichlorophenoxyacetic acid	urine	µg/L	1.1	0.1	0.1		0.1	0.1	

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Sulfonlyurea Herbicides									
Bensulfuron-methyl	urine	µg/L			0.05	0.05	0.05		
Chlorsulfuron	urine	µg/L			0.06	0.06	0.06		
Ethametsulfuron-methyl	urine	µg/L			0.1	0.1	0.1		
Foramsulfuron	urine	µg/L			0.05	0.05	0.05		
Halosulfuron	urine	µg/L			0.1	0.1	0.1		
Mesosulfuron-methyl	urine	µg/L			0.06	0.06	0.06		
Metsulfuron-methyl	urine	µg/L			0.05	0.05	0.05		
Nicosulfuron	urine	µg/L			0.1	0.1	0.1		
Oxasulfuron	urine	µg/L			0.06	0.06	0.06		
Primisulfuron-methyl	urine	µg/L			0.07	0.07	0.07		
Prosulfuron	urine	µg/L			0.05	0.05	0.05		
Rimsulfuron	urine	µg/L			0.05	0.05	0.05		
Sulfometuron-methyl	urine	µg/L			0.05	0.05	0.05		
Sulfosulfuron	urine	µg/L			0.1	0.1	0.1		
Thifensulfuron-methyl	urine	µg/L			0.08	0.08	0.08		
Triasulfuron	urine	µg/L			0.07	0.07	0.07		
Triflusulfuron-methyl	urine	µg/L			0.05	0.05	0.05		
Carbamate Pesticide Metabolites									
Carbofuranphenol	urine	µg/L	0.4	0.4	0.4				
2-isopropoxyphenol	urine	µg/L	1.1	0.4	0.4				
Organochlorine Pesticides and Metabolites									
Aldrin	serum	ng/g lipid		5.94	7.8				
Dieldrin	serum	ng/g lipid		10.5	7.8				
Endrin	serum	ng/g lipid		5.09	7.8				
Heptachlor epoxide	serum	ng/g lipid	14.6	10.5	7.8				
o,p'-DDT	serum	ng/g lipid	20.7	17.4	7.8				
2,4,5-Trichlorophenol	urine	µg/L			0.1	0.1	0.1	0.1	
2,4,6-Trichlorophenol	urine	µg/L			0.5	0.5	0.5	0.5	
Other Pesticides and Metabolites									
2,4-Dichlorophenol	urine	µg/L			0.17	0.2	0.2	0.2	0.2
2,5-Dichlorophenol	urine	µg/L			0.12	0.2	0.2	0.2	0.2

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Organophosphorus Insecticides:Specific Metabolites									
Acephate	urine	µg/L			0.1	0.25	0.27		
Dimethoate	urine	µg/L			0.1	0.25	0.1		
Methamidophos	urine	µg/L			0.1	0.37	0.41		
Omethoate	urine	µg/L			0.1	0.14	0.1		
Malathion dicarboxylic acid	urine	µg/L	2.64				0.5	0.5	
2-Isopropyl-4-methyl-pyrimidinol	urine	µg/L	7.2	0.7			0.1	0.1	
para -Nitrophenol	urine	µg/L	0.8	0.1			0.1	0.1	
3,5,6-Trichlor-2-pyridinol	urine	µg/L	0.4	0.4			0.1	0.1	
Organophosphorus Insecticides:Dialkyl Phosphate Metabolites									
Diethylphosphate (DEP)	urine	µg/L	0.2	0.2	0.1	0.37	0.37		
Dimethylphosphate (DMP)	urine	µg/L	0.58	0.5	0.5	0.47	0.47		
Diethylthiophosphate (DETP)	urine	µg/L	0.09	0.1	0.2	0.56	0.56		
Dimethylthiophosphate (DMTP)	urine	µg/L	0.18	0.4	0.5	0.55	0.55		
Diethyldithiophosphate (DEDTP)	urine	µg/L	0.05	0.1	0.1	0.39	0.39		
Dimethyldithiophosphate (DMDTP)	urine	µg/L	0.08	0.1	0.1	0.51	0.51		
Pyrethroid Metabolites									
trans -Dichlorovinyl-dimethylcyclopropane carboxylic acid	urine	µg/L	0.1	0.1			0.6	0.6	
cis -Dibromovinyl-dimethylcyclopropane carboxylic acid	urine	µg/L	0.1	0.1			0.5	0.5	
4-Fluoro-3-phenoxybenzoic acid	urine	µg/L	0.2	0.2			0.1	0.1	
3-Phenoxybenzoic acid	urine	µg/L	0.1	0.1			0.1	0.1	

