Supplemental Digital Content I

for

Title: Per- and Polyfluoroalkyl Substances in Drinking Water and Birthweight in the US: A County-level Study

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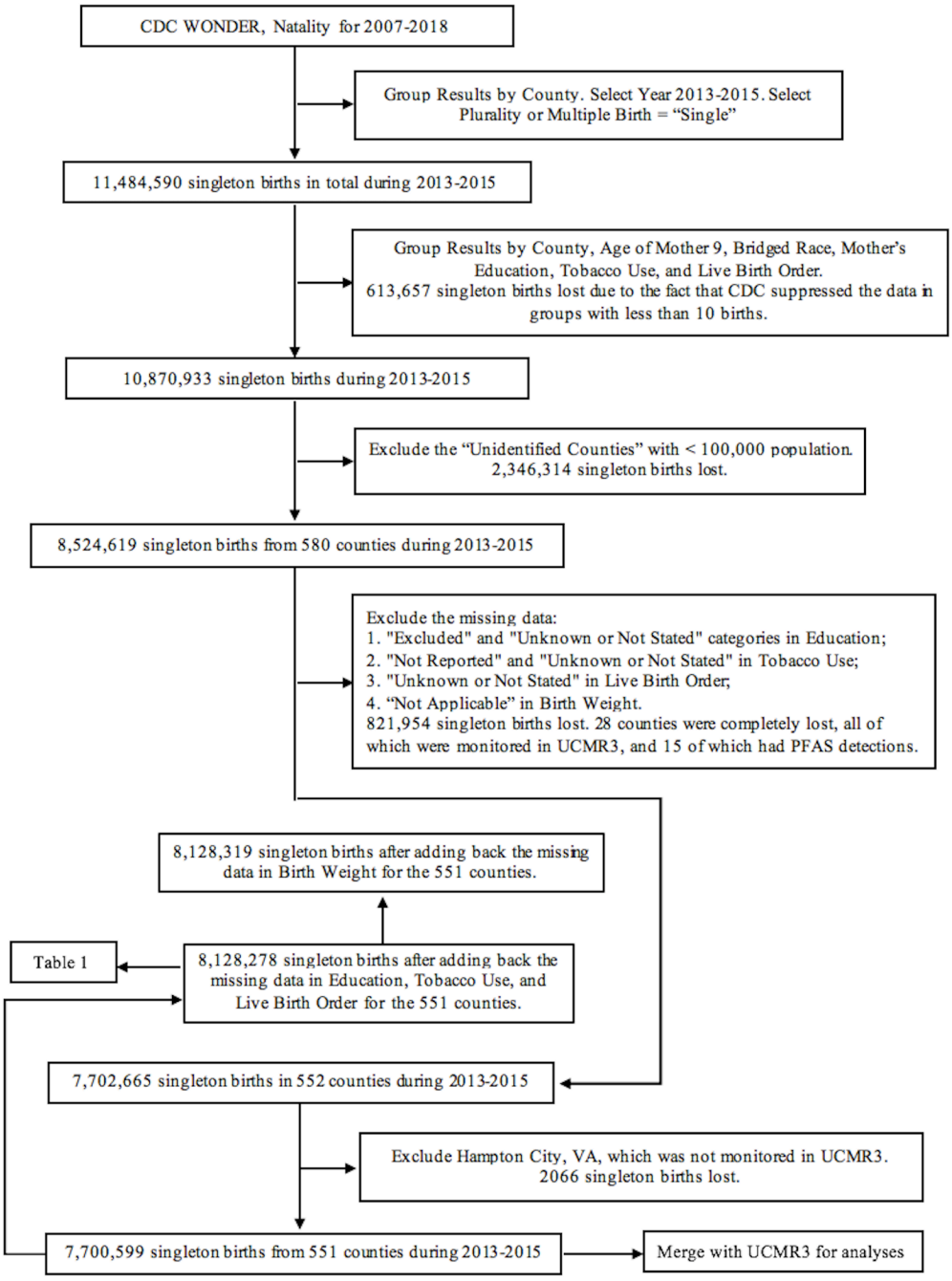

