

Table S1. Distribution of second trimester plasma levels of corticotropin releasing hormone (pg/mL) and second trimester serum levels of per- and poly-fluoroalkyl substances (ng/mL) with <80% detection (N=497).

	% Above MDL	% Machine Readable	Geometric Mean (Geometric SD)	Percentile				
				5 th	25 th	50 th	75 th	95 th
PFDeA	69.22	92.56	0.18 (1.75)	<MDL	<MDL	0.16	0.24	0.49
PFUdA	72.03	95.77	0.14 (1.84)	<MDL	<MDL	0.14	0.23	0.40
PFOSA	2.41	45.88	0.03 (1.66)	<MDL	<MDL	<MDL	<MDL	<MDL
PFBS	0.80	55.13	0.05 (1.73)	<MDL	<MDL	<MDL	<MDL	<MDL
PFHpA	11.87	68.41	0.08 (1.63)	<MDL	<MDL	<MDL	<MDL	0.19
PFDoA	2.21	58.95	0.28 (1.25)	<MDL	<MDL	<MDL	<MDL	<MDL
Et-PFOSA-AcOH	10.66	70.02	0.02 (1.63)	<MDL	<MDL	<MDL	<MDL	0.05

Abbreviations: SD, standard deviation; MDL, method detection limit. Percentile values were calculated with PFAS concentrations below the MDL coded as missing.

Table S2. Distribution of second trimester serum levels of PFAS (ng/mL) across demographic characteristics and psychosocial stressors.

		PFNA		PFOA		PFOS		PFHxS		Me-PFOA-AcOH	
	N	Geometric Mean (Geometric SD)	N	Geometric Mean (Geometric SD)	N	Geometric Mean (Geometric SD)	N	Geometric Mean (Geometric SD)	N	Geometric Mean (Geometric SD)	
Maternal Age, years	18-24	54	0.22 (1.95)	54	0.57 (1.71)	54	1.40 (2.05)	54	0.30 (2.04)	53	0.06 (2.40)
	25-29	66	0.21 (1.85)	66	0.57 (1.83)	66	1.23 (2.16)	66	0.23 (2.15)	66	0.05 (2.41)
	30-34	171	0.34 (2.08)	172	0.84 (2.14)	172	2.21 (2.09)	172	0.45 (2.50)	172	0.05 (2.01)
	≥35	190	0.32 (1.78)	191	0.73 (1.89)	191	1.94 (1.88)	191	0.34 (1.98)	191	0.05 (2.01)
Maternal Education	Less than High School	57	0.22 (1.82)	58	0.56 (1.82)	58	1.25 (1.88)	58	0.22 (1.69)	58	0.05 (1.82)
	High School Degree or Some College	135	0.22 (1.87)	135	0.54 (1.81)	135	1.38 (2.14)	135	0.25 (2.07)	134	0.05 (2.40)
	College Degree	113	0.35 (1.88)	114	0.85 (2.03)	114	2.16 (1.98)	114	0.43 (2.40)	114	0.05 (2.18)
	Graduate Degree	181	0.37 (1.92)	181	0.91 (1.91)	181	2.44 (1.87)	181	0.48 (2.13)	181	0.06 (1.94)
Maternal Race/Ethnicity	White	182	0.36 (1.85)	183	0.94 (1.99)	183	2.34 (1.81)	183	0.56 (2.14)	183	0.05 (1.91)
	Black	36	0.24 (1.78)	36	0.50 (1.87)	36	1.46 (2.09)	36	0.25 (2.00)	36	0.07 (1.99)
	Asian/Pacific Islander	82	0.37 (1.92)	82	0.75 (1.86)	82	2.30 (2.15)	82	0.34 (2.08)	82	0.06 (2.35)
	Latina	171	0.22 (1.85)	172	0.59 (1.81)	172	1.36 (2.06)	172	0.24 (2.02)	171	0.04 (2.12)
	Other/Multi-Racial	14	0.53 (2.57)	14	1.07 (2.15)	14	2.54 (1.78)	14	0.43 (2.25)	14	0.05 (1.65)
Parity	No Prior Births	239	0.37 (1.99)	239	1.02 (1.87)	239	2.32 (2.02)	239	0.51 (2.27)	239	0.05 (2.07)
	One or More Prior Births	249	0.24 (1.83)	251	0.53 (1.78)	251	1.52 (2.00)	251	0.25 (1.93)	250	0.05 (2.15)
Marital Status	Married	324	0.33 (1.96)	326	0.80 (2.04)	326	2.08 (2.03)	326	0.41 (2.35)	326	0.05 (2.12)
	Living Together	104	0.25 (2.01)	104	0.62 (1.82)	104	1.51 (2.10)	104	0.27 (2.07)	104	0.05 (1.97)
	Single	104	0.25 (1.75)	104	0.61 (1.78)	104	1.52 (1.99)	104	0.29 (1.84)	104	0.05 (2.39)
Perceived Stress	No	421	0.31 (1.98)	422	0.75 (2.01)	422	1.90 (2.08)	422	0.37 (2.31)	421	0.05 (2.10)
	Yes	61	0.26 (1.86)	62	0.64 (1.74)	62	1.73 (2.04)	62	0.31 (1.96)	62	0.06 (1.90)
Stressful Life Events	No	200	0.31 (1.94)	201	0.78 (2.05)	201	1.94 (1.98)	201	0.38 (2.26)	201	0.05 (1.97)
	Yes	283	0.29 (1.98)	284	0.70 (1.93)	284	1.82 (2.13)	284	0.34 (2.27)	283	0.05 (2.22)
Depression	No	418	0.30 (1.99)	420	0.74 (2.00)	420	1.89 (2.04)	420	0.37 (2.30)	419	0.05 (2.11)
	Yes	37	0.28 (1.76)	37	0.66 (1.84)	37	1.75 (2.19)	37	0.28 (1.85)	37	0.07 (2.10)
Financial Strain	No	261	0.37 (1.87)	262	0.92 (1.94)	262	2.40 (1.87)	262	0.49 (2.16)	262	0.05 (1.95)
	Yes	169	0.24 (1.90)	170	0.57 (1.90)	170	1.45 (2.12)	170	0.26 (2.15)	169	0.05 (2.21)
Food Insecurity	No	408	0.31 (1.96)	409	0.76 (1.98)	409	1.96 (2.03)	409	0.38 (2.28)	408	0.05 (2.08)
	Yes	75	0.24 (1.95)	76	0.59 (1.85)	76	1.41 (2.20)	76	0.24 (1.98)	76	0.06 (2.32)