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Metals and Metalloids									
Antimony	urine	µg/L	0.04	0.04	0.07	0.032	0.032	0.032	0.041
Arsenic, Total	urine	µg/L			0.74	0.74	0.74	0.74	1.25
Arsenic (V) Acid	urine	µg As/L			1.0	1.0	1.0	1.0	0.87
Arsenobetaine	urine	µg As/L			0.4	0.4	0.4	0.4	1.19
Arsenocholine	urine	µg As/L			0.6	0.6	0.6	0.6	0.28
Arsenous (III) Acid	urine	µg As/L			1.2	1.2	1.2	1.2	0.48
Dimethylarsinic Acid	urine	µg As/L			1.7	1.7	1.7	1.7	1.8
Monomethylarsonic Acid	urine	µg As/L			0.9	0.9	0.9	0.9	0.89
Trimethylarsine oxide	urine	µg As/L			1.0	1.0	1.0	1.0	0.25
Barium	urine	µg/L	0.12	0.12	0.31	0.12	0.12	0.12	0.1
Beryllium	urine	µg/L	0.13	0.13	0.13	0.072	0.072	0.072	
Cadmium	blood	µg/L	0.3	0.3	0.14	0.2	0.2	0.2	0.16
Cadmium	urine	µg/L	0.06	0.06	0.06	0.042	0.042	0.042	0.056
Cesium	urine	µg/L	0.14	0.14	0.2	0.066	0.066	0.066	0.12
Cobalt	urine	µg/L	0.07	0.07	0.08	0.041	0.041	0.041	0.048
Copper	serum	µg/dL							2.5
Lead	blood	µg/dL	0.3	0.3	0.28	0.25	0.25	0.25	0.25
Lead	urine	µg/L	0.1	0.1	0.33	0.1	0.1	0.1	0.08
Manganese	blood	µg/L							1.06
Manganese	urine	µg/L							0.08
Mercury, Total	blood	µg/L			0.2	0.33	0.33	0.33	0.16
Mercury, Inorganic	blood	µg/L			0.42	0.4	0.35	0.35	0.27
Mercury, Ethyl	blood	µg/L							0.16
Mercury, Methyl	blood	µg/L							0.12
Mercury	urine	µg/L			0.14	0.11	0.08	0.08	0.05
Molybdenum	urine	µg/L	0.8	0.8	1.5	0.92	0.92	0.92	0.99
Platinum	urine	µg/L	0.04	0.04	0.07	0.009	0.009	0.009	
Selenium	blood	µg/L							30.0
Selenium	serum	µg/L							4.5
Strontium	urine	µg/L							2.5
Thallium	urine	µg/L	0.02	0.02	0.02	0.015	0.015	0.015	0.02
Tin	urine	µg/L							0.22
Tungsten	urine	µg/L	0.04	0.04	0.04	0.021	0.021	0.021	0.026
Uranium	urine	µg/L	0.004	0.004	0.005	0.002	0.002	0.0017	0.0033
Zinc	serum	µg/dL							2.9