Figure S1. Study Profile

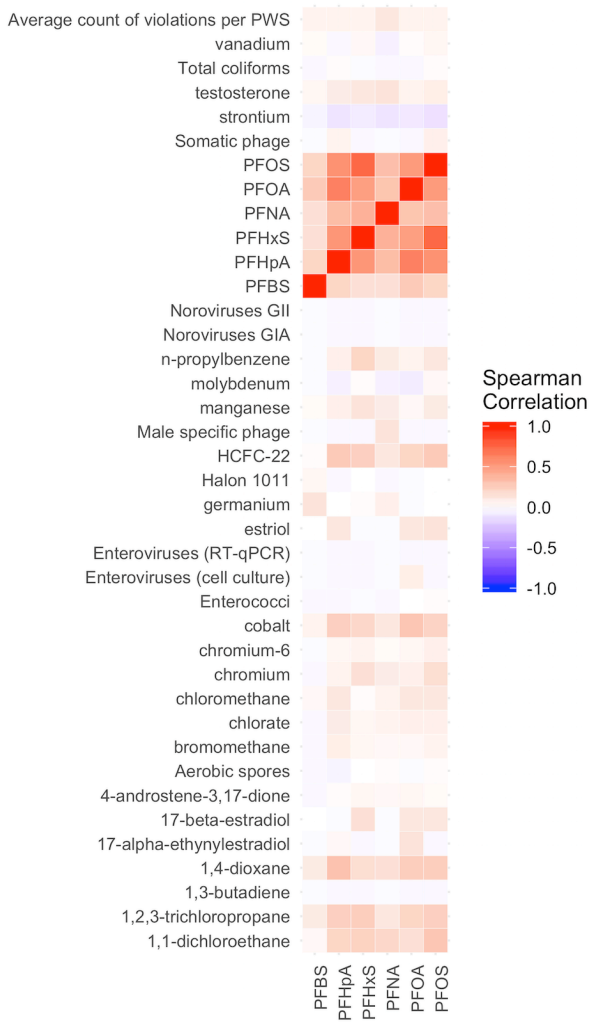

Figure S2. Spearman correlation heatmap between PFAS and other water quality indicators under the US EPA rules in 551 counties in the US, 2013-2015. Noroviruses GIA: Noroviruses genogroup I with RT-qPCR primer set A; Noroviruses GII: Noroviruses genogroup II. E. coli, equilin, estrone, Noroviruses GIB (genogroup I with RT-qPCR primer set B), sec-butylbenzene, and tellurium had no detections under UCMR3 and were excluded from the correlation heatmap.

Sensitivity Analyses:
Adjusted and adjusted co-exposure models in Figure S3 and Figure S4 additionally adjusted for the county-level percentage of poverty compared with those in Figure 1 and Figure 2 in the main text. Detailed effect estimates for the models in Figure S3 and Figure S4 can be found in Table S14 and Table S15.

