

Supplement to: Early life exposures to perfluoroalkyl substances in relation to adipokine hormone levels at birth and during childhood.

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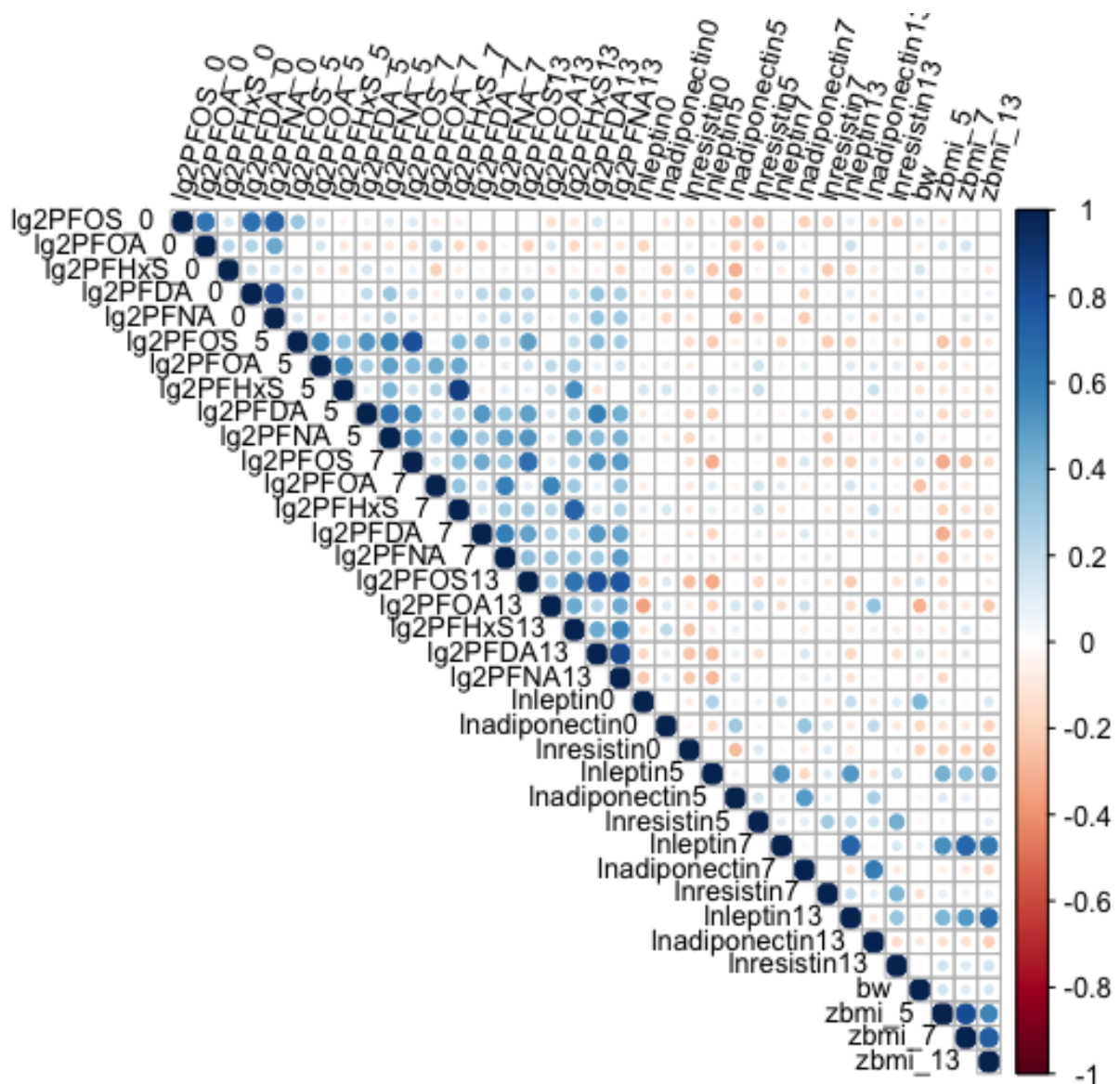
Supplementary Table 1. Comparison of main characteristics in mother-child pairs included and excluded from analysis.

Characteristic	Included in analysis (n=80)	Excluded from analysis (n=576)	P- difference^a
	% or mean $\pm$ sd	% or mean $\pm$ sd	
Maternal age (years)	30.5 $\pm$ 5.2	29.0 $\pm$ 5.1	0.02
Pre-pregnancy BMI (kg/m ²)	24.3 $\pm$ 4.5	23.8 $\pm$ 4.1	0.26
Social class, high	26.2%	24.0%	0.19
Parity, $\geq$ 1 older sibling	80.0%	72.0%	0.13
Smoking in pregnancy, yes	21.2%	28.8%	0.16
Gestational weight gain (kg)	14.9 $\pm$ 6.3	14.9 $\pm$ 5.2	0.99
Gestational diabetes, yes	8.0%	7.7%	0.56
Birth weight (g)	3779 $\pm$ 533	3689 $\pm$ 518	0.16
Exclusive breastfeeding, $\geq$ 6 months	29.1%	32.8%	0.51
Child age at 5-year exams (years)	4.9 $\pm$ 0.05	4.9 $\pm$ 0.06	0.23
zBMI at age 5 years (sd)	0.40 $\pm$ 0.8	0.38 $\pm$ 0.9	0.88
Child age at 7-year exams (years)	7.5 $\pm$ 0.09	7.5 $\pm$ 0.10	0.18
zBMI at age 7 years (sd)	0.44 $\pm$ 0.8	0.32 $\pm$ 0.8	0.26
Maternal serum PFOS (ng/mL) ^b	28.8 $\pm$ 1.4	27.1 $\pm$ 1.3	0.08
Child serum PFOS – age 5 (ng/mL) ^b	20.1 $\pm$ 1.4	16.1 $\pm$ 1.4	<0.001
Child serum PFOS – age 7 (ng/mL) ^b	16.7 $\pm$ 1.3	15.0 $\pm$ 1.3	0.01
Maternal serum PFOA (ng/mL) ^b	3.3 $\pm$ 1.5	3.2 $\pm$ 1.4	0.21
Child serum PFOA – age 5 (ng/mL) ^b	4.2 $\pm$ 1.4	4.0 $\pm$ 1.3	0.18
Child serum PFOA – age 7 (ng/mL) ^b	4.1 $\pm$ 1.4	4.6 $\pm$ 1.5	0.03
Maternal serum PFHxS (ng/mL) ^b	6.0 $\pm$ 2.4	4.2 $\pm$ 2.2	<0.001
Child serum PFHxS – age 5 (ng/mL) ^b	0.7 $\pm$ 1.7	0.6 $\pm$ 1.8	0.02
Child serum PFHxS – age 7 (ng/mL) ^b	0.5 $\pm$ 1.5	0.5 $\pm$ 1.7	0.99
Maternal serum PFDA (ng/mL) ^b	0.3 $\pm$ 1.5	0.3 $\pm$ 1.6	0.05
Child serum PFDA – age 5 (ng/mL) ^b	0.3 $\pm$ 1.6	0.3 $\pm$ 1.6	0.52
Child serum PFDA – age 7 (ng/mL) ^b	0.5 $\pm$ 1.6	0.3 $\pm$ 1.8	<0.001
Maternal serum PFNA (ng/mL) ^b	0.6 $\pm$ 1.5	0.5 $\pm$ 1.4	0.09
Child serum PFNA – age 5 (ng/mL) ^b	1.1 $\pm$ 1.4	0.9 $\pm$ 1.5	0.05
Child serum PFNA – age 7 (ng/mL) ^b	1.3 $\pm$ 1.5	1.1 $\pm$ 1.6	0.05
^a p-value from Pearson chi-squared test for categorical variables and Student's t-test for continuous variables.			
^b Geometric mean $\pm$ geometric sd			

Supplementary Table 2. Distributions of PFAS concentrations in maternal serum at pregnancy and child serum at postnatal examinations.