Abbreviations: SD, standard deviation.

Table S3. Crude and adjusted linear regression coefficients and 95% confidence intervals for second trimester CRH concentrations (pg/mL) in maternal plasma with an interquartile range increase in second trimester PFAS concentrations (ng/mL) in maternal serum.

	Crude ¹			Adjusted ²		
	N	β	95% CI	N	β	95% CI
PFNA	489	6.26	(3.31, 9.21)	464	5.17	(1.79, 8.55)
PFOA	491	5.11	(1.70, 8.52)	466	3.62	(-0.42, 7.66)
PFOS	491	4.38	(1.06, 7.70)	466	1.99	(-1.92, 5.9)
PFHxS	490	0.69	(-2.19, 3.58)	466	0.33	(-3.73, 4.39)
Me-PFOSA-AcOH	491	2.96	(-0.34, 6.25)	465	-0.26	(-3.28, 2.75)

¹Adjusted for gestational age at visit.

²Adjusted for gestational age at visit, maternal age (continuous), maternal education, maternal race/ethnicity, and parity.

Abbreviations: CI, confidence interval.

Table S4. Crude and adjusted linear regression coefficients and 95% confidence intervals for the associations between psychosocial stressors and second trimester CRH concentrations (pg/mL) in maternal plasma.

		Crude ¹			Adjusted ²		
		N	β	95% CI	N	β	95% CI
Financial Strain	No	261	Ref	Ref	254	Ref	Ref
	Yes	167	-5.28	(-11.07, 0.5)	156	4.42	(-5.42, 14.25)
Food Insecurity	No	408	Ref	Ref	391	Ref	Ref
	Yes	73	-4.92	(-12.15, 2.32)	70	1.92	(-6.25, 10.09)
Stressful Life Events	No	201	Ref	Ref	197	Ref	Ref
	Yes	280	1.66	(-3.63, 6.95)	264	3.79	(-1.75, 9.33)
Perceived Stress	No	419	Ref	Ref	404	Ref	Ref
	Yes	61	2.57	(-5.29, 10.43)	57	10.2	(1.82, 18.57)
Depression	No	417	Ref	Ref	400	Ref	Ref
	Yes	36	-3.23	(-13.27, 6.8)	33	5.09	(-5.67, 15.85)

¹Adjusted for gestational age at visit.

²Adjusted for gestational age at visit, maternal age (continuous), maternal education, maternal race/ethnicity, and parity.
Abbreviations: CI, confidence interval.

Table S5. Crude and adjusted linear regression coefficients and 95% confidence intervals for second trimester CRH concentrations (pg/mL) in maternal plasma with an interquartile range increase in second trimester PFAS concentrations (ng/mL) in maternal serum stratified by stressful life events.

