

## Biomonitoring

### Perfluorochemicals (PFCs)

**Table B6. Perfluorochemicals in women ages 16 to 49 years: Median concentrations in blood serum, 1999-2008**

Median concentration of PFCs in serum (ng/mL)				
Year	PFOS	PFOA	PFHxS	PFNA
1999-2000	23.8	4.6	1.3	0.5
2003-2004	14.6	3.0	1.4	0.8
2005-2006	11.6	2.9	1.2	0.8
2007-2008	8.7	3.2	1.1	1.2

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.

**Table B6a. Perfluorochemicals in women ages 16 to 49 years: 95<sup>th</sup> percentile concentrations in blood serum, 1999-2008**

95 <sup>th</sup> percentile concentration of PFCs in serum (ng/mL)				
Year	PFOS	PFOA	PFHxS	PFNA
1999-2000	50.1	8.4	4.9	1.3
2003-2004	42.2	8.4	7.1*	NA**
2005-2006	27.8	6.4	5.4	2.2
2007-2008	22.8	7.9	4.9	3.2

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:

- PFOS = perfluorooctane sulfonic acid, PFOA = perfluorooctanoic acid, PFHxS = perfluorohexane sulfonic acid, and PFNA = perfluorononanoic acid.
- 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 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.

\*\* 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 B6b. Perfluorochemicals in women ages 16 to 49 years: Median concentrations in blood serum, by race/ethnicity and family income, 2005-2008

Race / Ethnicity		Median concentration of PFCs in blood serum (ng/mL)		
		All Incomes‡ (n=1,121)	< Poverty Level (n=278)	≥ Poverty Level (n=780)
PFOS	All Races/Ethnicities (n=1,121)	10.1	8.1	11.0
	White non-Hispanic (n=453)	11.4	8.1*	11.6
	Black non-Hispanic (n=255)	11.2	NA**	11.2
	Mexican-American (n=272)	7.4	8.1*	7.3
	All Other Races/Ethnicities† (n=141)	8.3	NA**	10.5
PFOA	All Races/Ethnicities (n=1,121)	3.1	2.7	3.2
	White non-Hispanic (n=453)	3.5	3.3*	3.5
	Black non-Hispanic (n=255)	2.7	NA**	2.6
	Mexican-American (n=272)	2.3	2.1*	2.4
	All Other Races/Ethnicities† (n=141)	2.4	NA**	2.6
PFHxS	All Races/Ethnicities (n=1,121)	1.2	1.0	1.2
	White non-Hispanic (n=453)	1.3	1.1*	1.3
	Black non-Hispanic (n=255)	1.1	NA**	1.1
	Mexican-American (n=272)	0.9	0.9*	1.0
	All Other Races/Ethnicities† (n=141)	0.8	NA**	1.1
PFNA	All Races/Ethnicities (n=1,121)	1.0	1.0	1.0
	White non-Hispanic (n=453)	1.1	1.0*	1.1
	Black non-Hispanic (n=255)	1.1	NA**	1.2
	Mexican-American (n=272)	0.8	0.9*	0.8
	All Other Races/Ethnicities† (n=141)	1.1	NA**	1.2

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:

- PFOS = perfluorooctane sulfonic acid, PFOA = perfluorooctanoic acid, PFHxS = perfluorohexane sulfonic acid, and PFNA = perfluorononanoic acid.
- 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.

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**Table B6c. Perfluorochemicals in women ages 16 to 49 years: 95<sup>th</sup> percentile concentrations in blood serum, by race/ethnicity and family income, 2005-2008**

		95 <sup>th</sup> percentile concentration of PFCs in blood serum (ng/mL)		
Race / Ethnicity		All Incomes‡ (n=1,121)	< Poverty Level (n=278)	≥ Poverty Level (n=780)
PFOS	All Races/Ethnicities (n=1,121)	25.7	22.6	27.8
	White non-Hispanic (n=453)	28.4	23.9*	28.4
	Black non-Hispanic (n=255)	25.7	NA**	25.7
	Mexican-American (n=272)	17.3	17.3*	16.4
	All Other Races/Ethnicities† (n=141)	24.9	NA**	31.0
PFOA	All Races/Ethnicities (n=1,121)	7.5	5.6	7.8
	White non-Hispanic (n=453)	8.1	5.8*	8.1
	Black non-Hispanic (n=255)	6.5	NA**	6.1
	Mexican-American (n=272)	5.5	5.4*	5.6
	All Other Races/Ethnicities† (n=141)	5.8	NA**	5.8
PFHxS	All Races/Ethnicities (n=1,121)	5.1	5.4	5.1
	White non-Hispanic (n=453)	5.6	6.0*	5.6
	Black non-Hispanic (n=255)	4.2	NA**	3.7
	Mexican-American (n=272)	4.6	4.0*	5.2
	All Other Races/Ethnicities† (n=141)	2.1	NA**	2.1
PFNA	All Races/Ethnicities (n=1,121)	2.8	2.7	2.6
	White non-Hispanic (n=453)	2.9	2.0*	2.7
	Black non-Hispanic (n=255)	NA**	NA**	2.3
	Mexican-American (n=272)	2.3	2.3*	2.0
	All Other Races/Ethnicities† (n=141)	2.8	NA**	2.8

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

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