PFAS/Age	min	p25	Median (p50)	p75	max
PFOS (ng/mL)					
Maternal serum	9.4	23.3	28.4	35.5	66.7
Child serum- age 5 years	6.4	16.9	20.5	24.0	47.1
Child serum- age 7 years	6.2	13.4	16.8	21.2	31.0
Child serum- age 13 years	1.5	5.8	6.9	9.3	16.4
PFOA (ng/mL)					
Maternal serum	0.8	2.6	3.6	4.1	7.5
Child serum- age 5 years	1.3	3.5	4.5	5.4	8.9
Child serum- age 7 years	2.1	3.3	3.8	5.1	10.2
Child serum- age 13 years	0.8	1.6	2.2	2.6	5.2
PFHxS (ng/mL)					
Maternal serum	0.8	3.5	7.8	12.2	25.7
Child serum- age 5 years	0.1	0.5	0.7	1.1	2.5
Child serum- age 7 years	0.2	0.4	0.5	0.7	1.4
Child serum- age 13 years	0.1	0.3	0.4	0.5	0.7
PFDA (ng/mL)					
Maternal serum	0.1	0.2	0.3	0.4	0.8
Child serum- age 5 years	0.1	0.2	0.3	0.4	0.8
Child serum- age 7 years	0.1	0.3	0.4	0.6	1.4
Child serum- age 13 years	0.1	0.3	0.3	0.4	1.2
PFNA (ng/mL)					
Maternal serum	0.2	0.5	0.7	0.9	1.9
Child serum- age 5 years	0.4	0.8	1.0	1.4	3.0
Child serum- age 7 years	0.5	0.9	1.2	2.1	5.7
Child serum- age 13 years	0.2	0.6	0.7	0.9	2.0

Supplementary Figure 1. Within- and across-age Pearson correlations of PFASs, adipokine hormone and child anthropometry measures.^a



^a Positive correlations are shown in blue scale and negative correlations are shown in red scale. Color intensity and circle diameter are proportional to the strength of correlation (stronger correlations are shown with darker color intensity and larger circle diameter).

Supplemental Table 3. Distributions of adipokine hormone concentrations at birth and over the childhood period, overall and separately in male and female offsprings.

Hormone/Age	Group	min	p25	Median (p50)	p75	max	P-sex difference
Leptin (ng/mL)							
Birth (cord blood)	All	0.5	4.5	6.7	11.0	65.0	0.01
	Males	0.5	3.7	5.2	8.4	18.5	
	Females	2.1	5.0	8.2	13.2	65	
Age 5 years	All	0.1	0.7	1.1	1.8	7.6	0.01
	Males	0.1	0.5	0.8	1.4	3.6	
	Females	0.3	0.8	1.5	2.5	7.6	
Age 7 years	All	0.1	1.1	2.2	4.0	18.5	0.02
	Males	0.1	0.9	1.7	3.3	4.4	
	Females	0.5	1.4	2.7	4.6	18.5	
Age 13 years	All	0.1	2.6	4.4	12.0	65.0	0.01
	Males	0.1	1.4	2.9	6.8	29.0	
	Females	2.3	3.6	5.9	16.8	65.0	
Adiponectin (µg/mL)							
Birth (cord blood)	All	11.4	22.1	28.6	36.0	315.3	0.73
	Males	12.7	20.8	26.2	36.8	315.3	
	Females	11.4	23.6	29.2	35.2	184.8	
Age 5 years	All	5.1	9.6	11.5	14.2	33.2	0.13
	Males	7.4	9.6	11.5	14.9	33.2	
	Females	5.1	9.3	11.6	13.5	15.7	
Age 7 years	All	5.7	9.0	10.6	12.9	17.5	0.88
	Males	6.6	8.9	10.6	12.5	16.1	
	Females	5.7	9.3	10.7	13	17.5	
Age 13 years	All	4.9	7.4	9.1	10.7	28.1	0.13
	Males	4.9	7.3	8.5	10.5	15.4	
	Females	5.8	7.7	9.3	11.1	28.1	
Resistin (ng/mL)							
Birth (cord blood)	All	6.9	22.4	30.9	41.7	352.6	0.02
	Males	6.9	17.9	27.1	35.4	352.6	
	Females	18.4	26.3	34.6	53.3	206.9	
Age 5 years	All	1.6	3.1	3.7	4.9	14.6	0.15
	Males	1.8	2.9	3.4	4.3	14.6	
	Females	1.6	3.4	4.4	5.5	11.5	
Age 7 years	All	1.6	3.0	3.6	4.4	9.0	0.23
	Males	1.6	2.6	3.6	4.3	9.0	
	Females	2.0	3.3	3.7	4.4	8.8	
Age 13 years	All	2.0	3.1	3.8	4.5	7.8	0.07
	Males	2.0	3.1	3.6	4.2	5.9	
	Females	2.7	3.1	3.8	4.9	7.8	

Supplementary Table 4 Adjusted effect estimates ^a for the association of PFAS concentrations (log₂) in maternal or child serum with repeated (concurrent and subsequent) LEPTIN concentrations (ln), and p-values for effect modification (EM) by age at hormone assessment and sex.

