

## Supplemental material

### **Associations between prenatal exposure to PFAS and cardiometabolic health in preadolescents**

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Figure S1. Flow chart of the study population

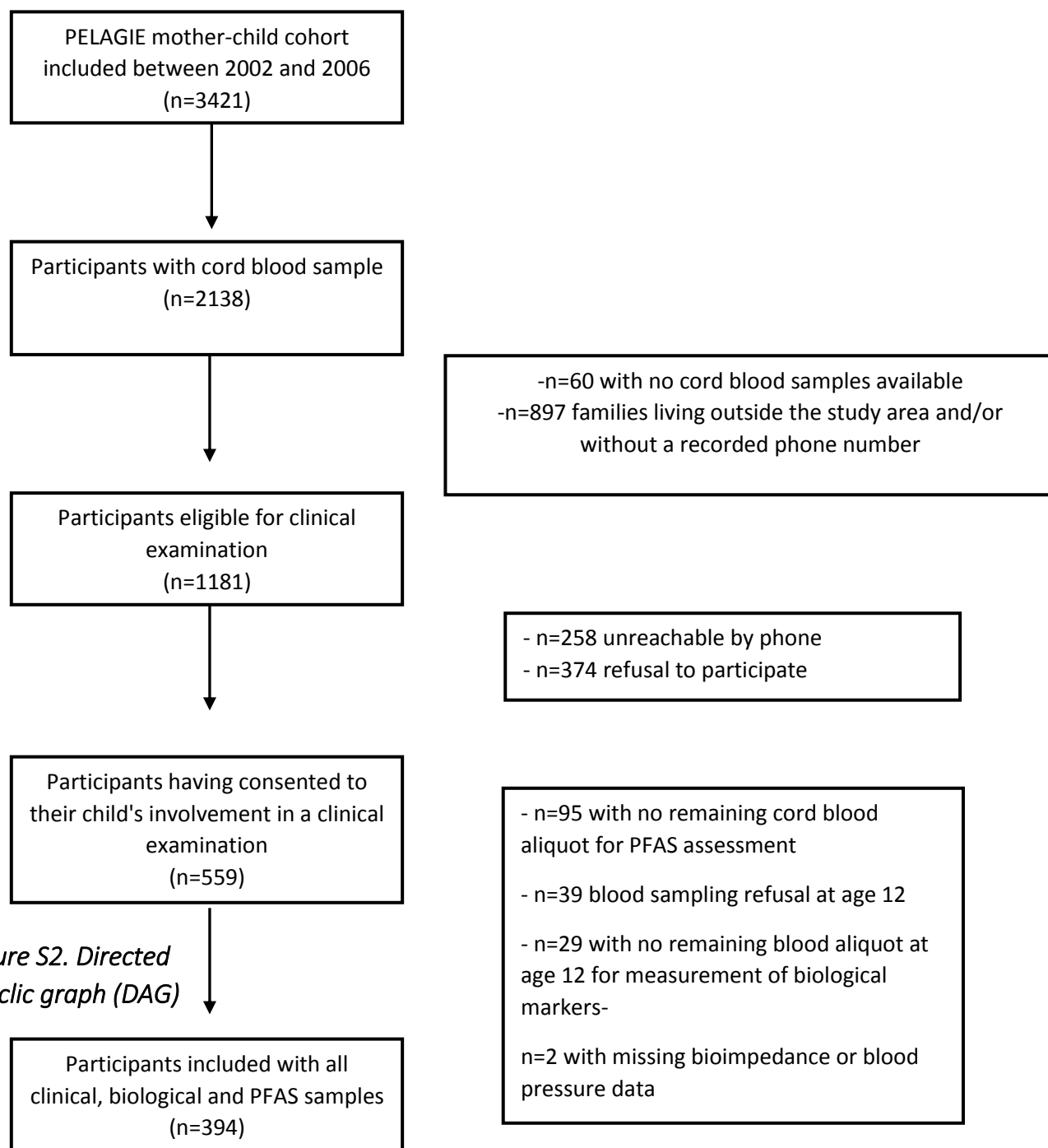
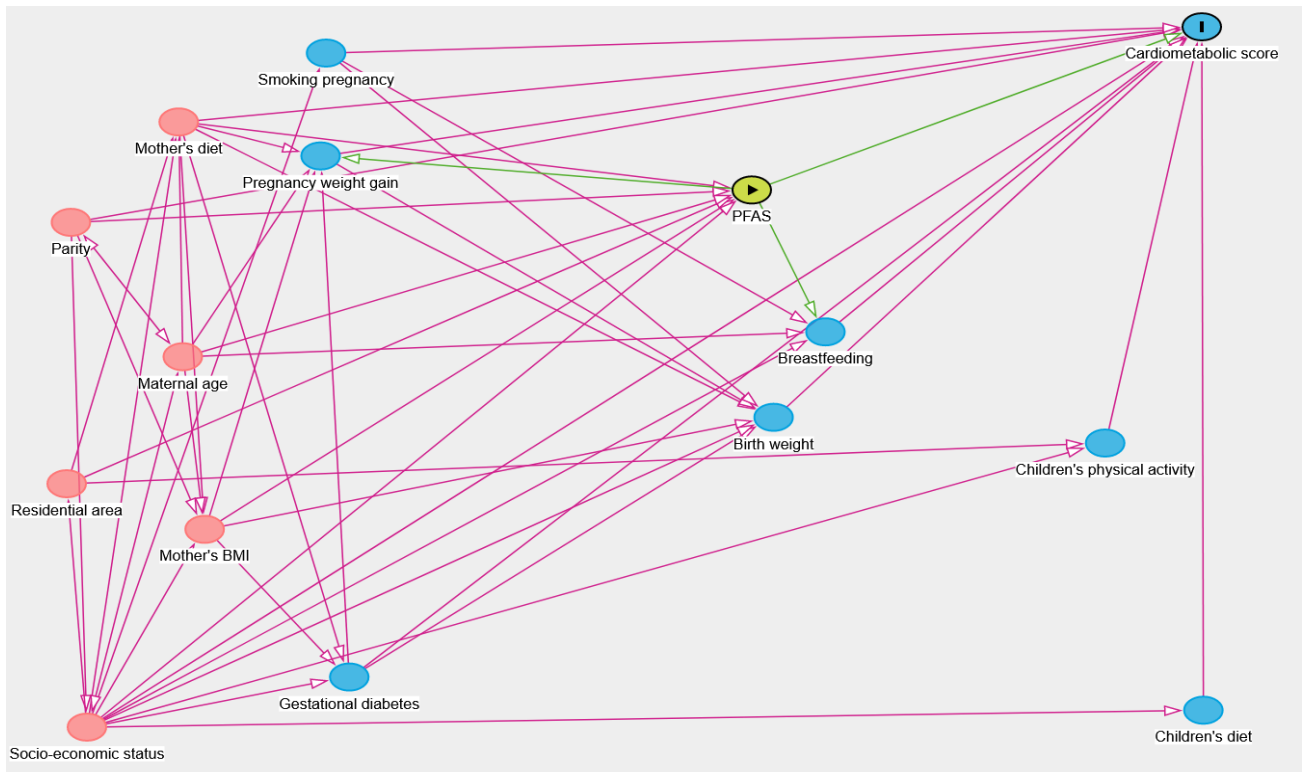


