

Supplemental materials: Appendix tables. *Perfluoroalkyl substance exposure was negatively associated with cortisone levels in pregnancy: The Odense Child Cohort.*

Legends

Table S1. Maternal median concentrations of S-PFAS (5th-95th percentile) according to maternal and child characteristics. The *p*-value represents the difference between groups based on the Kruskal-Wallis test and the Wilcoxon's rank sum test.

Table S2. Spearman correlations for PFAS and diurnal glucocorticoid biomarkers (n=344), and S- cortisol (n=1048).

Table S3a. Percentage change in dU-cortisol with a two-fold increase in S-PFAS concentrations. $P_{\text{interaction}}$ is the interaction term between the PFAS compound and parity. The adjusted model is adjusted for age, offspring sex and parity (not in the parity-specific models).

Table S3b. Percentage change in dU-cortisone with a two-fold increase in S-PFAS concentrations. $P_{\text{interaction}}$ is the interaction term between the PFAS compound and parity. The adjusted model is adjusted for age, offspring sex and parity (not in the parity-specific models).

Table S3c. Percentage change in dU-cortisol/cortisone (dU-C/C) with a two-fold increase in S-PFAS concentrations. $P_{\text{interaction}}$ is the interaction term between the PFAS compound and parity. The adjusted model is adjusted for age, offspring sex and parity (not in the parity-specific models).

Table S3d. Change (nmol/L) in S-cortisol with a two-fold increase in S-PFAS concentrations. $P_{\text{interaction}}$ is the interaction term between the PFAS compound and parity. The adjusted model is adjusted for age, offspring sex and parity (not in the parity-specific models).

Table S1Maternal median concentrations of S-PFAS (5th-95th percentile) according to maternal and child characteristics.

Variables	n (%)	PFOS ng/mL	PFOA ng/mL	PFHxS ng/mL	PFNA ng/mL	PFDA ng/mL
Total	1048	7.64 (3.47-15.14)	1.64 (0.65-3.89)	0.33 (0.11-0.76)	0.64 (0.31-1.45)	0.28 (0.15-0.72)
Age (years)						
< 25	107 (10)	7.99 (3.52-16.75)	1.93 (0.75-4.19)	0.32 (0.14-0.81)	0.70 (0.30-1.53)	0.29 (0.15-0.72)
25-34	754 (72)	7.75 (3.58-15.30)	1.67 (0.67-3.85)	0.34 (0.10-0.72)	0.64 (0.34-1.47)	0.28 (0.16-0.72)
≥ 35	187 (18)	7.19 (3.22-14.34)	1.28 (0.55-3.78)	0.32 (0.12-0.82)	0.62 (0.27-1.29)	0.27 (0.14-0.72)
<i>p</i> -value ^a		0.03	<0.01	0.88	0.19	0.68
Pre-pregnancy BMI (kg/m ²)						
< 24.9	665 (64)	7.69 (3.54-15.00)	1.67 (0.62-4.03)	0.34 (0.11-0.75)	0.66 (0.31-1.41)	0.29 (0.16-0.74)
25 – 29.9	259 (25)	7.55 (3.47-15.31)	1.58 (0.69-3.52)	0.32 (0.12-0.76)	0.62 (0.31-1.47)	0.27 (0.16-0.65)
≥ 30	111 (11)	7.18 (3.15-14.91)	1.49 (0.69-3.89)	0.31 (0.10-0.74)	0.60 (0.30-1.55)	0.24 (0.12-0.51)
<i>p</i> -value ^a		0.47	0.70	0.03	0.15	<0.01
Ethnicity						
European	1019 (97)	7.72 (3.58-15.19)	1.66 (0.68-3.89)	0.33 (0.12-0.76)	0.64 (0.32-1.45)	0.28 (0.15-0.72)
Non-European	29 (3)	4.54 (1.14-11.65)	0.99 (0.31-4.03)	0.24 (0.08-0.85)	0.57 (0.27-1.57)	0.33 (0.12-0.73)
<i>p</i> -value ^a		< 0.01	<0.01	0.15	0.20	0.43
Smoking status						
Yes	36 (3)	8.29 (3.17-12.30)	2.01 (0.88-3.21)	0.32 (0.09-0.74)	0.60 (0.36-1.48)	0.26 (0.16-0.53)
No	999 (97)	7.52 (3.46-15.30)	1.62 (0.63-3.98)	0.33 (0.11-0.76)	0.64 (0.31-1.45)	0.28 (0.15-0.72)
<i>p</i> -value ^a		0.72	0.03	0.81	0.73	0.53
Educational level						
High school or less	308 (30)	7.70 (3.47-16.53)	1.79 (0.72-4.78)	0.32 (0.11-0.73)	0.64 (0.30-1.64)	0.29 (0.13-0.82)
High school + 1-4 years	528 (51)	7.84 (3.54-14.92)	1.58 (0.59-3.61)	0.33 (0.10-0.75)	0.62 (0.31-1.22)	0.28 (0.16-0.69)
High school + > 4years	199 (19)	7.32 (3.39-14.91)	1.58 (0.65-3.58)	0.36 (0.13-0.86)	0.70 (0.33-1.39)	0.30 (0.16-0.64)
<i>p</i> -value ^a		0.20	<0.01	0.04	0.10	0.26
Parity						
Nulliparous	606 (58)	8.38 (3.79-16.46)	1.97 (0.92-4.22)	0.38 (0.14-0.80)	0.71 (0.35-1.53)	0.29 (0.16-0.72)
Primi + multiparous	442 (42)	6.79 (3.22-14.04)	1.20 (0.55-2.99)	0.27 (0.08-0.71)	0.57 (0.29-1.08)	0.27 (0.15-0.72)
<i>p</i> -value ^a		<0.01	<0.01	<0.01	<0.01	<0.01
Offspring sex						
Female	488 (47)	7.41 (3.39-15.00)	1.60 (0.63-3.80)	0.32 (0.09-0.74)	0.63 (0.31-1.32)	0.28 (0.15-0.69)
Male	546 (53)	7.84 (3.52-15.31)	1.67 (0.66-4.03)	0.34 (0.13-0.76)	0.67 (0.32-1.48)	0.29 (0.15-0.72)
<i>p</i> -value ^a		0.42	0.07	0.25	0.14	0.42