Age/PFAS	Group	p-value for age EM	p-value for sex EM	Cord blood leptin	Age 5 - Leptin	Age 7 - Leptin	Age 13- Leptin
				β (95% CI)	β (95% CI)	β (95% CI)	β (95% CI)
Maternal serum							
PFOS	All	0.49	0.31	-0.31 (-1.19, 0.56)	-0.13 (-1.00, 0.74)	-0.18 (-1.05, 0.69)	0.22 (-0.66, 1.09)
	Males	0.99		0.11 (-1.07, 1.29)	0.04 (-1.13, 1.22)	0.21 (-0.96, 1.40)	0.25 (-0.93, 1.43)
	Females	0.01		-0.93 (-2.30, 0.43)	-0.44 (-1.81, 0.92)	-0.70 (-2.06, 0.67)	0.12 (-1.25, 1.49)
PFOA	All	0.03	0.76	-0.91 (-1.74, -0.09)	-0.20 (-1.03, 0.62)	0.17 (-0.65, 0.99)	0.56 (-0.26, 1.39)
	Males	0.50		-0.70 (-1.85, 0.45)	0.15 (-1.00, 1.30)	0.38 (-0.77, 1.53)	0.48 (-0.67, 1.63)
	Females	0.17		-1.18 (-2.44, 0.08)	-0.73 (-1.99, 0.52)	0.17 (-1.09, 1.43)	0.25 (-1.01, 1.51)
PFHxS	All	0.12	0.72	-0.05 (-0.40, 0.31)	-0.41 (-0.77, -0.06)	-0.12 (-0.48, 0.23)	-0.35 (-0.73, 0.02)
	Males	0.37		0.07 (-0.48, 0.62)	-0.25 (-0.80, 0.30)	0.03 (-0.52, 0.58)	-0.29 (-0.90, 0.31)
	Females	0.03		-0.05 (-0.51, 0.42)	-0.49 (-0.96, -0.03)	-0.15 (-0.62, 0.31)	-0.37 (-0.84, 0.11)
PFDA	All	0.17	0.22	-0.18 (-0.88, 0.52)	-0.02 (-0.72, 0.68)	0.03 (-0.67, 0.73)	0.46 (-0.24, 1.17)
	Males	0.04		0.32 (-0.77, 1.41)	-0.07 (-1.16, 1.01)	0.30 (-0.79, 1.39)	1.21 (0.11, 2.31)
	Females	0.35		-0.58 (-1.46, 0.30)	0.00 (-0.89, 0.88)	-0.20 (-1.08, 0.68)	0.04 (-0.85, 0.92)
PFNA	All	0.28	0.58	-0.24 (-0.95, 0.47)	-0.14 (-0.85, 0.57)	-0.16 (-0.87, 0.56)	0.24 (-0.47, 0.96)
	Males	0.59		-0.08 (-1.11, 0.95)	0.13 (-0.89, 1.16)	0.11 (-0.91, 1.14)	0.53 (-0.50, 1.56)
	Females	0.21		-0.32 (-1.31, 0.67)	-0.36 (-1.35, 0.63)	-0.36 (-1.35, 0.63)	0.07 (-0.92, 1.06)
Age 5 – child serum							
PFOS	All	0.75	0.02		-1.09 (-2.06, -0.12)	-0.83 (-1.80, 0.14)	-1.09 (-2.11, -0.09)
	Males	0.55			-0.54 (-1.95, 0.87)	0.37 (-1.04, 1.77)	-0.03 (-1.47, 1.41)
	Females	0.66			-1.69 (-2.95, -0.42)	-2.22 (-3.49, -0.96)	-2.16 (-3.49, -0.83)
PFOA	All	0.43	0.09		-0.17 (-1.25, 0.89)	0.01 (-1.06, 1.08)	0.41 (-0.65, 1.48)
	Males	0.75			0.51 (-0.97, 1.99)	0.82 (-0.66, 2.30)	1.10 (-0.37, 2.58)
	Females	0.85			-0.93 (-2.50, 0.64)	-0.81 (-2.38, 0.76)	-0.63 (-2.19, 0.94)
PFHxS	All	0.46	0.95		0.31 (-0.37, 0.99)	-0.11 (-0.78, 0.57)	-0.01 (-0.70, 0.67)
	Males	0.65			0.18 (-0.87, 1.23)	0.16 (-0.89, 1.22)	-0.18 (-1.24, 0.88)

	Females	0.09			0.47 (-0.44, 1.38)	-0.21 (-1.12, 0.70)	-0.19 (-1.11, 0.73)
PFDA	All	0.02	0.01		-0.59 (-1.28, 0.09)	-0.13 (-0.81, 0.56)	-0.81 (-1.50, -0.12)
	Males	0.08			-0.23 (-1.36, 0.90)	1.31 (0.18, 2.44)	0.70 (-0.43, 1.83)
	Females	0.04			-0.83 (-1.60, -0.07)	-1.13 (-1.89, -0.37)	-1.65 (-2.42, -0.88)
PFNA	All	0.79	0.22		-0.31 (-1.20, 0.58)	-0.09 (-0.99, 0.80)	-0.31 (-1.21, 0.58)
	Males	0.46			-0.15 (-1.47, 1.16)	0.78 (-0.53, 2.10)	0.77 (-0.55, 2.09)
	Females	0.23			-0.36 (-1.49, 0.78)	-1.00 (-2.14, 0.13)	-0.60 (-1.74, 0.53)
Age 7 – child serum							
PFOS	All	0.56	0.04			-0.45 (-1.58, 0.68)	-0.74 (-1.87, 0.39)
	Males	0.79				0.59 (-0.13, 2.31)	0.38 (-1.35, 2.12)
	Females	0.76				-1.57 (-3.07, -0.05)	-1.70 (-3.23, -0.17)
PFOA	All	0.29	0.28			0.40 (-0.57, 1.37)	0.85 (-0.16, 1.87)
	Males	0.19				0.91 (-0.70, 2.53)	0.61 (-1.00, 2.23)
	Females	0.60				0.49 (-0.67, 1.64)	0.29 (-0.90, 1.47)
PFHxS	All	0.98	0.98			-0.31 (-1.21, 0.59)	-0.30 (-1.22, 0.62)
	Males	0.58				-0.31 (-1.99, 1.38)	-0.72 (-2.46, 1.02)
	Females	0.74				-0.05 (-1.11, 1.00)	-0.15 (-1.21, 0.91)
PFDA	All	0.81	0.10			-0.07 (-0.76, 0.61)	-0.14 (-0.85, 0.56)
	Males	0.92				0.51 (-0.61, 1.64)	0.56 (-0.57, 1.69)
	Females	0.91				-0.47 (-1.31, 0.36)	-0.44 (-1.30, 0.42)
PFNA	All	0.30	0.93			0.13 (-0.65, 0.91)	0.10 (-0.68, 0.89)
	Males	0.79				0.92 (-0.43, 2.27)	0.77 (-0.58, 2.11)
	Females	0.75				-0.02 (-0.96, 0.92)	-0.11 (-1.06, 0.83)
Age 13 – child serum							
PFOS	All		0.21				0.01 (-0.50, 0.52)
	Males						0.57 (-0.47, 1.61)
	Females						-0.15 (-0.76, 0.47)
PFOA	All		0.67				-0.17 (-0.76, 0.41)
	Males						0.22 (-0.95, 1.40)
	Females						-0.13 (-0.98, 0.72)
PFHxS	All		0.68				0.16 (-0.33, 0.66)

	Males						0.38 (-0.68, 1.44)
	Females						0.16 (-0.40, 0.72)
PFDA	All		0.07				0.03 (-0.37, 0.43)
	Males						0.51 (-0.19, 1.22)
	Females						-0.25 (-0.77, 0.26)
PFNA	All		0.28				0.20 (-0.29, 0.68)
	Males						0.69 (-0.29, 1.57)
	Females						0.00 (-0.60, 0.60)

^a Effect estimates from GEE models (repeated hormone measures) or linear regression models (cross-sectional model at age 13 years). Effect estimates for maternal-serum PFASs are adjusted for child sex, exact age at examinations, maternal age, parity, prepregnancy BMI, gestational weight gain, maternal fish intake and an interaction term between PFAS*age at hormone assessments. Effect estimates for child-serum PFASs are additionally adjusted for breastfeeding, and child fish intake.