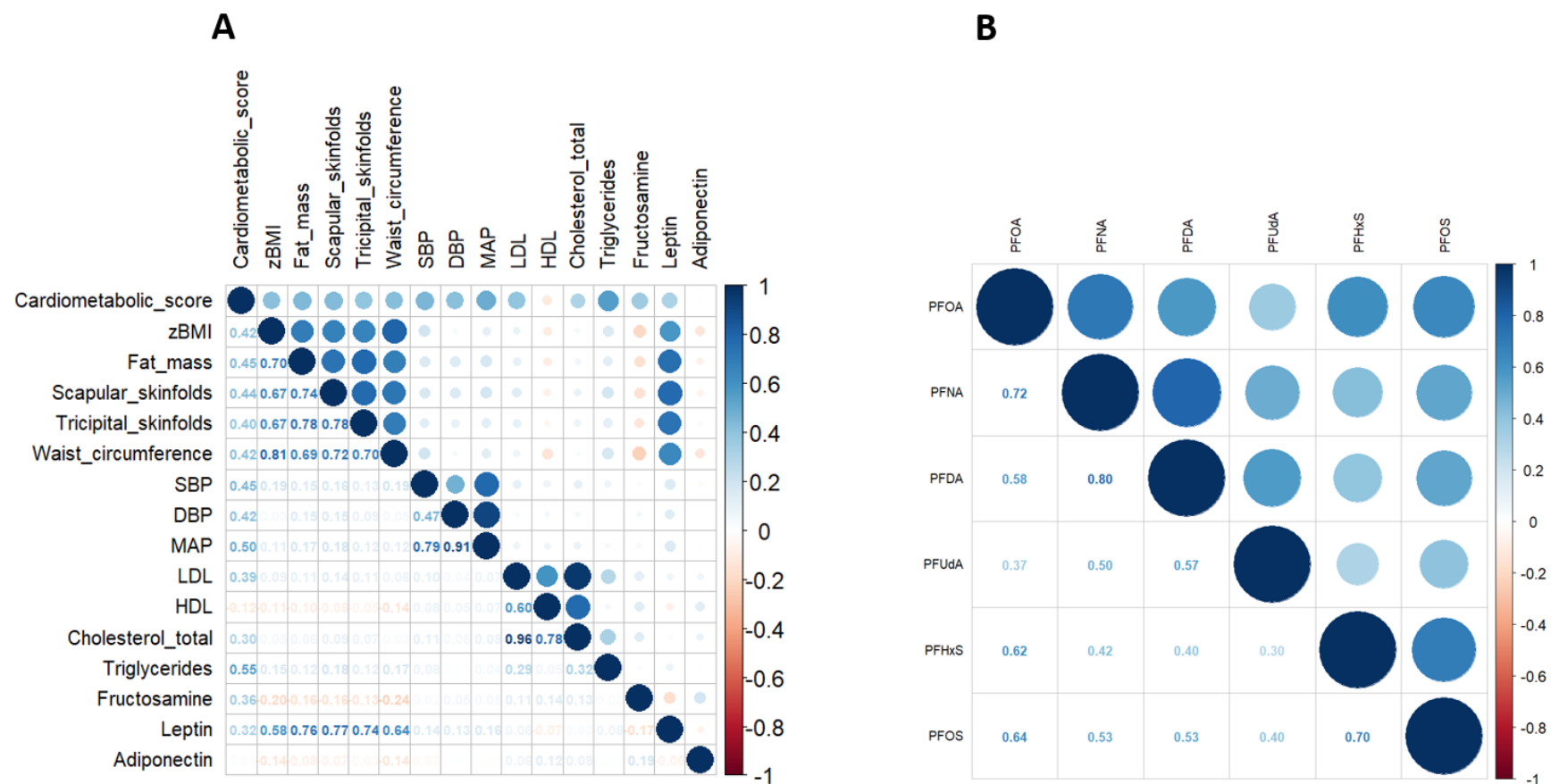
Figure S2. Directed acyclic graph (DAG)