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Parabens									
Butyl paraben	urine	µg/L				0.2	0.2	0.2	0.2
Ethyl paraben	urine	µg/L				1.0	1.0	1.0	1.0
Methyl paraben	urine	µg/L				1.0	1.0	1.0	1.0
n-Propyl paraben	urine	µg/L				0.2	0.2	0.2	0.2
Perchlorate and Other Anions									
Nitrate	urine	mg/L		0.7		0.7	0.7	0.7	0.7
Perchlorate	urine	µg/L		0.05	0.05	0.05	0.05	0.05	0.05
Thiocyananate	urine	mg/L		0.02		0.02	0.02	0.02	0.02
Perfluorinated Compounds									
Perfluorobutane sulfonic acid (PFBuS)	serum	µg/L			0.4	0.1	0.1	0.1	0.1
Perfluorodecanoic acid (PFDeA)	serum	µg/L	0.2		0.3	0.2	0.2	0.1	0.1
Perfluorododecanoic acid (PFDoA)	serum	µg/L	0.2		1.0	0.2	0.2	0.1	0.1
Perfluoroheptanoic acid (PFHpA)	serum	µg/L	0.4		0.3	0.4	0.4	0.1	0.1
Perfluorohexane sulfonic acid (PFHxS)	serum	µg/L	0.1		0.3	0.1	0.1	0.1	0.1
Perfluorononanoic acid (PFNA)	serum	µg/L	0.1		0.1	0.1	0.082	0.082	0.082
Perfluorooctanoic acid (PFOA)	serum	µg/L	0.1		0.2	0.1	0.1	0.1	0.1
Perfluorooctane sulfonic acid (PFOS)	serum	µg/L	0.2		0.4	0.2	0.2	0.2	0.2
Perfluorooctane sulfonamide (PFOSA)	serum	µg/L	0.05		0.1	0.1	0.1	0.1	0.1
2-(N-Ethyl-perfluorooctane sulfonamido) acetic acid (Et-PFOSA-AcOH)	serum	µg/L	0.2		0.4	0.2	0.2	0.1	0.1
2-(N-Methyl-perfluorooctane sulfonamido) acetic acid (Me-PFOSA-AcOH)	serum	µg/L	0.174		0.523	0.174	0.174	0.087	0.087
Perfluoroundecanoic acid (PFUA)	serum	µg/L	0.2		0.3	0.2	0.2	0.1	0.1
Phthalate and Phthalate Alternatives Metabolites									
Mono-benzyl phthalate (MBzP)	urine	µg/L	0.576	0.216	0.072	0.216	0.216	0.216	0.3
Mono-isobutyl phthalate (MiBP)	urine	µg/L		1.0	0.3	0.3	0.3	0.2	0.2
Mono-*n*-butyl phthalate (MnBP)	urine	µg/L	0.9	1.1	0.4	0.6	0.6	0.4	0.4
Mono-cyclohexyl phthalate (MCHP)	urine	µg/L	1.81	0.603	0.402	0.603	0.603	0.402	
Mono-ethyl phthalate (MEP)	urine	µg/L	0.792	0.594	0.264	0.528	0.462	0.396	0.6
Mono-2-ethylhexyl phthalate (MEHP)	urine	µg/L	1.2	1.0	0.9	1.2	1.1	0.5	0.5
Mono-(2-ethyl-5-hydroxyhexyl) phthalate	urine	µg/L		1.0	0.3	0.7	0.7	0.2	0.2
Mono-(2-ethyl-5-oxohexyl) phthalate	urine	µg/L		1.1	0.5	0.7	0.6	0.2	0.2
Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)	urine	µg/L			0.3	0.6	0.5	0.2	0.2
Mono-(carboxynonyl) phthalate (MCNP)	urine	µg/L				0.6	0.5	0.2	0.2
Mono-isononyl phthalate (MiNP)	urine	µg/L	1.23	1.23	1.54	1.23	1.23	0.77	0.6
Mono-(carboxyoctyl) phthalate (MCOP)	urine	µg/L				0.7	0.7	0.2	0.2

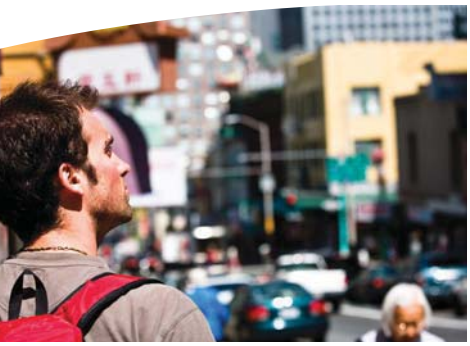
Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Phthalate and Phthalate Alternatives Metabolites (continued)									
Mono-methyl phthalate (MMP)	urine	µg/L		0.2	1.0	1.1	1.1	0.5	0.5
Mono-(3-carboxypropyl) phthalate (MCPP)	urine	µg/L		0.4	0.2	0.2	0.2	0.2	0.2
Mono-*n*-octyl phthalate (MOP)	urine	µg/L	1.51	1.68	1.68	1.85	1.85	0.84	
Cyclohexane-1,2-dicarboxylic acid mono(hydroxy-isononyl ester) (MHNCH)	urine	µg/L							0.4
Phytoestrogens and Metabolites									
Urinary Daidzein	urine	µg/L	0.5	1.6	0.3	0.4	0.4	0.4	
Urinary Enterodiol	urine	µg/L	0.8	1.5	0.3	0.04	0.04	0.04	
Urinary Enterolactone	urine	µg/L	0.6	1.9	0.3	0.1	0.1	0.1	
Urinary Equol	urine	µg/L	3.0	3.3	0.3	0.06	0.06	0.6	
Urinary Genistein	urine	µg/L	0.3	0.8	0.3	1.0	0.2	0.2	
Urinary O-Desmethylangolensin	urine	µg/L	0.2	0.4	0.2	0.2	0.2	0.2	
Polycyclic Aromatic Hydrocarbon Metabolites									
2-Hydroxyfluorene	urine	ng/L			5.0	5.0	5.0		10.0
3-Hydroxyfluorene	urine	ng/L		2.0	5.0	5.0	5.0		10.0
9-Hydroxyfluorene	urine	ng/L			5.0	5.0	5.0		10.0
1-Hydroxyphenanthrene	urine	ng/L		3.5	5.0	5.0	5.0		10.0
2-Hydroxyphenanthrene	urine	ng/L		3.2	5.0	5.0	5.0		10.0
3-Hydroxyphenanthrene	urine	ng/L		3.6	5.0	5.0	5.0		10.0
4-Hydroxyphenanthrene	urine	ng/L			5.0	5.0			10.0
1-Hydroxypyrene	urine	ng/L			5.0	5.0	5.0		10.0
1-Hydroxynaphthalene (1-Naphthol)	urine	µg/L			0.047	0.048	0.045		0.044
2-Hydroxynaphthalene (2-Naphthol)	urine	µg/L		0.002	0.031	0.013	0.042		0.042