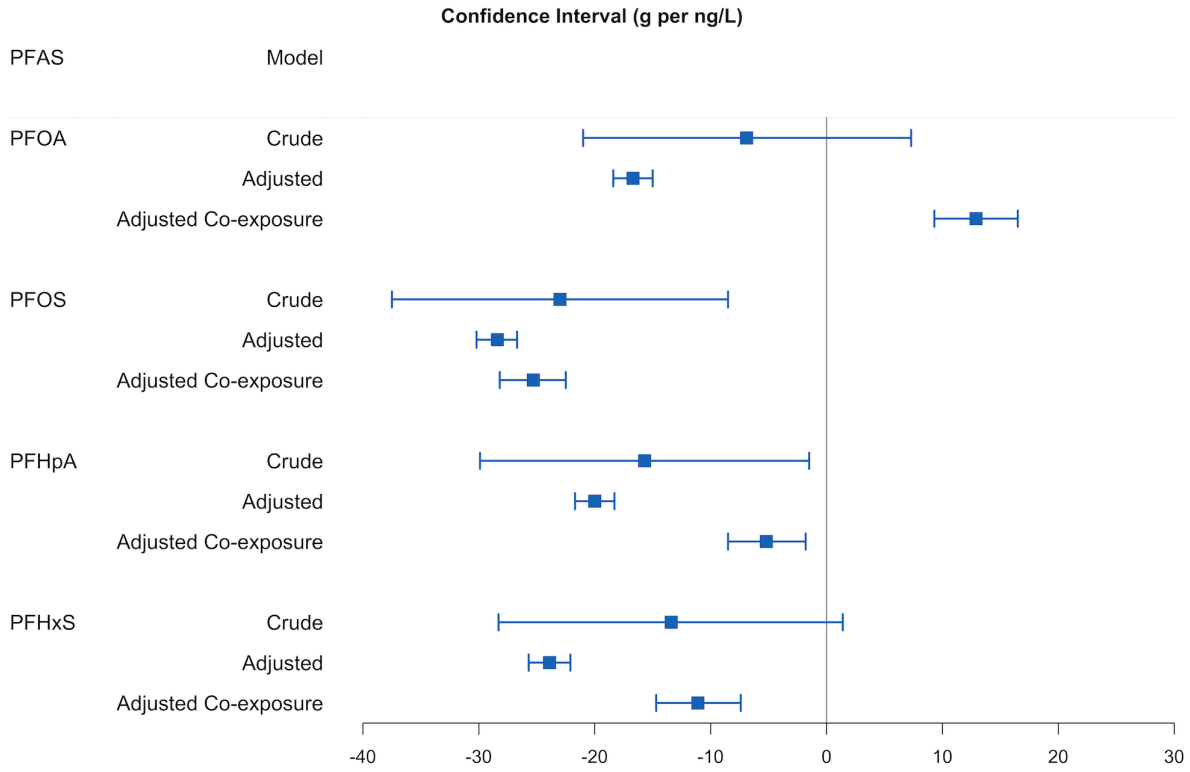

Figure S3. The change of average birthweight (g) for 10% increase in the detection of PFAS: MLE, 95% CI. Using regressions weighted by inverse variance of average birthweight. Crude model: association between PFAS and birthweight only. Adjusted model: adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), parity (1st, 2nd, 3rd and over), and county-level percentage of poverty. Adjusted co-exposure model: adjusted for the other three PFAS, 1,4-dioxane, and all covariates in the adjusted model.