*BMI : Body mass index; PFAS: per- and polyfluoroalkyl substances*

*Cardiometabolic score = z-Proportion of Fat Mass + z-Mean arterial blood pressure + z-Fructosamine + z-Triglycerides + z-Low-density lipoproteins – z-High-density lipoproteins*

Figure S3. Corrplot of Pearson correlations on outcomes and exposures



BMI : Body mass index; DBP : Diastolic blood pressure; HDL : High-density lipoproteins; LDL : Low-density lipoproteins; PFAS : Per- and polyfluoroalkyl substances; PFDA : Perfluorodecanoic acid; PFHxS : Perfluorohexane sulfonate; PFNA : Perfluorononanoic acid; PFOA : Perfluorooctanoic acid; PFOS : Perfluorooctanesulfonic acid; PFUdA : Perfluoroundecanoic acid; MAP : Mean arterial blood pressure; SBP : Systolic blood pressure.

**A** Cardiometabolic indicators; **B** PFAS exposure

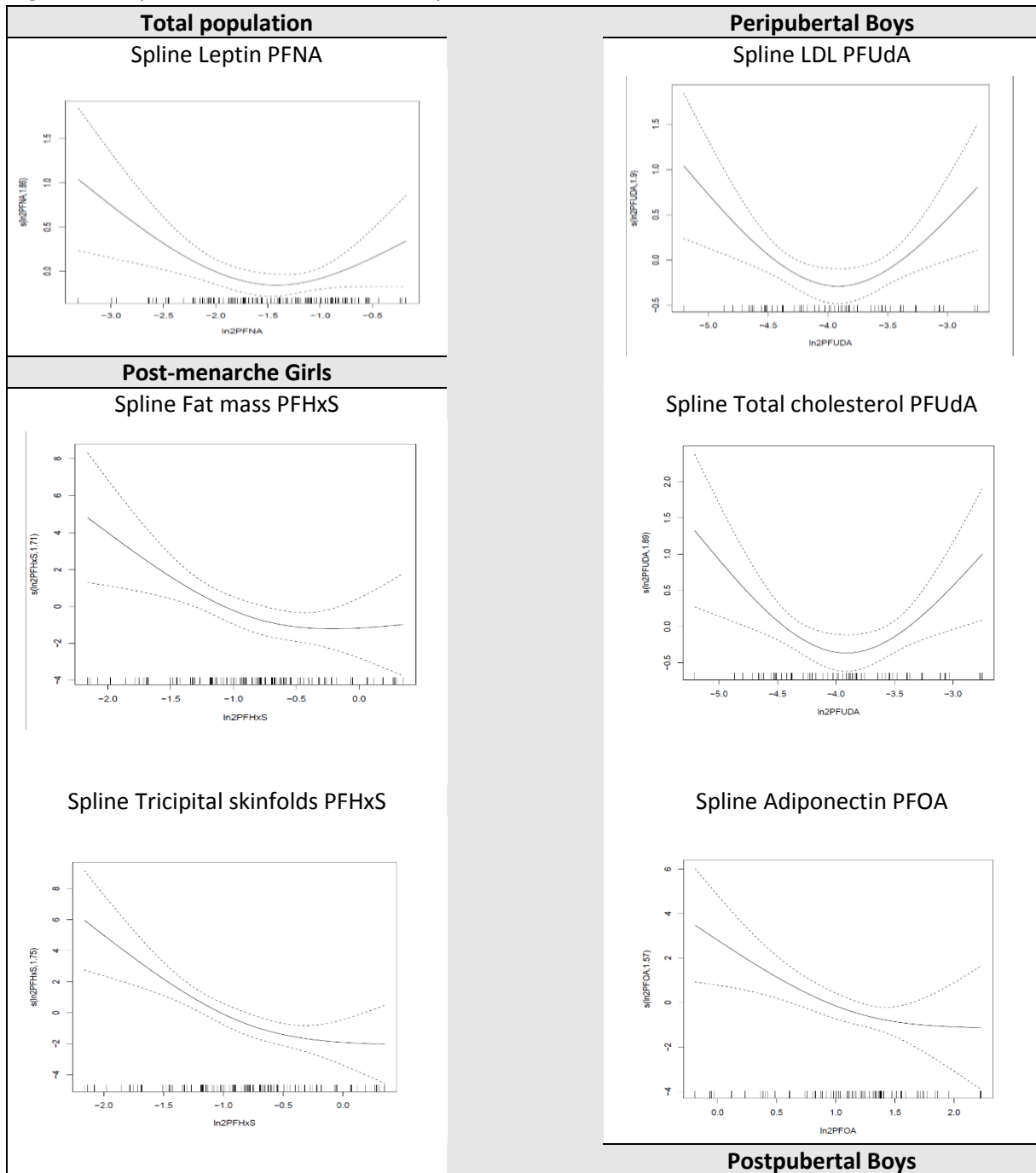
**Table S1. Descriptive table of cardiometabolic indicators for each sub-population stratified by pubertal stage**