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Volatile Organic Compounds (VOCs)									
1,1,1-Trichloroethane (Methyl chloroform)	blood	ng/mL			0.048	0.01			
1,1,2,2-Tetrachloroethane	blood	ng/mL			0.05	0.01			
1,1,2-Trichloroethane	blood	ng/mL			0.01	0.01			
1,1-Dichloroethane	blood	ng/mL			0.01	0.01			
1,1-Dichloroethene (Vinylidene chloride)	blood	ng/mL			0.009	0.009			
1,2-Dibromo-3-chloropropane (DBCP)	blood	ng/mL			0.1	0.1			
1,2-Dichlorobenzene	blood	ng/mL			0.1	0.1			
1,2-Dichloroethane (Ethylene dichloride)	blood	ng/mL			0.01	0.01			
cis-1,2-Dichloroethene	blood	ng/mL			0.01	0.01			
trans-1,2-Dichloroethene	blood	ng/mL			0.01	0.01			
1,2-Dichloropropane	blood	ng/mL			0.008	0.008			
1,3-Dichlorobenzene	blood	ng/mL			0.05	0.05			
1,4-Dichlorobenzene (Paradichlorobenzene)	blood	ng/mL		0.12	0.12	0.011			
2,5-Dimethylfuran	blood	ng/mL			0.012	0.011			
Benzene	blood	ng/mL		0.024	0.024	0.024			
Chlorobenzene	blood	ng/mL			0.011	0.011			
Dibromomethane	blood	ng/mL			0.03	0.03			
Dichloromethane (Methylene chloride)	blood	ng/mL			0.07	0.25			
Ethylbenzene	blood	ng/mL		0.024	0.024	0.024			
Hexachloroethane	blood	ng/mL			0.011	0.011			
Methyl-*tert*-butyl ether (MTBE)	blood	pg/mL		0.232	2.0	1.4			
Nitrobenzene	blood	ng/mL			0.3	0.3			
Styrene	blood	ng/mL		0.03	0.03	0.03			
Tetrachloroethene (Perchloroethylene)	blood	ng/mL		0.048	0.048	0.048			
Tetrachloromethane (Carbon tetrachloride)	blood	ng/mL		0.01	0.005	0.005			
Toluene	blood	ng/mL		0.025	0.025	0.025			
Trichloroethene (Trichloroethylene)	blood	ng/mL		0.012	0.012	0.012			
m-/*p*-Xylene	blood	ng/mL		0.340	0.034	0.034			
o-Xylene	blood	ng/mL		0.049	0.049	0.024			