Supplementary Table 5. Adjusted effect estimates ^a for the association of PFAS concentrations (log₂) in maternal or child serum with repeated (concurrent and subsequent) ADIPONECTIN concentrations (ln), and p-values for effect modification (EM) by age at hormone assessment and sex.

Age/PFAS	Group	p-value for age EM	p-value for sex EM	Cord blood adiponectin	Age 5 - Adiponectin	Age 7 - Adiponectin	Age 13 - Adiponectin
				β (95% CI)	β (95% CI)	β (95% CI)	β (95% CI)
Maternal serum							
PFOS	All	0.97	0.09	-0.18 (-0.60, 0.23)	-0.21 (-0.63, 0.20)	-0.13 (-0.55, 0.28)	-0.09 (-0.51, 0.33)
	Males	0.11		0.42 (-0.12, 0.97)	-0.19 (-0.74, 0.36)	-0.11 (-0.65, 0.44)	-0.14 (-0.69, 0.41)
	Females	0.02		-1.21 (-1.86, -0.55)	-0.27 (-0.92, 0.39)	-0.22 (-0.88, 0.44)	-0.05 (-0.73, 0.62)
PFOA	All	0.65	0.60	0.02 (-0.37, 0.42)	-0.25 (-0.64, 0.15)	-0.06 (-0.45, 0.33)	-0.01 (-0.41, 0.38)
	Males	0.47		0.10 (-0.44, 0.64)	-0.36 (-0.90, 0.18)	-0.20 (-0.74, 0.33)	-0.10 (-0.64, 0.44)
	Females	0.91		-0.12 (-0.75, 0.51)	0.03 (-0.60, 0.66)	0.16 (-0.47, 0.79)	0.02 (-0.60, 0.66)
PFHxS	All	0.040	0.98	-0.26 (-0.45, -0.09)	-0.18 (-0.35, -0.02)	0.01 (-0.15, 0.18)	-0.05 (-0.23, 0.13)
	Males	0.63		-0.18 (-0.43, 0.07)	-0.22 (-0.47, 0.03)	-0.05 (-0.3, 0.21)	-0.04 (-0.34, 0.26)
	Females	0.02		-0.38 (-0.61, -0.15)	-0.17 (-0.40, 0.06)	0.06 (-0.17, 0.29)	-0.07 (-0.31, 0.17)
PFDA	All	0.63	0.09	-0.28 (-0.62, 0.05)	-0.21 (-0.54, 0.13)	-0.08 (-0.42, 0.25)	-0.03 (-0.36, 0.30)
	Males	0.22		0.31 (-0.19, 0.82)	-0.28 (-0.79, 0.23)	0.00 (-0.50, 0.51)	0.01 (-0.51, 0.53)
	Females	0.04		-0.73 (-1.15, -0.30)	-0.16 (-0.59, 0.26)	-0.14 (-0.57, 0.28)	-0.02 (-0.44, 0.40)
PFNA	All	0.53	0.04	-0.38 (-0.72, -0.04)	-0.22 (-0.56, 0.11)	-0.15 (-0.48, 0.19)	-0.09 (-0.43, 0.25)
	Males	0.44		0.22 (-0.25, 0.70)	-0.15 (-0.62, 0.33)	-0.10 (-0.58, 0.37)	-0.07 (-0.55, 0.41)
	Females	0.01		-1.09 (-1.55, -0.63)	-0.36 (-0.82, 0.10)	-0.23 (-0.69, 0.22)	-0.13 (-0.59, 0.32)
Age 5 – child serum							
PFOS	All	0.71	0.72		-0.10 (-0.39, 0.17)	0.01 (-0.28, 0.29)	-0.01 (-0.30, 0.29)
	Males	0.63			-0.03 (-0.40, 0.35)	-0.05 (-0.42, 0.33)	-0.21 (-0.60, 0.17)
	Females	0.02			-0.21 (-0.62, 0.20)	0.10 (-0.31, 0.51)	0.36 (-0.08, 0.80)
PFOA	All	0.99	0.64		0.04 (-0.27, 0.34)	0.04 (-0.27, 0.34)	0.04 (-0.27, 0.34)
	Males	0.80			0.04 (-0.36, 0.44)	-0.07 (-0.47, 0.33)	-0.12 (-0.52, 0.28)
	Females	0.86			0.04 (-0.42, 0.50)	0.13 (-0.33, 0.59)	0.14 (-0.32, 0.60)
PFHxS	All	0.14	0.50		0.02 (-0.16, 0.21)	-0.02 (-0.21, 0.17)	0.14 (-0.05, 0.34)
	Males	0.86			0.06 (-0.22, 0.34)	-0.02 (-0.30, 0.26)	0.02 (-0.26, 0.30)

	Females	0.09			0.01 (-0.25, 0.27)	-0.07 (-0.33, 0.20)	0.14 (-0.13, 0.41)
PFDA	All	0.59	0.93		0.00 (-0.19, 0.20)	0.07 (-0.13, 0.26)	-0.02 (-0.22, 0.18)
	Males	0.92			-0.02 (-0.34, 0.28)	-0.08 (-0.39, 0.23)	-0.10 (-0.41, 0.21)
	Females	0.17			0.01 (-0.24, 0.25)	0.19 (-0.06, 0.43)	0.09 (-0.15, 0.34)
PFNA	All	0.89	0.34		0.01 (-0.25, 0.26)	-0.03 (-0.29, 0.22)	-0.06 (-0.32, 0.19)
	Males	0.66			0.07 (-0.29, 0.42)	-0.05 (-0.40, 0.31)	-0.13 (-0.49, 0.22)
	Females	0.82			-0.14 (-0.48, 0.21)	-0.07 (-0.41, 0.27)	-0.03 (-0.37, 0.31)
Age 7 – child serum							
PFOS	All	0.59	0.55			0.20 (-0.08, 0.48)	0.13 (-0.15, 0.42)
	Males	0.58				0.22 (-0.17, 0.61)	0.12 (-0.27, 0.52)
	Females	0.96				0.08 (-0.34, 0.51)	0.08 (-0.36, 0.52)
PFOA	All	0.49	0.20			-0.12 (-0.36, 0.13)	-0.03 (-0.29, 0.22)
	Males	0.31				-0.01 (-0.4, 0.37)	0.17 (-0.25, 0.60)
	Females	0.86				-0.22 (-0.53, 0.08)	-0.24 (-0.57, 0.07)
PFHxS	All	0.06	0.34			-0.02 (-0.24, 0.21)	0.16 (-0.07, 0.39)
	Males	0.57				0.08 (-0.30, 0.47)	0.18 (-0.21, 0.58)
	Females	0.09				-0.07 (-0.35, 0.21)	0.11 (-0.17, 0.40)
PFDA	All	0.80	0.28			0.11 (-0.06, 0.28)	0.09 (-0.08, 0.27)
	Males	0.63				0.18 (-0.08, 0.44)	0.12 (-0.14, 0.38)
	Females	0.74				0.03 (-0.20, 0.26)	0.07 (-0.17, 0.31)
PFNA	All	0.49	0.09			-0.03 (-0.22, 0.17)	0.03 (-0.16, 0.23)
	Males	0.48				0.10 (-0.20, 0.42)	0.20 (-0.10, 0.51)
	Females	0.87				-0.13 (-0.38, 0.13)	-0.11 (-0.36, 0.14)
Age 13 - child serum							
PFOS	All		0.35				0.02 (-0.10, 0.14)
	Males						0.08 (-0.15, 0.31)
	Females						-0.04 (-0.20, 0.13)
PFOA	All		0.47				0.10 (-0.04, 0.24)
	Males						0.19 (-0.06, 0.44)
	Females						0.11 (-0.11, 0.33)
PFHxS	All		0.33				0.03 (-0.08, 0.15)
	Males						0.10 (-0.13, 0.33)