		Crude ¹				Adjusted ²			
		N	β	95% CI	P interaction	N	β	95% CI	P interaction
PFNA	Stressful Life Events– Yes	279	7.62	(3.95, 11.29)	0.53	263	7.06	(2.82, 11.3)	0.49
	Stressful Life Events– No	200	5.59	(0.57, 10.61)		196	2.29	(-3.45, 8.03)	
PFOA	Stressful Life Events– Yes	280	4.84	(0.43, 9.25)	0.9	264	3.62	(-1.76, 8.99)	0.40
	Stressful Life Events– No	201	5.24	(0.00, 10.48)		197	3.56	(-2.86, 9.98)	
PFOS	Stressful Life Events– Yes	280	5.26	(1.03, 9.50)	0.71	264	2.77	(-2.10, 7.65)	0.79
	Stressful Life Events– No	201	6.43	(0.46, 12.4)		197	1.00	(-5.90, 7.91)	
PFHxS	Stressful Life Events– Yes	280	3.63	(-0.58, 7.84)	0.98	264	0.86	(-4.33, 6.06)	0.89
	Stressful Life Events– No	201	3.59	(-1.88, 9.07)		197	-0.42	(-7.16, 6.32)	
Me-PFOA-AcOH	Stressful Life Events– Yes	279	0.24	(-3.20, 3.69)	0.69	263	-0.89	(-4.66, 2.88)	0.93
	Stressful Life Events– No	201	1.5	(-3.74, 6.74)		197	0.65	(-4.55, 5.85)	

¹Adjusted for gestational age at visit.

²Adjusted for gestational age at visit, maternal age (continuous), maternal education, maternal race/ethnicity, and parity.

Abbreviations: CI, confidence interval.

Table S6. Crude and adjusted linear regression coefficients and 95% confidence intervals for second trimester CRH concentrations (pg/mL) in maternal plasma with an interquartile range increase in second trimester PFAS concentrations (ng/mL) in maternal serum stratified by perceived stress.

		Crude ¹				Adjusted ²			
		N	β	95% CI	P interaction	N	β	95% CI	P interaction
PFNA	Perceived Stress – Yes	60	3.87	(-5.04, 12.78)	0.5	56	3.45	(-6.59, 13.48)	0.55
	Perceived Stress – No	418	7.23	(4.05, 10.41)		403	5.55	(1.92, 9.19)	
PFOA	Perceived Stress – Yes	61	-1.00	(-12.08, 10.09)	0.29	57	-3.15	(-15.91, 9.60)	0.44
	Perceived Stress – No	419	5.59	(2.03, 9.14)		404	4.61	(0.28, 8.95)	
PFOS	Perceived Stress – Yes	61	4.25	(-5.40, 13.9)	0.8	57	4.76	(-6.32, 15.84)	0.86
	Perceived Stress – No	419	5.63	(1.91, 9.35)		404	1.69	(-2.58, 5.95)	
PFHxS	Perceived Stress – Yes	61	2.70	(-8.14, 13.55)	0.88	57	2.80	(-8.91, 14.51)	0.97
	Perceived Stress – No	419	3.66	(0.12, 7.2)		404	0.41	(-4.04, 4.86)	
Me-PFOA-AcOH	Perceived Stress – Yes	61	-2.82	(-11.84, 6.21)	0.47	57	-3.66	(-13.61, 6.92)	0.99
	Perceived Stress – No	418	0.97	(-2.22, 4.15)		403	-0.43	(-3.68, 2.81)	

¹Adjusted for gestational age at visit.

²Adjusted for gestational age at visit, maternal age (continuous), maternal education, maternal race/ethnicity, and parity.

Abbreviations: CI, confidence interval.

Note: among those who experienced perceived stress, no participants self-identified as “other/multi-racial” race/ethnicity and maternal race/ethnicity was modeled as 4 categories.

Table S7. Crude and adjusted linear regression coefficients and 95% confidence intervals for second trimester CRH concentrations (pg/mL) in maternal plasma with an interquartile range increase in second trimester PFAS concentrations (ng/mL) in maternal serum stratified by depression.

		Crude ¹				Adjusted ²			
		N	β	95% CI	P interaction	N	β	95% CI	P interaction
PFNA	Depression – Yes	36	13.21	(2.03, 24.39)	0.33	33	20.77	(1.56, 39.99)	0.47
	Depression – No	415	6.41	(3.19, 9.64)		398	4.9	(1.23, 8.56)	
PFOA	Depression – Yes	36	4.65	(-7.83, 17.14)	0.99	33	7.06	(-11.96, 26.07)	0.4
	Depression – No	417	4.78	(1.15, 8.41)		400	3.78	(-0.65, 8.21)	
PFOS	Depression – Yes	36	1.16	(-10.68, 13.0)	0.45	33	-3.88	(-27.33, 19.56)	0.74
	Depression – No	417	6.19	(2.32, 10.06)		400	2.73	(-1.71, 7.17)	
PFHxS	Depression – Yes	36	-0.87	(-15.86, 14.12)	0.58	33	-10.23	(-41.98, 21.52)	0.83
	Depression – No	417	3.91	(0.3, 7.52)		400	1.16	(-3.33, 5.64)	
Me-PFOSA-AcOH	Depression – Yes	36	-4.45	(-14.31, 5.41)	0.3	33	-10.12	(-29.15, 8.91)	0.93
	Depression – No	416	1.68	(-1.53, 4.88)		399	0.37	(-2.92, 3.66)	

¹Adjusted for gestational age at visit.