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Volatile Organic Compound (VOC) Metabolites									
N-Acetyl-S-(2-carbamoylethyl)-L-cysteine	urine	µg/L				2.2			2.2
N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine	urine	µg/L				5.5			5.5
2-Aminothiazoline-4-carboxylic acid	urine	µg/L				15.0			15.0
N-Acetyl-S-(benzyl)-L-cysteine	urine	µg/L				0.5			0.5
N-Acetyl-S-(*n*-propyl)-L-cysteine	urine	µg/L				1.2			1.2
N-Acetyl-S-(2-carboxyethyl)-L-cysteine	urine	µg/L				8.0			8.0
N-Acetyl-S-(2-cyanoethyl)-L-cysteine	urine	µg/L				0.5			0.5
N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine	urine	µg/L				12.6			12.6
N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine	urine	µg/L				6.5			6.5
N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine	urine	µg/L				5.0			5.0
N-Acetyl-S-(dimethylphenyl)-L-cysteine	urine	µg/L				0.5			0.5
N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine	urine	µg/L				9.4			9.4
N-Acetyl-S-(2-hydroxyethyl)-L-cysteine	urine	µg/L				0.6			0.6
N-Acetyl-S-(3-hydroxypropyl)-L-cysteine	urine	µg/L				13.0			13.0
N-Acetyl-S-(2-hydroxypropyl)-L-cysteine	urine	µg/L				1.3			1.3
N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine	urine	µg/L				2.0			2.0
Mandelic acid	urine	µg/L				12.0			12.0
2-Methylhippuric acid	urine	µg/L				5.0			5.0
3- and 4-Methylhippuric acid	urine	µg/L				8.0			8.0
N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine	urine	µg/L				0.7			0.7
N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine	urine	µg/L				0.7			0.7
N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine	urine	µg/L				0.6			0.6
t,t-Muconic acid	urine	µg/L				20.0			20.0
N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine	urine	µg/L				0.7			0.7
Phenylglyoxylic acid	urine	µg/L				12.0			12.0
N-Acetyl-S-(phenyl)-L-cysteine	urine	µg/L				0.6			0.6
N-Acetyl-S-(trichlorovinyl)-L-cysteine	urine	µg/L				3.0			3.0
2-Thioxothiazolidine-4-carboxylic acid	urine	µg/L				3.5			3.5

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Organochlorine Pesticides and Metabolites (Pooled Samples beginning in 2005-2006)									
Oxychlordane	serum	ng/g lipid	14.5	10.5	7.8	1.46	1.4		
trans -Nonachlor	serum	ng/g lipid	14.5	10.5	7.8	0.77	1.4		
p,p'-DDT	serum	ng/g lipid	20.7	17.4	7.8	1.46	1.4		
p,p'-DDE	serum	ng/g lipid	18.6	8.3	7.8	4.02	1.4		
Hexachlorobenzene	serum	ng/g lipid	118	31.4	7.8	4.17	1.4		
beta -Hexachlorocyclohexane	serum	ng/g lipid	9.36	6.76	7.8	1.46	1.4		
gamma -Hexachlorocyclohexane	serum	ng/g lipid	14.5	10.5	7.8	1.46	1.4		
Mirex	serum	ng/g lipid	14.6	10.5	7.8	1.46	1.4		
Polybrominated Diphenyl Ethers and PBB 153 (Pooled Samples beginning in 2005-2006)									
2,2',4'-Tribromodiphenyl ether (BDE 17)	serum	ng/g lipid			1.0	0.6	0.6		
2,4,4'-Tribromodiphenyl ether (BDE 28)	serum	ng/g lipid			0.8	0.6	0.6		
2,2',4,4'-Tetrabromodiphenyl ether (BDE 47)	serum	ng/g lipid			4.2	1.6	0.6		
2,3',4,4'-Tetrabromodiphenyl ether (BDE 66)	serum	ng/g lipid			1.0	0.6	0.6		
2,2',3,4,4'-Pentabromodiphenyl ether (BDE 85)	serum	ng/g lipid			2.4	0.6	0.6		
2,2',4,4',5-Pentabromodiphenyl ether (BDE 99)	serum	ng/g lipid			5.0	1.2	0.6		
2,2',4,4',6-Pentabromodiphenyl ether (BDE 100)	serum	ng/g lipid			1.4	0.6	0.6		
2,2',4,4',5,5'-Hexabromodiphenyl ether (BDE 153)	serum	ng/g lipid			2.2	0.6	0.6		
2,2',4,4',5,6'-Hexabromodiphenyl ether (BDE 154)	serum	ng/g lipid			0.8	0.6	0.6		
2,2',3,4,4',5',6-Heptabromodiphenyl ether (BDE 183)	serum	ng/g lipid			1.7	0.6	0.6		
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (BDE 209)	serum	ng/g lipid				6.0	5.8		
2,2',4,4',5,5'-Hexabromobiphenyl (PBB 153)	serum	ng/g lipid			0.8	0.6	0.6		
Dioxin-like Polychlorinated Biphenyls: mono-*ortho* -substituted PCBs (Pooled Samples beginning in 2005-2006)									
2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	serum	ng/g lipid	12.4	10.5	0.4	0.31	0.3		
2,3,3',4,4'-Pentachlorobiphenyl (PCB 114)	serum	ng/g lipid				0.31	0.3		
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	serum	ng/g lipid	12.5	10.5	0.6	0.72	0.3		
2',3,4,4',5-Pentachlorobiphenyl (PCB 123)	serum	ng/g lipid				0.31	0.3		
2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)	serum	ng/g lipid	12.5	10.5	0.4	0.31	0.3		
2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157)	serum	ng/g lipid	12.5	10.5	0.4	0.31	0.3		
2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	serum	ng/g lipid	12.4	10.5	0.4	0.31	0.3		
2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	serum	ng/g lipid		10.5	0.4	0.31	0.3		