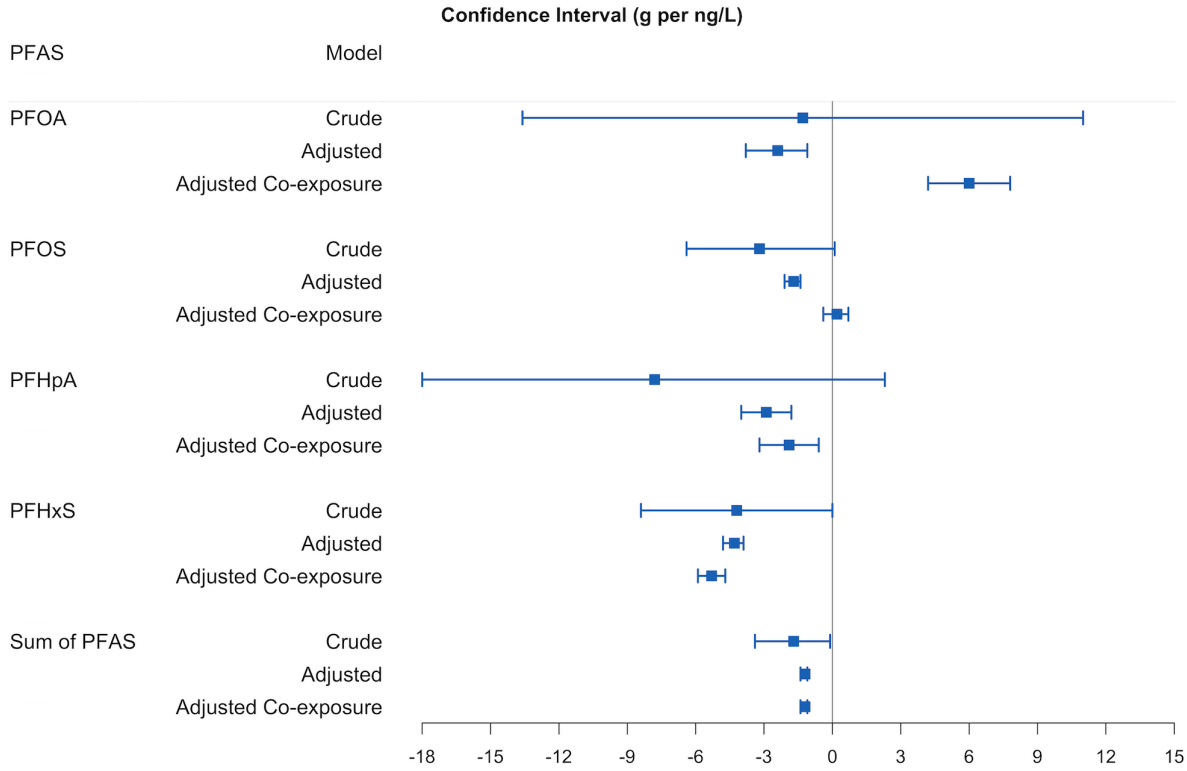

Figure S4. The change of average birthweight (g) for 1ng/L increase in the population-weighted average PFAS water concentration: MLE, 95% CI. Using $\frac{MRL}{\sqrt{2}}$ substitution for the non-detections and regressions weighted by inverse variance of average birthweight. Crude model: association between PFAS and birthweight only. Adjusted model: adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), parity (1st, 2nd, 3rd and over), and county-level percentage of poverty. Adjusted co-exposure model: adjusted for the co-exposures (the other three PFAS and 1,4-dioxane; or 1,4-dioxane only for the model includes the sum of PFAS), and all covariates in the adjusted model.

Table S1. Number of Water Samples in 1,928 Counties Covered by UCMR3 in the US, 2013-2015

Min	1st Quantile	Median	Mean	3rd Quantile	Max	SD
1.00	4.00	10.00	24.55	22.00	1018.00	56.29

Table S1.1. Percentage of Water Measurements with Detection (%) of PFAS in 1,928 Counties Covered by UCMR3 in the US, 2013-2015

Contaminant	Mean	SD	Min	Max
PFOA	0.68%	4.27%	0.00%	100.00%
PFOS	0.36%	3.24%	0.00%	100.00%
PFHpA	0.35%	2.98%	0.00%	58.33%
PFHxS	0.19%	1.97%	0.00%	50.00%

Table S1.2. Population-weighted Average of UCMR3 Water Concentrations (ng/L) of PFAS in 162 Counties Covered by UCMR3 in the US with Detection of at least one of PFOA, PFOS, PFHpA, or PFHxS, 2013-2015. Values that were below the MRL were Substituted with $\frac{MRL}{\sqrt{2}}$.

Contaminant	Mean	SD	Min	Max
PFOA	15.64	4.25	14.14	63.60
PFOS	30.63	6.01	28.28	80.64
PFHpA	7.76	2.30	7.07	24.38
PFHxS	22.76	7.06	21.21	104.11

Table S2. Number of Water Samples in the 551 Counties that can be Merged with CDC Birthweight Data in the US, 2013-2015

Min	1st Quantile	Median	Mean	3rd Quantile	Max	SD
2.00	15.50	29.00	56.19	58.00	1018.00	94.32

Table S3. Number of Water Samples in 87 Counties in the US with Detection of at least one of PFOA, PFOS, PFHpA or PFHxS, 2013-2015

Min	1st Quantile	Median	Mean	3rd Quantile	Max	SD
4.00	28.00	50.00	127.00	136.50	1018.00	187.73

Table S4. Predictors of Birthweight among Singleton Pregnancies in the US, 2013-2015