	Females						0.00 (-0.15, 0.15)
PFDA	All		0.27				0.03 (-0.07, 0.12)
	Males						0.09 (-0.07, 0.24)
	Females						-0.02 (-0.16, 0.11)
PFNA	All		0.15				-0.02 (-0.13, 0.10)
	Males						0.05 (-0.14, 0.25)
	Females						-0.09 (-0.24, 0.06)

^a Effect estimates from GEE models (repeated hormone measures) or linear regression models (cross-sectional model at age 13 years).

Effect estimates for maternal-serum PFASs are adjusted for child sex, exact age at examinations, maternal age, parity, prepregnancy BMI, gestational weight gain, maternal fish intake and an interaction term between PFAS*age at hormone assessments. Effect estimates for child-serum PFASs are additionally adjusted for breastfeeding, and child fish intake.

Supplementary Table 6. Adjusted effect estimates ^a for the association of PFAS concentrations (log₂) in maternal or child serum with repeated (concurrent and subsequent) **RESISTIN** concentrations (ln), and p-values for effect modification (EM) by age at hormone assessment and sex.

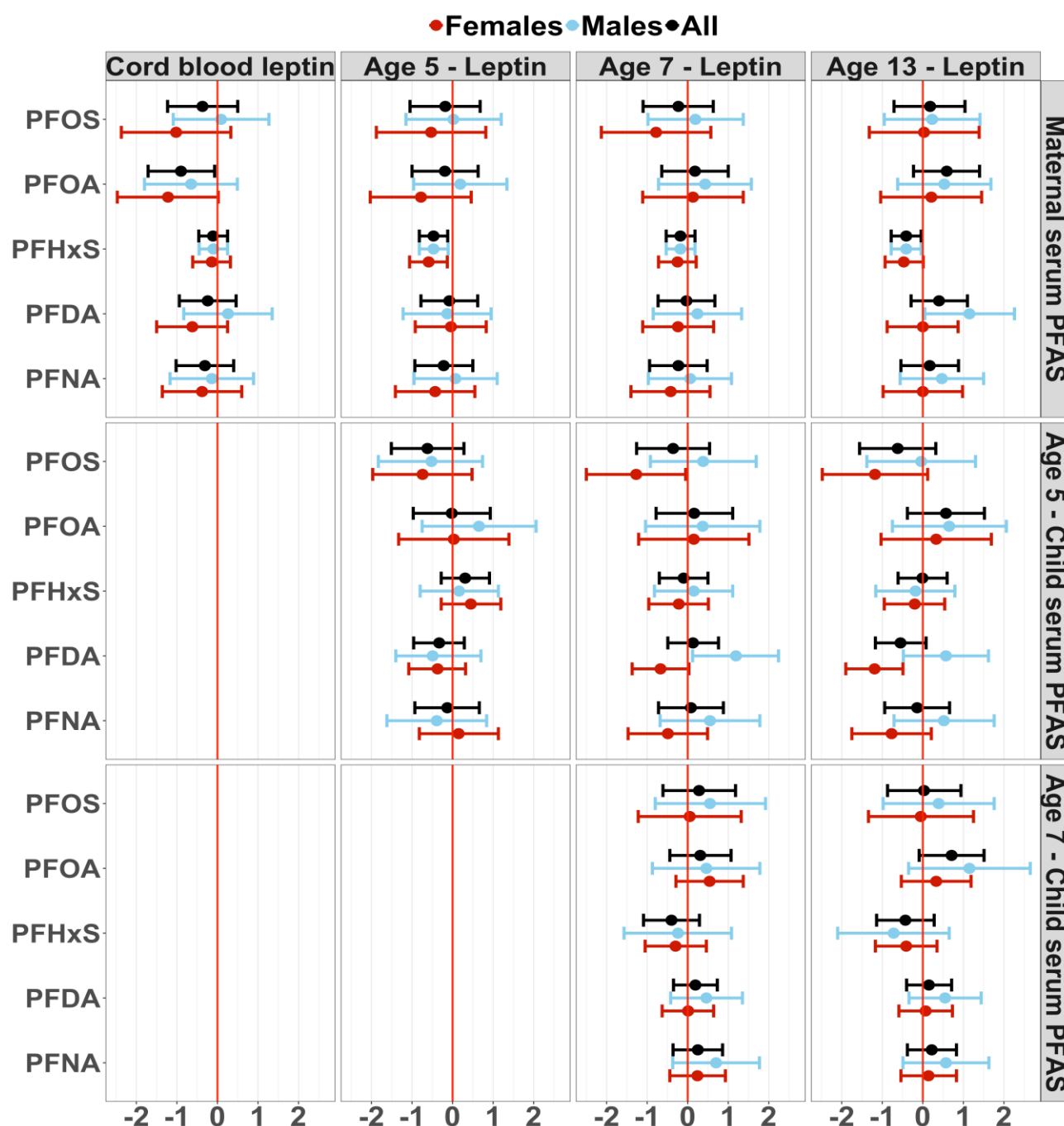
Age/PFAS	Group	p-value for age EM	P- value for sex EM	Cord blood resistin	Age 5 - Resistin	Age 7 - Resistin	Age 13 - Resistin
				β (95% CI)	β (95% CI)	β (95% CI)	β (95% CI)
Maternal serum							
PFOS	All	0.92	0.06	-0.37 (-0.8, 0.05)	-0.45 (-0.87, -0.03)	-0.3 (-0.72, 0.12)	-0.28 (-0.71, 0.15)
	Males	0.15		-0.98 (-1.55, -0.41)	-0.64 (-1.22, -0.07)	-0.19 (-0.76, 0.38)	-0.19 (-0.77, 0.38)
	Females	0.09		0.53 (-0.09, 1.15)	-0.08 (-0.71, 0.54)	-0.41 (-1.04, 0.21)	-0.41 (-1.06, 0.23)
PFOA	All	0.41	0.41	0.00 (-0.41, 0.40)	-0.46 (-0.86, -0.05)	-0.19 (-0.59, 0.21)	-0.20 (-0.60, 0.20)
	Males	0.49		-0.35 (-0.93, 0.23)	-0.53 (-1.11, 0.06)	-0.04 (-0.63, 0.54)	-0.08 (-0.67, 0.50)
	Females	0.51		0.32 (-0.26, 0.91)	-0.26 (-0.84, 0.32)	-0.19 (-0.77, 0.39)	-0.18 (-0.76, 0.40)
PFHxS	All	0.09	0.22	0.16 (-0.01, 0.34)	-0.06 (-0.24, 0.11)	-0.14 (-0.32, 0.03)	-0.06 (-0.25, 0.13)
	Males	0.89		0.01 (-0.27, 0.28)	-0.07 (-0.35, 0.20)	-0.13 (-0.41, 0.15)	-0.04 (-0.38, 0.28)
	Females	0.03		0.30 (0.08, 0.52)	-0.03 (-0.24, 0.19)	-0.13 (-0.35, 0.09)	-0.06 (-0.29, 0.16)
PFDA	All	0.71	0.03	-0.32 (-0.66, 0.03)	-0.05 (-0.40, 0.29)	-0.08 (-0.42, 0.27)	-0.08 (-0.42, 0.27)
	Males	0.11		-0.91 (-1.45, -0.36)	-0.36 (-0.90, 0.18)	0.00 (-0.55, 0.54)	-0.09 (-0.65, 0.47)
	Females	0.51		0.21 (-0.20, 0.62)	0.23 (-0.18, 0.64)	-0.09 (-0.50, 0.31)	-0.03 (-0.44, 0.38)
PFNA	All	0.78	0.09	-0.28 (-0.62, 0.07)	-0.29 (-0.63, 0.06)	-0.09 (-0.44, 0.25)	-0.14 (-0.48, 0.21)
	Males	0.12		-0.82 (-1.32, -0.31)	-0.4 (-0.90, 0.11)	-0.05 (-0.56, 0.45)	-0.08 (-0.58, 0.43)
	Females	0.32		0.37 (-0.08, 0.82)	-0.11 (-0.57, 0.34)	-0.10 (-0.56, 0.35)	-0.16 (-0.62, 0.29)
Age 5 – child serum							
PFOS	All	0.54	0.58		-0.20 (-0.52, 0.13)	-0.41 (-0.74, -0.08)	-0.25 (-0.60, 0.10)
	Males	0.52			-0.28 (-0.71, 0.15)	-0.39 (-0.82, 0.05)	-0.08 (-0.53, 0.36)
	Females	0.36			-0.17 (-0.66, 0.32)	-0.54 (-1.03, -0.04)	-0.64 (-1.18, -0.10)
PFOA	All	0.26	0.97		0.17 (-0.19, 0.52)	-0.11 (-0.47, 0.24)	0.00 (-0.35, 0.36)
	Males	0.60			-0.06 (-0.52, 0.41)	0.04 (-0.42, 0.51)	0.17 (-0.29, 0.64)
	Females	0.02			0.55 (-0.01, 1.10)	-0.28 (-0.83, 0.28)	-0.19 (-0.74, 0.36)