^a*p*-value represents the difference between groups based on the Kruskal-Wallis test and the Wilcoxon's rank sum test.

Table S2

Spearman correlations for PFAS and diurnal glucocorticoid biomarkers (n=344), and S-cortisol (n=1048).

	dU-cortisol	dU-cortisone	dU-C/C	S-cortisol
PFOS	0.02	-0.14 ^b	0.16 ^b	0.06 ^a
PFOA	0.03	-0.00	0.03	0.07 ^a
PFHxS	-0.02	0.02	-0.07	0.12 ^b
PFNA	0.06	-0.01	0.05	0.08 ^b
PFDA	0.05	-0.04	0.07	0.03

^a *p*-value < 0.05.

^b *p*-value < 0.01.

Table S3a

Percentage change in dU-cortisol with a two-fold increase in S-PFAS concentrations.

	dU-cortisol						
	All women (n = 340)		Nulliparous (n = 200)		Primi- and multiparous (n = 140)		<i>p</i> interaction ^a
	β	95% CI	β	95% CI	β	95% CI	
PFOS							
Crude	0.9	-6.1; 8.4	-2.6	-11.9; 7.6	1.7	-8.8; 13.4	0.56
Adjusted ^b	-0.6	-7.7; 7.0	-2.6	-11.9; 7.6	1.9	-8.7; 13.7	0.55
PFOA							
Crude	0.1	-5.2; 5.8	-1.5	-8.8; 6.5	-3.9	-12.5; 5.7	0.69
Adjusted ^b	-2.4	-8.1; 3.6	-1.3	-8.7; 6.7	-4.0	-12.7; 5.5	0.66
PFHxS							
Crude	-1.0	-5.1; 3.2	-2.1	-7.6; 3.8	-2.2	-8.4; 4.5	0.99
Adjusted ^b	-1.9	-6.2; 2.5	-1.9	-7.5; 4.0	-2.0	-8.2; 4.7	0.99
PFNA							
Crude	2.9	-4.1; 10.4	1.9	-6.9; 11.4	-0.7	-12.6; 12.9	0.75
Adjusted ^b	1.2	-6.0; 9.0	2.2	-6.7; 11.8	-0.6	-12.6; 13.0	0.73
PFDA							
Crude	1.8	-4.7; 8.7	-1.4	-9.5; 7.3	4.9	-5.5; 16.5	0.36
Adjusted ^b	1.2	-5.3; 8.1	-1.1	-9.2; 7.7	4.8	-5.7; 16.4	0.41

^a Interaction term between the PFAS compound and parity.^b Adjusted for age, offspring sex and parity (not in the parity-specific models).**p* < 0.05.

Table S3b

Percentage change in dU-cortisone with a two-fold increase in S-PFAS concentrations.