Categories	No. of Births (%)	Average Birthweight (gram) (SD)
Total	11,484,590 (100%)	3,306 (561)
Maternal Age (years)		
<15	8,276 (0.07%)	3,076 (591)
15-19	739,856 (6.4%)	3,182 (550)
20-24	2,568,226 (22.4%)	3,246 (549)
25-29	3,311,229 (28.8%)	3,321 (551)
30-34	3,079,890 (26.8%)	3,354 (559)
35-39	1,444,763 (12.6%)	3,341 (585)
40-44	311,894 (2.7%)	3,292 (615)
45-49	19,046 (0.17%)	3,238 (648)
≥50	1,410 (0.01%)	3,188 (661)
Race		
American Indian or Alaska Native	131,714 (1.1%)	3,342 (582)
Asian or Pacific Islander	803,171 (7.0%)	3,215 (516)
Black or African American	1,839,887 (16.0%)	3,131 (610)
White	8,709,818 (75.8%)	3,350 (546)
Education		
8th grade or less	399,353 (3.5%)	3,306 (557)
9th through 12th grade with no diploma	1,242,484 (10.8%)	3,205 (571)
High school graduate or GED completed	2,703,542 (23.5%)	3,256 (571)
Some college credit, but not a degree	2,295,104 (20.0%)	3,301 (569)
Associate degree	862,375 (7.5%)	3,346 (558)
Bachelor's degree	2,034,035 (17.7%)	3,384 (533)
Master's degree	898,457 (7.8%)	3,384 (530)
Doctorate or professional degree	256,032 (2.2%)	3,357 (518)

Unknown or not stated	146,362 (1.3%)	3,256 (631)
Excluded	646,846 (5.6%)	3,305 (558)
Smoking Status		
No	9,672,851 (84.2%)	3,323 (556)
Yes	870,235 (7.6%)	3,121 (578)
Not reported	774,075 (6.7%)	3,307 (560)
Unknown or not stated	167,429 (1.5%)	3,266 (604)
Parity		
1st	4,519,520 (39.4%)	3,253 (566)
2nd	3,638,902 (31.7%)	3,348 (540)
3rd and over	3,269,850 (28.5%)	3,331 (571)
Unknown or not stated	56,318 (0.5%)	3,245 (628)

Table S5. Crude and Adjusted Associations between Percentage of Water Measurements with PFOA Detection and Average Birthweight among Singleton Live Births in 551 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 10% Increase in the Detection of PFOA: MLE, 95% CI	
	Weighted by group size	Weighted by inverse variance of average birthweight
Crude Model	-5.1, [-19.8, 9.5]	-6.9, [-21.0, 7.3]
Adjusted Model*	-11.9, [-13.7, -10.1]	-12.2, [-13.9, -10.5]
Adjusted Co-exposure Model**	20.0, [16.3, 23.7]	19.9, [16.2, 23.6]

* Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), and parity (1st, 2nd, 3rd and over).

** Adjusted for PFOS, PFHpA, PFHxS, 1,4-dioxane, and all covariates in the adjusted model.

Table S6. Crude and Adjusted Associations between Percentage of Water Measurements with PFOS Detection and Average Birthweight among Singleton Live Births in 551 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 10% Increase in the Detection of PFOS: MLE, 95% CI	
	Weighted by group size	Weighted by inverse variance of average birthweight
Crude Model	-22.1, [-37.1, -7.1]	-23.0, [-37.5, -8.5]
Adjusted Model*	-27.8, [-29.6, -26.0]	-28.9, [-30.6, -27.1]
Adjusted Co-exposure Model**	-29.8, [-32.7, -26.8]	-32.9, [-35.8, -30.0]

* Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), and parity (1st, 2nd, 3rd and over).

** Adjusted for PFOA, PFHpA, PFHxS, 1,4-dioxane, and all covariates in the adjusted model.

Table S7. Crude and Adjusted Associations between Percentage of Water Measurements with PFHpA Detection and Average Birthweight among Singleton Live Births in 551 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 10% Increase in the Detection of PFHpA: MLE, 95% CI	
	Weighted by group size	Weighted by inverse variance of average birthweight
Crude Model	-14.3, [-28.9, 0.3]	-15.7, [-29.9, -1.5]
Adjusted Model*	-18.3, [-20.1, -16.5]	-17.8, [-19.5, -16.0]
Adjusted Co-exposure Model**	-9.6, [-13.1, -6.0]	-8.0, [-11.4, -4.6]

* Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), and parity (1st, 2nd, 3rd and over).