PFHxS	All	0.14	0.22		0.13 (-0.10, 0.35)	-0.09 (-0.31, 0.13)	-0.04 (-0.28, 0.18)
	Males	0.60			-0.11 (-0.43, 0.22)	-0.24 (-0.56, 0.09)	-0.04 (-0.37, 0.28)
	Females	0.08			0.23 (-0.08, 0.54)	-0.05 (-0.36, 0.26)	-0.13 (-0.45, 0.19)
PFDA	All	0.22	0.48		0.03 (-0.20, 0.27)	-0.20 (-0.43, 0.03)	-0.06 (-0.29, 0.18)
	Males	0.77			0.02 (-0.34, 0.39)	-0.10 (-0.46, 0.27)	0.07 (-0.30, 0.43)
	Females	0.20			0.05 (-0.25, 0.35)	-0.28 (-0.58, 0.02)	-0.15 (-0.46, 0.15)
PFNA	All	0.13	0.91		0.04 (-0.26, 0.34)	-0.29 (-0.59, 0.01)	-0.01 (-0.31, 0.28)
	Males	0.20			-0.14 (-0.55, 0.27)	-0.34 (-0.75, 0.07)	0.10 (-0.31, 0.52)
	Females	0.15			0.17 (-0.25, 0.59)	-0.32 (-0.74, 0.10)	-0.21 (-0.63, 0.20)
Age 7 – child serum							
PFOS	All	0.56	0.34			-0.26 (-0.58, 0.06)	-0.15 (-0.48, 0.16)
	Males	0.62				-0.22 (-0.66, 0.23)	-0.08 (-0.53, 0.37)
	Females	0.83				-0.50 (-0.97, -0.02)	-0.45 (-0.93, 0.04)
PFOA	All	0.90	0.09			0.02 (-0.25, 0.30)	0.01 (-0.29, 0.30)
	Males	0.89				0.28 (-0.15, 0.72)	0.33 (-0.16, 0.82)
	Females	0.99				-0.10 (-0.46, 0.27)	-0.10 (-0.47, 0.28)
PFHxS	All	0.97	0.99			-0.12 (-0.37, 0.12)	-0.13 (-0.38, 0.12)
	Males	0.43				-0.26 (-0.69, 0.17)	-0.04 (-0.49, 0.41)
	Females	0.43				-0.17 (-0.49, 0.15)	-0.26 (-0.58, 0.05)
PFDA	All	0.73	0.10			0.01 (-0.18, 0.21)	-0.02 (-0.22, 0.18)
	Males	0.87				0.14 (-0.15, 0.43)	0.17 (-0.12, 0.47)
	Females	0.36				-0.07 (-0.33, 0.20)	-0.19 (-0.46, 0.09)
PFNA	All	0.66	0.59			0.01 (-0.21, 0.24)	-0.04 (-0.26, 0.18)
	Males	0.77				0.12 (-0.24, 0.47)	0.05 (-0.30, 0.40)
	Females	0.73				-0.01 (-0.31, 0.28)	-0.07 (-0.36, 0.23)
Age 13 – child serum							
PFOS	All		0.56				-0.03 (-0.15, 0.10)
	Males						0.02 (-0.17, 0.22)
	Females						-0.05 (-0.24, 0.14)
PFOA	All		0.78				0.03 (-0.11, 0.18)
	Males						0.08 (-0.13, 0.29)
	Females						0.05 (-0.21, 0.31)

PFHxS	All		0.50				-0.01 (-0.13, 0.11)
	Males						0.05 (-0.14, 0.25)
	Females						-0.03 (-0.20, 0.14)
PFDA	All		0.87				-0.02 (-0.12, 0.07)
	Males						-0.02 (-0.16, 0.11)
	Females						-0.01 (-0.17, 0.15)
PFNA	All		0.72				0.04 (-0.07, 0.16)
	Males						0.03 (-0.14, 0.19)
	Females						0.07 (-0.11, 0.25)