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Polychlorinated Biphenyls: Non-Dioxin-Like (Pooled Samples beginning in 2005-2006)									
2,4,4'-Trichlorobiphenyl (PCB 28)	serum	ng/g lipid	32.4		1.7	2.54	0.7		
2,2'3,5'-Tetrachloro biphenyl (PCB 44)	serum	ng/g lipid			0.4	0.36	0.3		
2,2',4,5'-Tetrachloro biphenyl (PCB 49)	serum	ng/g lipid			0.4	0.31	0.3		
2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	serum	ng/g lipid	12.5	12.4	0.8	0.33	0.3		
2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	serum	ng/g lipid	12.4	12.4	0.8	0.4	0.3		
2,4,4',5-Tetrachlorobiphenyl (PCB 74)	serum	ng/g lipid	12.4	10.5	0.8	0.31	0.8		
2,2',3,4,5'-Pentachlorobiphenyl (PCB 87)	serum	ng/g lipid		10.5	0.4	0.31	0.3		
2,2',4,4',5-Pentachlorobiphenyl (PCB 99)	serum	ng/g lipid	12.5	10.5	0.6	0.31	0.3		
2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)	serum	ng/g lipid	25.7	10.5	0.6	0.59	0.3		
2,3,3',4',6-Pentachlorobiphenyl (PCB 110)	serum	ng/g lipid		10.5	0.8	0.31	0.3		
2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128)	serum	ng/g lipid	12.4	10.5	0.4	0.31	0.3		
2,2',3,4,4',5' and 2,3,3',4,4',6-Hexachlorobiphenyl (PCB 138 & 158)	serum	ng/g lipid	41.1	10.5	0.4	0.31	0.3		
2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146)	serum	ng/g lipid	12.4	10.5	0.4	0.31	0.3		
2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149)	serum	ng/g lipid	10.5		0.4	0.31	0.3		
2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151)	serum	ng/g lipid		10.5	0.4	0.31	0.3		
2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)	serum	ng/g lipid	55.6	10.5	1.1	0.31	0.3		
2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	serum	ng/g lipid	17.2	10.5	0.4	0.31	0.3		
2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172)	serum	ng/g lipid	12.5	10.5	0.4	0.31	0.3		
2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177)	serum	ng/g lipid	12.5	10.5	0.4	0.31	0.3		
2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178)	serum	ng/g lipid	12.4	10.5	0.4	0.31	0.3		
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	serum	ng/g lipid	28.2	10.5	0.4	0.31	0.3		
2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183)	serum	ng/g lipid	12.4	10.5	0.4	0.31	0.3		
2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	serum	ng/g lipid	12.4	10.5	0.4	0.31	0.3		
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	serum	ng/g lipid		10.5	0.4	0.31	0.3		
2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)	serum	ng/g lipid		28.1	0.7	0.31	0.3		
2,2',3,3',4,4',5,6' and 2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 196 & 203)	serum	ng/g lipid		10.5	0.4	0.31	0.3		
2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 199)	serum	ng/g lipid		10.5	0.4	0.31	0.3		
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206)	serum	ng/g lipid		28.1	0.7	0.31	0.3		
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (PCB 209)	serum	ng/g lipid			0.7	0.31	0.3		



Centers for Disease Control and Prevention
National Center for Environmental Health
Division of Laboratory Sciences
Mail Stop F-20
4770 Buford Highway, NE
Atlanta, GA 30341-3724

Telephone: (toll free) 1-800-CDC-INFO (1-800-232-4636)
Email: CDCINFO@cdc.gov
Website: http://www.cdc.gov/exposurereport

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