** Adjusted for PFOA, PFOS, PFHxS, 1,4-dioxane, and all covariates in the adjusted model.

Table S8. Crude and Adjusted Associations between Percentage of Water Measurements with PFHxS Detection and Average Birthweight among Singleton Live Births in 551 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 10% Increase in the Detection of PFHxS: MLE, 95% CI	
	Weighted by group size	Weighted by inverse variance of average birthweight
Crude Model	-12.2, [-27.8, 3.4]	-13.4, [-28.3, 1.4]
Adjusted Model*	-19.7, [-21.5, -17.8]	-19.9, [-21.7, -18.0]
Adjusted Co-exposure Model**	-6.0, [-9.9, -2.1]	-5.0, [-8.8, -1.2]

* Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), and parity (1st, 2nd, 3rd and over).

** Adjusted for PFOA, PFOS, PFHpA, 1,4-dioxane, and all covariates in the adjusted model.

Table S9. Crude and Adjusted Associations between Population-weighted Average PFOA Water Concentration and Average Birthweight among Singleton Live Births in 87 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 1ng/L Increase in the Population-weighted Average PFOA Water Concentration: MLE, 95% CI*		
	$\frac{MRL}{\sqrt{2}}$ substitution	Zero substitution	MRL substitution
Crude Model	-1.3, [-13.6, 11.0]	-1.1, [-9.0, 6.8]	-1.1, [-16.4, 14.3]
Adjusted Model**	0.9, [-0.5, 2.2]	1.0, [0.1, 1.8]	0.4, [-1.3, 2.1]
Adjusted Co-exposure Model***	10.7, [8.9, 12.6]	6.7, [5.6, 7.7]	9.5, [7.1, 12.0]

* Weighted by inverse variance of average birthweight.

**Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), and parity (1st, 2nd, 3rd and over).

***Adjusted for PFOS, PFHpA, PFHxS, 1,4-dioxane, and all covariates in the adjusted model.

Table S10. Crude and Adjusted Associations between Population-weighted Average PFOS Water Concentration and Average Birthweight among Singleton Live Births in 87 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 1ng/L Increase in the Population-weighted Average PFOS Water Concentration: MLE, 95% CI*		
	$\frac{MRL}{\sqrt{2}}$ substitution	Zero substitution	MRL substitution
Crude Model	-3.2, [-6.4, 0.1]	-3.4, [-5.9, -0.9]	-2.4, [-6.0, 1.1]
Adjusted Model**	-1.3, [-1.6, -0.9]	-1.9, [-2.2, -1.6]	-0.6, [-1.0, -0.2]
Adjusted Co-exposure Model***	0.3, [-0.3, 0.9]	-1.0, [-1.5, -0.6]	1.7, [1.0, 2.3]

* Weighted by inverse variance of average birthweight.

** Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), and parity (1st, 2nd, 3rd and over).

*** Adjusted for PFOA, PFHpA, PFHxS, 1,4-dioxane, and all covariates in the adjusted model.

Table S11. Crude and Adjusted Associations between Population-weighted Average PFHpA Water Concentration and Average Birthweight among Singleton Live Births in 87 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 1ng/L Increase in the Population-weighted Average PFHpA Water Concentration: MLE, 95% CI*		
	$\frac{MRL}{\sqrt{2}}$ substitution	Zero substitution	MRL substitution
Crude Model	-7.8, [-18.0, 2.3]	-6.2, [-13.0, 0.7]	-8.3, [-20.9, 4.2]
Adjusted Model**	-3.8, [-4.9, -2.7]	-3.3, [-4.1, -2.6]	-3.6, [-5.0, -2.2]
Adjusted Co-exposure Model***	-4.8, [-6.3, -3.3]	-3.4, [-4.5, -2.3]	-3.9, [-5.7, -2.1]

* Weighted by inverse variance of average birthweight.

** Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), and parity (1st, 2nd, 3rd and over).

*** Adjusted for PFOA, PFOS, PFHxS, 1,4-dioxane, and all covariates in the adjusted model.

Table S12. Crude and Adjusted Associations between Population-weighted Average PFHxS Water Concentration and Average Birthweight among Singleton Live Births in 87 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 1ng/L Increase in the Population-weighted Average PFHxS Water Concentration: MLE, 95% CI*		
	$\frac{MRL}{\sqrt{2}}$ substitution	Zero substitution	MRL substitution
Crude Model	-4.2, [-8.4, 0.0]	-3.4, [-6.5, 0.2]	-4.7, [-9.4, -0.1]
Adjusted Model**	-3.8, [-4.3, -3.3]	-2.7, [-3.0, -2.3]	-4.4, [-4.9, -3.8]
Adjusted Co-exposure Model***	-5.4, [-6.0, -4.7]	-2.6, [-3.1, -2.1]	-6.9, [-7.6, -6.3]

* Weighted by inverse variance of average birthweight.

** Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), and parity (1st, 2nd, 3rd and over).

*** Adjusted for PFOA, PFOS, PFHpA, 1,4-dioxane, and all covariates in the adjusted model.

Table S13. Crude and Adjusted Associations between the Sum of Population-weighted Average Water Concentrations of Four PFAS and Average Birthweight among Singleton Live Births in 87 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 1ng/L Increase in the Sum of Population-weighted Average Water Concentrations of Four PFAS: MLE, 95% CI*		
	$\frac{MRL}{\sqrt{2}}$ substitution	Zero substitution	MRL substitution
Crude Model	-1.7, [-3.4, -0.1]	-1.6, [-2.9, -0.3]	-1.6, [-3.5, 0.2]
Adjusted Model**	-1.0, [-1.2, -0.8]	-1.0, [-1.1, -0.8]	-0.9, [-1.1, -0.7]
Adjusted Co-exposure Model***	-1.0, [-1.2, -0.8]	-1.0, [-1.1, -0.8]	-0.9, [-1.1, -0.7]

* Weighted by inverse variance of average birthweight.

** Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), and parity (1st, 2nd, 3rd and over).

*** Adjusted for 1,4-dioxane and all covariates in the adjusted model

Sensitivity Analyses:
Adjusted and adjusted co-exposure models in Table S14 and Table S15 additionally adjusted for county-level percentage of poverty compared with those in the previous tables.

Table S14. Crude and Adjusted Associations between Percentage of Water Measurements with PFAS Detection and Average Birthweight among Singleton Live Births in 551 Counties, 2013-2015

Model	The Change of Average Birthweight (g) for 10% Increase in the Detection of PFAS: MLE, 95% CI*			
	PFOA	PFOS	PFHpA	PFHxS
Crude Model	-6.9, [-21, 7.3]	-23, [-37.5, -8.5]	-15.7, [-29.9, -1.5]	-13.4, [-28.3, 1.4]
Adjusted Model**	-16.7, [-18.4, -15]	-28.4, [-30.2, -26.7]	-20, [-21.7, -18.3]	-23.9, [-25.7, -22.1]
Adjusted Co-exposure Model***	12.9, [9.3, 16.5]	-25.3, [-28.2, -22.5]	-5.2, [-8.5, -1.8]	-11.1, [-14.7, -7.4]

* Weighted by inverse variance of average birthweight.

** Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), parity (1st, 2nd, 3rd and over), and county-level percentage of poverty.

*** Adjusted for the other PFAS, 1,4-dioxane, and all covariates in the adjusted model.

Table S15. Crude and Adjusted Associations between Population-weighted Average PFAS Water Concentration and Average Birthweight among Singleton Live Births in 87 Counties, 2013-2015 (Using $\frac{MRL}{\sqrt{2}}$ substitution)

Model	The Change of Average Birthweight (g) for 1ng/L Increase in the Population-weighted Average PFAS Water Concentration: MLE, 95% CI*				
	PFOA	PFOS	PFHpA	PFHxS	Sum of four PFAS
Crude Model	-1.3, [-13.6, 11]	-3.2, [-6.4, 0.1]	-7.8, [-18, 2.3]	-4.2, [-8.4, 0]	-1.7, [-3.4, -0.1]
Adjusted Model**	-2.4, [-3.8, -1.1]	-1.7, [-2.1, -1.4]	-2.9, [-4, -1.8]	-4.3, [-4.8, -3.9]	-1.2, [-1.4, -1.1]
Adjusted Co-exposure Model***	6, [4.2, 7.8]	0.2, [-0.4, 0.7]	-1.9, [-3.2, -0.6]	-5.3, [-5.9, -4.7]	-1.2, [-1.4, -1.1]

* Weighted by inverse variance of average birthweight.