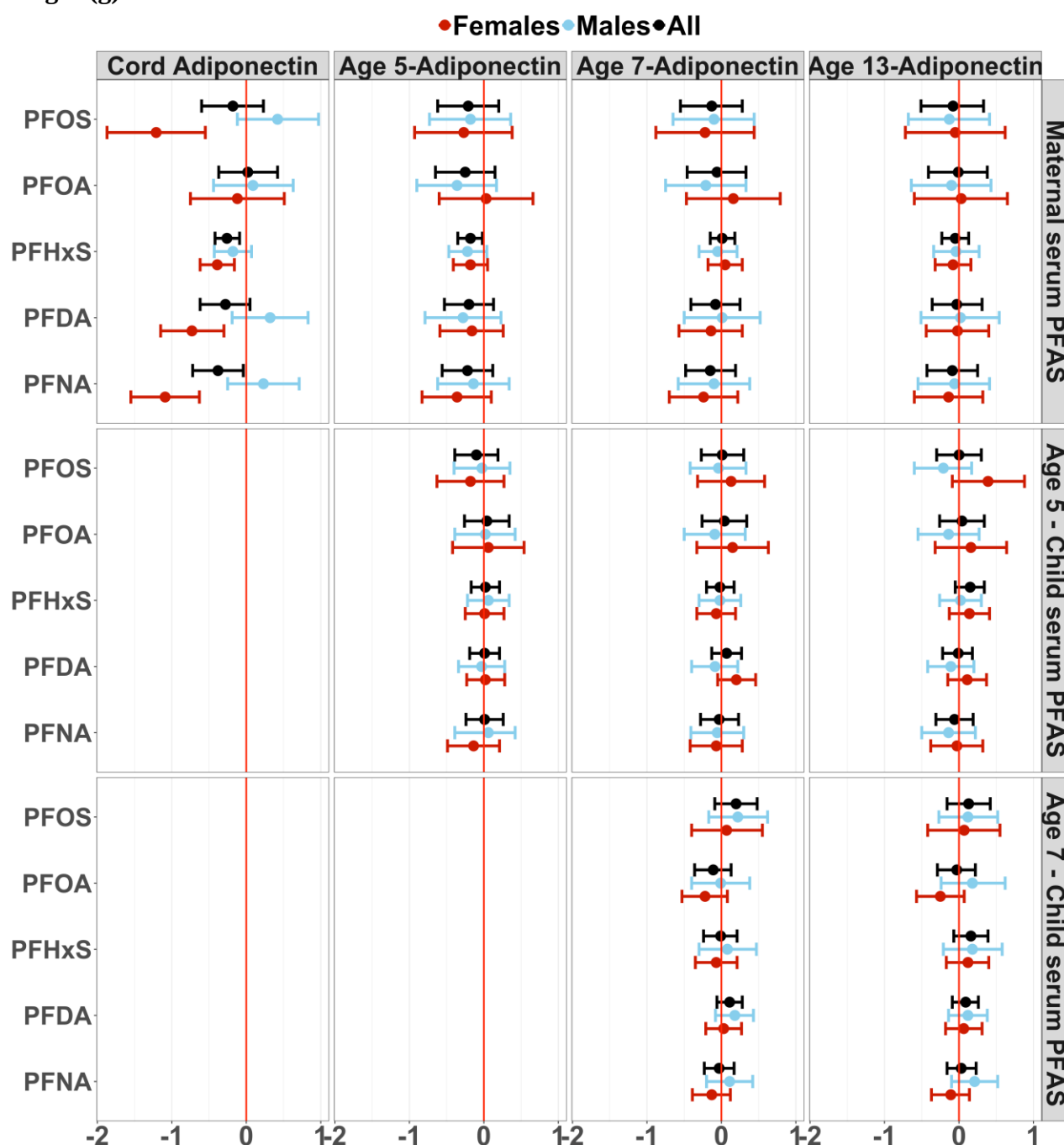
^a Effect estimates from GEE models (repeated hormone measures) or linear regression models (cross-sectional model at age 13 years). Effect estimates for maternal-serum PFASs are adjusted for child sex, exact age at examinations, maternal age, parity, prepregnancy BMI, gestational weight gain, maternal fish intake and an interaction term between PFAS*age at hormone assessments. Effect estimates for child-serum PFASs are additionally adjusted for breastfeeding, and child fish intake.

Supplementary Figure 2. Adjusted GEE effect estimates ^a (β [95% CI]) for the association of PFAS concentrations ($\log_2$) in maternal or child serum with repeated (concurrent and subsequent) LEPTIN concentrations (ln), after inclusion in the models of birth weight (g) OR child BMI z-score at baseline.



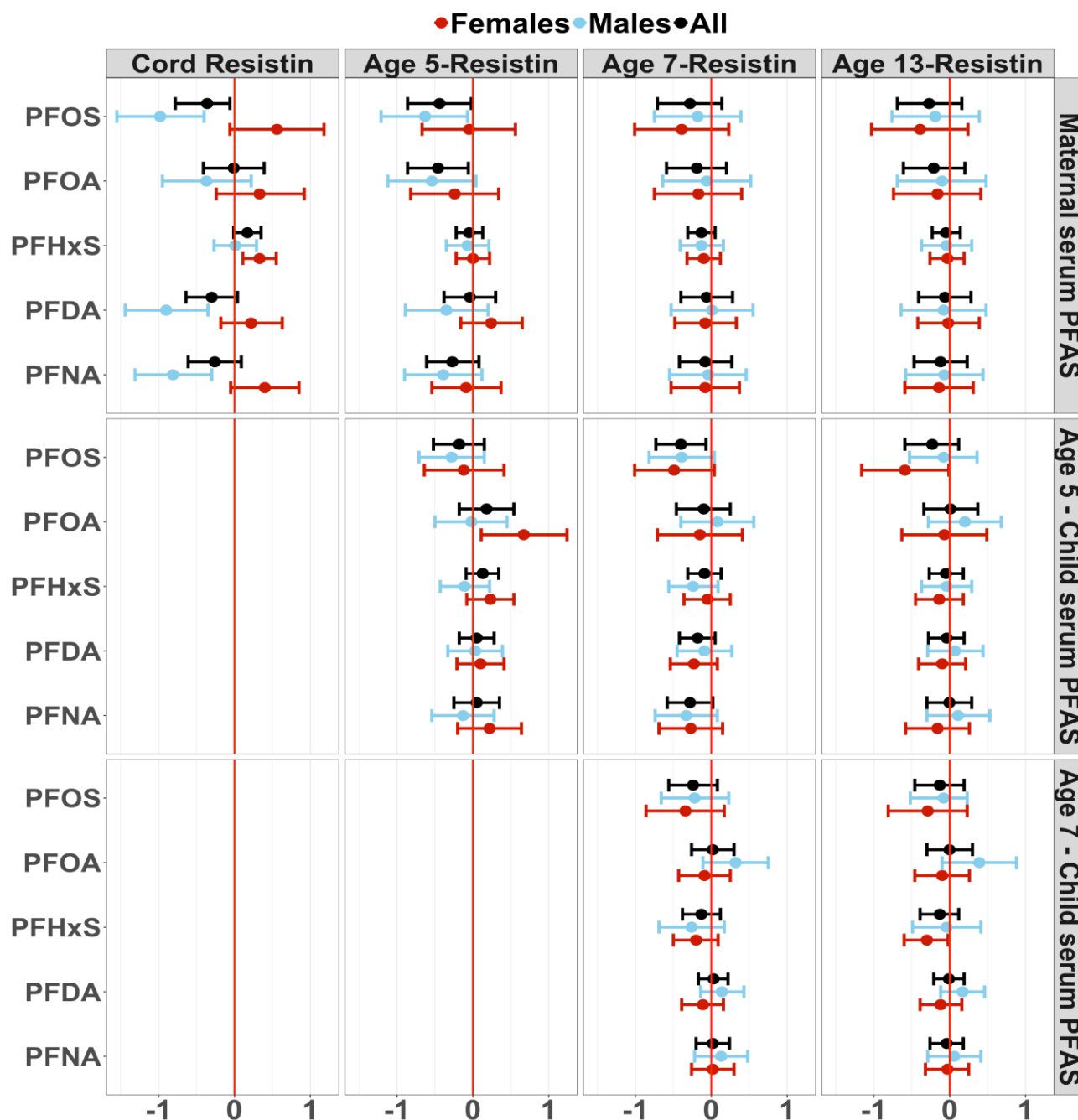
^a Effect estimates for maternal-serum PFASs are adjusted for birth weight (g), child sex, exact age at examinations, maternal age, parity, prepregnancy BMI, gestational weight gain, maternal fish intake during pregnancy and an interaction term between PFAS*age at hormone assessments. Effect estimates for child-serum PFASs are adjusted for child BMI z-score at the age of PFAS assessment, sex, exact age at examinations, maternal age, parity, maternal prepregnancy BMI, gestational weight gain, breastfeeding duration, child fish intake and an interaction term between PFAS*age at hormone assessments.