Cardiometabolic indicators	PERIPUBERTAL BOYS (N=67)				POSTPUBERTAL BOYS (N=126)				PRE-MENARCHE GIRLS (N=114)				POST-MENARCHE GIRLS (N=87)			
	Mean ± SD / n (%)	Q1	MED	Q3	Mean ± SD / n (%)	Q1	MED	Q3	Mean ± SD / n (%)	Q1	MED	Q3	Mean ± SD / n (%)	Q1	MED	Q3
Cardiometabolic z-score <sup>a</sup>	-0.02 ± 2.6	-1.9	-0.2	1.0	-0.2 ± 2.4	-1.7	-2.3	1.1	-0.1 ± 2.1	-1.6	-0.4	1.2	0.02 ± 2.4	-1.4	-0.02	1.5
Child bmi z-score (who references)	-0.3 ± 1.0	-0.9	-0.5	0.2	-0.2 ± 0.9	-0.7	-0.2	0.4	-0.5 ± 1.1	-1.2	-0.6	0.1	0.2 ± 0.8	-0.3	0.3	0.7
Waist circumference (cm)	66.6 ± 8.1	61.4	64.1	69.2	67.2 ± 6.8	63.7	66.0	70.0	66.6 ± 7.9	61.3	64.5	70.4	70.0 ± 6.6	66.0	69.6	73.9
Percentage of fat mass	14.7 ± 5.6	10.9	13.3	17.0	12.7 ± 4.2	10.0	11.9	14.4	19.4 ± 6.7	14.9	18.4	23.2	23.8 ± 5.0	20.3	23.5	27.0
Tricipital skin fold (mm)	12.2 ± 5.7	8.3	11.1	14.8	10.8 ± 4.2	7.7	10.1	12.7	13.4 ± 4.9	10.3	12.5	15.0	15.1 ± 4.6	12.0	14.3	17.6
Scapular skin fold (mm)	7.8 ± 4.4	5.3	6.4	8.4	6.9 ± 2.5	5.5	6.3	7.4	8.1 ± 3.7	6.2	7.0	9.3	10.3 ± 3.8	8.1	9.3	11.2
Mean arterial blood pressure (mmhg)	81.8 ± 5.9	77.5	80.7	85.8	80.9 ± 6.4	76.0	80.6	85.0	81.5 ± 6.7	75.9	81.7	86.2	83.9 ± 6.6	79.8	83.0	87.2
Systolic blood pressure (mmhg)	114.5 ± 8.3	108.0	113.0	119.0	116.0 ± 9.1	110.0	115.5	122.0	115.0 ± 9.1	109.1	114.0	120.5	117 ± 9.4	111.2	116.5	122.0
Diastolic blood pressure (mmhg)	65.4 ± 6.1	61.5	65.0	69.0	63.3 ± 7	57.1	63.0	68.4	64.5 ± 7.8	58.6	64.5	70.0	67.4 ± 6.7	63.8	67.0	70.8
Total cholesterol	2.9 ± 1	2.4	2.9	3.4	2.6 ± 0.9	2.2	2.6	3.0	2.6 ± 1.0	2.1	2.5	3.2	2.7 ± 1.0	2.1	2.6	3.3
Low-density lipoproteins (LDL, mmol/L)	1.9 ± 0.8	1.4	1.8	2.3	1.6 ± 0.7	1.3	1.6	1.9	1.7 ± 0.7	1.2	1.5	2.1	1.7 ± 0.7	1.2	1.6	2.1
High-density lipoproteins (HDL, mmol/L)	0.9 ± 0.3	0.7	0.9	1.1	0.84 ± 0.3	0.66	0.8	1.0	0.8 ± 0.3	0.6	0.8	1.0	0.9 ± 0.3	0.7	0.8	1.0
Triglycerides (mmol/L)	0.8 ± 0.3	0.5	0.7	1.1	0.8 ± 0.4	0.5	0.7	1.0	0.8 ± 0.4	0.5	0.7	0.9	0.7 ± 0.3	0.5	0.7	0.8
Fructosamine (µmol/L)	251.5 ± 14.5	240.9	252.3	261.1	242 ± 15.5	231.0	242.0	253.5	240.6 ± 15.9	229.8	238	249.1	243.2 ± 15.9	230.9	242.6	251.3
Adiponectin (µg/mL)	8.5 ± 3.4	5.6	8.1	10.6	7.2 ± 2.8	5.2	6.8	8.8	7.6 ± 2.4	5.9	7.4	8.8	7.1 ± 2.0	5.6	6.9	8.4
Leptin (µg/mL)	4.7 ± 7.6	1.1	2.2	5.0	2.6 ± 2.7	1.1	1.8	3.4	7.6 ± 8.5	3.1	4.8	8.5	11.4 ± 9.0	5.9	7.9	14.6