** Adjusted for maternal age (<15, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, ≥50), race (American Indian or Alaska Native, Asian or Pacific Islander, Black or African American, White), education (8th grade or less; 9th through 12th grade with no diploma; High school graduate or GED completed; Some college credit, but not a degree; Associate degree; Bachelor's degree; Master's degree; Doctorate or professional degree), smoking status (Yes, No), parity (1st, 2nd, 3rd and over), and county-level percentage of poverty.

*** Adjusted for the other PFAS, 1,4-dioxane, and all covariates in the adjusted model.

Table S16. Spearman Correlation between Percentage of Poverty and Percentage of Water Measurements with PFAS Detection for 551 Counties, 2013-2015

	Spearman correlation	p-value
PFOA	-0.07	0.09
PFOS	0.02	0.61
PFHpA	-0.08	0.08
PFHxS	-0.04	0.30

Table S17. Spearman Correlation between Percentage of Poverty and Population-weighted Average PFAS Water Concentrations for the 87 Counties with Detection of at least one of PFOA, PFOS, PFHpA, or PFHxS, 2013-2015

	Spearman correlation	p-value
PFOA	-0.18	0.10
PFOS	0.04	0.70
PFHpA	-0.13	0.22
PFHxS	-0.07	0.50

Table S18. Descriptive Statistics of Serum PFAS Concentrations (ng/ml) for the General US Population (Aged 12 Years and Older) from the National Health and Nutrition Examination Survey (NHANES).

	2015-2016 cycle of NHANES			
	Geometric Mean (95% CI)	Median (95% CI)	25th Percentile (95% CI)*	75th Percentile (95% CI)
PFOA	1.56 (1.47, 1.66)	1.57 (1.47, 1.77)	1.07 (0.97, 1.17)	2.47 (2.27, 2.57)
PFOS	4.72 (4.4 5.07)	4.8 (4.4, 5.3)	2.8 (2.6, 3.0)	8.1 (7.3, 9.4)
PFHxS	1.18 (1.08, 1.30)	1.2 (1.1, 1.3)	0.7 (0.6, 0.8)	2.1 (1.8, 2.3)
PFHpA	-	-	-	-
PFNA	0.58 (0.54, 0.62)	0.6 (0.5, 0.6)	0.4 (0.3, 0.4)	0.9 (0.8, 1.0)
PFBS	-	-	-	-
	2013-2014 cycle of NHANES			
	Geometric Mean (95% CI)	Median (95% CI)	25th Percentile (95% CI)*	75th Percentile (95% CI)
PFOA	1.94 (1.76, 2.14)	2.07 (1.87, 2.20)	1.37 (1.17, 1.47)	3.07 (2.67, 3.37)
PFOS	4.99 (4.50, 5.52)	5.2 (4.8, 5.7)	3.1 (2.7, 3.4)	8.7 (8.0, 9.4)
PFHxS	1.35 (1.2, 1.52)	1.4 (1.2, 1.6)	0.8 (0.7, 0.9)	2.4 (2.2, 2.8)
PFHpA	< LOD	< LOD	< LOD	< LOD
PFNA	0.68 (0.61, 0.74)	0.7 (0.6, 0.7)	0.4 (0.4, 0.5)	1.0 (0.9, 1.2)
PFBS	< LOD	< LOD	< LOD	< LOD

Limit of detection (LOD) for serum PFAS in survey cycle 2013-2014 and 2015-2016 are 0.10 ng/ml (= 100 ng/L = 100 ppt).

< LOD means less than the limit of detection.

- Not measured.

* The 25th percentile (95% CI) was not reported by CDC Fourth Report on Human Exposure to Environmental Chemicals (January 2019).[7] We calculated the statistics accounting for complex survey design using NHANES data and the 'survey' package in R. The other percentiles and geometric means are identical to the statistics reported by CDC.