Supplementary Figure 3. Adjusted GEE effect estimates ^a (β [95% CI]) for the association of PFAS concentrations ($\log_2$) in maternal or child serum with repeated (concurrent and subsequent) ADIPONECTIN concentrations (ln), after inclusion in the models of birth weight (g) OR child BMI z-score at baseline.



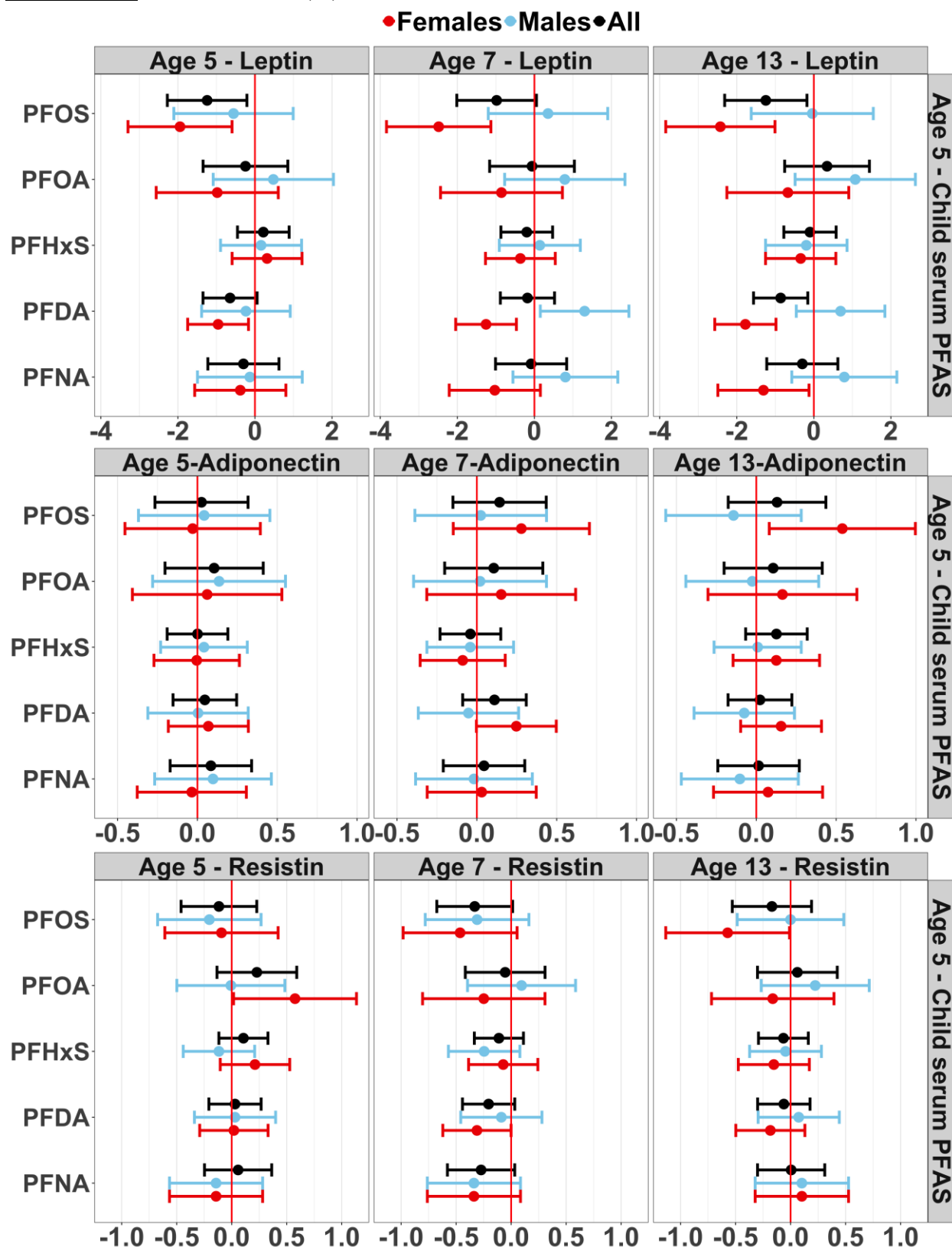
^a Effect estimates for maternal-serum PFASs are adjusted for birth weight (g), child sex, exact age at examinations, maternal age, parity, prepregnancy BMI, gestational weight gain, maternal fish intake during pregnancy and an interaction term between PFAS*age at hormone assessments. Effect estimates for child-serum PFASs are adjusted for child BMI z-score at the age of PFAS assessment, sex, exact age at examinations, maternal age, parity, maternal prepregnancy BMI, gestational weight gain, breastfeeding duration, child fish intake and an interaction term between PFAS*age at hormone assessments.

Supplementary Figure 4. Adjusted GEE effect estimates ^a (β [95% CI]) for the association of PFAS concentrations ($\log_2$) in maternal or child serum with repeated (concurrent and subsequent) RESISTIN concentrations (ln), after inclusion in the models of birth weight (g) OR child BMI z-score at baseline.



^a Effect estimates for maternal-serum PFASs are adjusted for birth weight (g), child sex, exact age at examinations, maternal age, parity, prepregnancy BMI, gestational weight gain, maternal fish intake during pregnancy and an interaction term between PFAS*age at hormone assessments. Effect estimates for child-serum PFASs are adjusted for child BMI z-score at the age of PFAS assessment, sex, exact age at examinations, maternal age, parity, maternal prepregnancy BMI, gestational weight gain, breastfeeding duration, child fish intake and an interaction term between PFAS*age at hormone assessments.

Supplementary Figure 5. Adjusted GEE effect estimates ^a (β [95% CI]) for the association of age-5 serum PFAS concentrations ($\log_2$) with repeated (concurrent and subsequent) HORMONE concentrations (ln), after inclusion in the models of maternal serum PFASs.



^a Effect estimates for child-serum PFASs are adjusted for maternal serum PFAS (same PFAS compound as in child serum), child sex, exact age at examinations, maternal age, parity, maternal prepregnancy BMI, gestational weight gain, breastfeeding duration, child fish intake and an interaction term between PFAS*age at hormone assessments.