	dU-cortisone						
	All women (n = 340)		Nulliparous (n = 200)		Primi- and multiparous (n = 140)		<i>p</i> interaction ^a
	β	95% CI	β	95% CI	β	95% CI	
PFOS							
Crude	-7.0*	-12.7; -0.9	-11.9*	-19.3; -3.9	-5.2	-13.8; 4.3	0.27
Adjusted ^b	-9.1*	-14.7; -3.0	-11.9*	-19.2; -3.9	-5.5	-14.1; 3.9	0.29
PFOA							
Crude	-1.3	-6.0; 3.6	-2.6	-9.1; 4.3	-7.1	-14.5; 1.0	0.39
Adjusted ^b	-4.5	-9.4; 0.7	-2.9	-9.3; 4.1	-6.9	-14.4; 1.2	0.44
PFHxS							
Crude	1.0	-2.8; 4.8	-1.6	-6.5; 3.7	1.7	-4.0; 7.8	0.41
Adjusted ^b	-0.6	-4.4; 3.3	-2.0	-6.9; 3.2	1.1	-4.6; 7.2	0.43
PFNA							
Crude	0.8	-5.3; 7.3	-2.2	-9.7; 5.9	0.1	-10.6; 12.1	0.75
Adjusted ^b	-1.9	-8.1; 4.7	-2.7	-10.1; 5.4	-0.3	-11.0; 11.7	0.73
PFDA							
Crude	-0.8	-6.4; 5.2	-1.5	-8.6; 6.2	-2.0	-10.7; 7.6	0.93
Adjusted ^b	-2.0	-7.6; 3.9	-2.2	-9.4; 5.5	-1.7	-10.4; 7.9	0.93

^a Interaction term between the PFAS compound and parity.^b Adjusted for age, offspring sex and parity (not in the parity-specific models).**p* < 0.05.

Table S3c

Percentage change in dU-cortisol/cortisone (dU-C/C) with a two-fold increase in S-PFAS concentrations.

	dU-C/C						
	All women (n = 340)		Nulliparous (n = 200)		Primi- and multiparous (n = 140)		<i>p</i> interaction ^a
	β	95% CI	β	95% CI	β	95% CI	
PFOS							
Crude	8.4*	2.6; 14.5	10.5*	2.4; 19.3	7.3	-1.4; 16.7	0.61
Adjusted ^b	9.3*	3.3; 15.6	10.5*	2.5; 19.2	7.8	-0.8; 17.2	0.67
PFOA							
Crude	1.5	-2.7; 5.9	1.2	-4.8; 7.5	3.4	-3.9; 11.3	0.65
Adjusted ^b	2.2	-2.4; 7.0	1.6	-4.3; 7.9	3.1	-4.2; 10.9	0.76
PFHxS							
Crude	-2.0	-5.1; 1.3	-0.5	-4.9; 4.1	-3.8	-8.6; 1.2	0.34
Adjusted ^b	-1.3	-4.6; 2.1	0.1	-4.4; 4.7	-3.1	-7.9; 2.0	0.36
PFNA							
Crude	2.1	-3.3; 7.8	4.1	-2.9; 11.7	-0.8	-10.1; 9.6	0.44
Adjusted ^b	3.2	-2.5; 9.2	5.0	-2.1; 12.5	-0.3	-9.7; 10.0	0.40
PFDA							
Crude	2.6	-2.4; 8.0	0.1	-6.3; 6.9	7.1	-1.3; 16.2	0.20
Adjusted ^b	3.3	-1.9; 8.7	1.1	-5.3; 8.0	6.6	-1.7; 15.5	0.33

^a Interaction term between the PFAS compound and parity.^b Adjusted for age, offspring sex and parity (not in the parity-specific models).**p* < 0.05.

Table S3d

Change (nmol/L) in S-cortisol with a two-fold increase in S-PFAS concentrations.

	S-cortisol						
	All women (n = 1034)		Nulliparous (n = 606)		Primi- and multiparous (n = 428)		<i>p</i> interaction ^a
	β	95% CI	β	95% CI	β	95% CI	
PFOS							
Crude	21.3*	1.8; 40.7	4.4	-20.1; 28.9	0.004	-30.5; 30.5	0.83
Adjusted ^b	2.4	-16.5; 21.2	5.6	-8.6; 29.8	-2.6	-32.6; 27.5	0.68
PFOA							
Crude	21.7*	5.4; 38.0	-18.8	-42.1; 4.5	-12.3	-39.0; 14.4	0.72
Adjusted ^b	-15.8	-33.1; 1.5	-19.4	-42.3; 3.6	-11.1	-37.5; 15.3	0.64
PFHxS							
Crude	15.7*	1.6; 29.8	-13.1	-32.4; 6.1	11.4	-9.0; 31.8	0.09
Adjusted ^b	3.4	-10.5; 17.3	-7.6	-26.7; 11.5	15.6	-4.6; 35.7	0.10
PFNA							
Crude	24.9*	4.9; 44.9	11.6	-13.0; 36.2	-9.7	-42.6; 23.2	0.31
Adjusted ^b	4.7	-14.7; 24.2	11.6	-12.7; 35.9	-7.6	-40.1; 24.9	0.35
PFDA							
Crude	2.6	-2.4; 8.0	9.7	-14.6; 34.0	-5.3	-33.5; 23.0	0.43
Adjusted ^b	3.3	-1.9; 8.7	9.4	-14.5; 33.3	-3.6	-31.5; 24.2	0.49

^a Interaction term between the PFAS compound and parity.^b Adjusted for age, offspring sex and parity (not in the parity-specific models).**p* < 0.05.