²Adjusted for gestational age at visit, maternal age (continuous), maternal education, maternal race/ethnicity, and parity.

Abbreviations: CI, confidence interval.

Table S8. Crude and adjusted linear regression coefficients and 95% confidence intervals for second trimester CRH concentrations (pg/mL) in maternal plasma with an interquartile range increase in second trimester PFAS concentrations (ng/mL) in maternal serum stratified by food insecurity.

	N	Crude ¹			Adjusted ²			
		β	95% CI	P interaction	N	β	95% CI	P interaction
PFNA								
Food Insecurity – Yes	72	8.41	(1.51, 15.3)	0.62	69	9.52	(1.72, 17.32)	0.56
Food Insecurity – No	407	6.13	(2.83, 9.42)		390	4.68	(0.89, 8.48)	
PFOA								
Food Insecurity – Yes	73	6.6	(-1.89, 15.09)	0.76	70	5.06	(-4.91, 15.03)	0.46
Food Insecurity – No	408	4.48	(0.78, 8.19)		391	3.75	(-0.79, 8.29)	
PFOS								
Food Insecurity – Yes	73	5.51	(-1.97, 12.99)	0.99	70	8.07	(-0.92, 17.06)	0.83
Food Insecurity – No	408	5.23	(1.31, 9.15)		391	1.78	(-2.71, 6.26)	
PFHxS								
Food Insecurity – Yes	73	8.2	(-0.9, 17.3)	0.31	70	8.2	(-3.12, 19.51)	0.96
Food Insecurity – No	408	2.42	(-1.25, 6.09)		391	-0.11	(-4.55, 4.33)	
Me-PFOSA-AcOH								
Food Insecurity – Yes	73	0.32	(-5.62, 6.26)	0.91	70	2.99	(-3.79, 9.78)	0.99
Food Insecurity – No	407	0.95	(-2.34, 4.25)		390	-0.56	(-4.09, 2.97)	

¹Adjusted for gestational age at visit.

²Adjusted for gestational age at visit, maternal age (continuous), maternal education, maternal race/ethnicity, and parity.

Abbreviations: CI, confidence interval.

Table S9. Crude and adjusted linear regression coefficients and 95% confidence intervals for second trimester CRH concentrations (pg/mL) in maternal plasma with an interquartile range increase in second trimester PFAS concentrations (ng/mL) in maternal serum stratified by financial strain.

		Crude ¹				Adjusted ²			
		N	β	95% CI	P interaction	N	β	95% CI	P interaction
PFNA	Financial Strain – Yes	166	11.56	(6.56, 16.55)	0.02	155	10.61	(4.9, 16.33)	0.79
	Financial Strain – No	260	2.57	(-2.13, 7.26)		253	3.00	(-2.05, 8.05)	
PFOA	Financial Strain – Yes	167	8.16	(2.33, 13.98)	0.12	156	6.1	(-0.49, 12.69)	0.68
	Financial Strain – No	261	1.22	(-3.79, 6.22)		254	3.03	(-3.09, 9.15)	
PFOS	Financial Strain – Yes	167	8	(2.48, 13.53)	0.11	156	4.63	(-1.82, 11.09)	0.99
	Financial Strain – No	261	0.2	(-5.63, 6.03)		254	-0.05	(-6.09, 5.99)	
PFHxS	Financial Strain – Yes	167	5.24	(-0.59, 11.08)	0.09	156	1.59	(-5.01, 8.18)	0.81
	Financial Strain – No	261	-1.55	(-6.65, 3.55)		254	-1.01	(-7.01, 4.99)	
Me-PFOSA-AcOH	Financial Strain – Yes	166	1.41	(-3.11, 5.93)	0.66	155	0.23	(-4.84, 5.3)	0.87
	Financial Strain – No	261	-0.34	(-5.02, 4.35)		254	-0.02	(-5.01, 4.98)	

¹Adjusted for gestational age at visit.

²Adjusted for gestational age at visit, maternal age (continuous), maternal education, maternal race/ethnicity, and parity.

Abbreviations: CI, confidence interval.