

Biomonitoring

Perchlorate

Table B13. Perchlorate in women ages 16 to 49 years: Median and 95th percentile concentrations in urine, 2001-2008

	Concentration of perchlorate in urine (µg/L)			
	2001-2002	2003-2004	2005-2006	2007-2008
Median	3.3	2.9	3.2	3.4
95th percentile	15.0	NA**	13.0	16.5

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.
- Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.^{6,7,9}

** Not available. The estimate is not reported because it has large uncertainty: the relative standard error, RSE, is 40% or greater (RSE = standard error divided by the estimate), or the RSE cannot be reliably estimated.

Table B13a. Perchlorate in women ages 16 to 49 years: Median concentrations in urine, by race/ethnicity and family income, 2005-2008

Race / Ethnicity	Median concentration of perchlorate in urine (µg/L)		
	All Incomes‡ (n=3,529)	< Poverty Level (n=861)	≥ Poverty Level (n=2,453)
All Races/Ethnicities (n=3,529)	3.3	3.4	3.2
White Non-Hispanic (n=1,365)	3.2	3.2	3.2
Black Non-Hispanic (n=858)	3.5	3.5	3.5
Mexican-American (n=843)	3.6	3.5	3.5
All Other Races/Ethnicities† (n=463)	3.3	3.6	3.0

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.

† The “All Other Races/Ethnicities” category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

Table B13b. Perchlorate in women ages 16 to 49 years: 95th percentile concentrations in urine, by race/ethnicity and family income, 2005-2008

Race / Ethnicity	95 th percentile concentration of perchlorate in urine (µg/L)		
	All Incomes‡ (n=3,529)	< Poverty Level (n=861)	≥ Poverty Level (n=2,453)
All Races/Ethnicities (n=3,529)	14.5	14.4	14.4
White Non-Hispanic (n=1,365)	13.2	14.2	13.2
Black Non-Hispanic (n=858)	16.5	14.5*	19.4
Mexican-American (n=843)	16.0	16.5	15.3
All Other Races/Ethnicities† (n=463)	14.7	13.1	14.7

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTES:

- To reflect exposures to women who are pregnant or may become pregnant, the estimates are adjusted for the probability (by age and race/ethnicity) that a woman gives birth. The intent of this adjustment is to approximate the distribution of exposure to pregnant women. Results will therefore differ from a characterization of exposure to adult women without consideration of birth rates.
- Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.^{6,7,9}

† The “All Other Races/Ethnicities” category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

Table B13c. Perchlorate in children ages 6 to 17 years: Median and 95th percentile concentrations in urine, 2001-2008

	Concentration of perchlorate in urine (µg/L)			
	2001-2002	2003-2004	2005-2006	2007-2008
Median	4.9	4.5	4.6	4.8
95th percentile	15.0	16.0	14.9	18.6

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.^{6,7,9}

Table B13d. Perchlorate in children ages 6 to 17 years: Median concentrations in urine, by race/ethnicity and family income, 2005-2008

Race / Ethnicity	Median concentration of perchlorate in urine (µg/L)		
	All Incomes‡ (n=4,638)	< Poverty Level (n=1,294)	≥ Poverty Level (n=3,096)
All Races/Ethnicities (n=4,638)	4.7	4.5	4.8
White Non-Hispanic (n=1,282)	4.9	4.7	4.9
Black Non-Hispanic (n=1,383)	4.4	4.2	4.5
Mexican-American (n=1,397)	4.9	4.7	5.0
All Other Races/Ethnicities† (n=576)	4.1	3.9*	4.4

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

† The “All Other Races/Ethnicities” category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

Table B13e. Perchlorate in children ages 6 to 17 years: 95th percentile concentrations in urine, by race/ethnicity and family income, 2005-2008

Race / Ethnicity	95 th percentile concentration of perchlorate in urine (µg/L)		
	All Incomes‡ (n=4,638)	< Poverty Level (n=1,294)	≥ Poverty Level (n=3,096)
All Races/Ethnicities (n=4,638)	17.2	16.0	17.5
White Non-Hispanic (n=1,282)	17.6	16.0	17.7
Black Non-Hispanic (n=1,383)	17.5	15.4	17.7
Mexican-American (n=1,397)	15.6	15.9	15.4
All Other Races/Ethnicities† (n=576)	16.9	16.9*	16.9

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.^{6,7,9}

† The “All Other Races/Ethnicities” category includes all other races or ethnicities not specified, together with those individuals who report more than one race.

‡ Includes sampled individuals for whom income information is missing.

*The estimate should be interpreted with caution because the standard error of the estimate is relatively large: the relative standard error, RSE, is at least 30% but is less than 40% (RSE = standard error divided by the estimate), or the RSE may be underestimated.

Table B13f: Perchlorate in children ages 6 to 17 years: Median and 95th percentile concentrations by age group, 2005-2008

	Concentration of perchlorate in urine (µg/L)			
	Ages 6 to 17 years	Ages 6 to 10 years	Ages 11 to 15 years	Ages 16 to 17 years
Median	4.7	4.9	4.7	4.4
95th percentile	17.2	17.1	17.5	16.7

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Environmental Health, National Health and Nutrition Examination Survey

NOTE: Perchlorate does not appear to accumulate in bodily tissues; thus, the distribution of NHANES urinary perchlorate levels may overestimate high-end exposures as a result of collecting one-time urine samples rather than collecting urine for a longer time period.^{6,7,9}