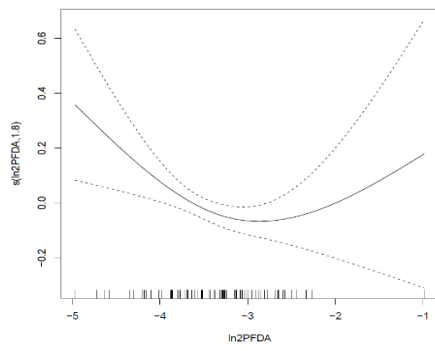
BMI : Body mass index; MED : Median; Q1 : First quartile 1; Q3 : Third quartile; SD : Standard deviation; WHO : World Health Organization.

<sup>a</sup> Cardiometabolic score = z-Proportion of Fat Mass + z-Mean arterial blood pressure + z-Fructosamine + z-Triglycerides + z-Low-density lipoproteins – z-High-density lipoproteins

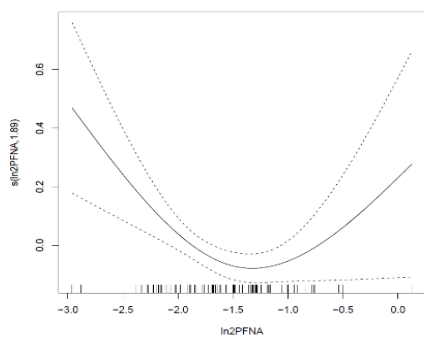
Figure S4. Spline Model EDF>1.5 and p-value <0.05



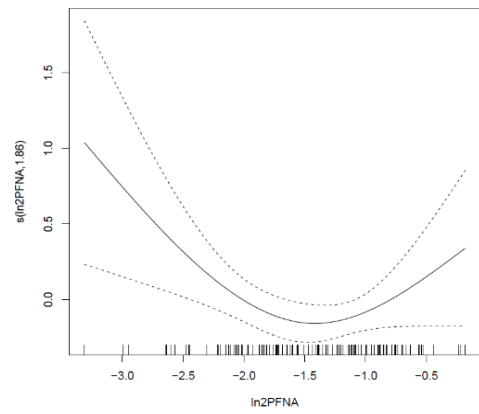
Spline HDL PFDA



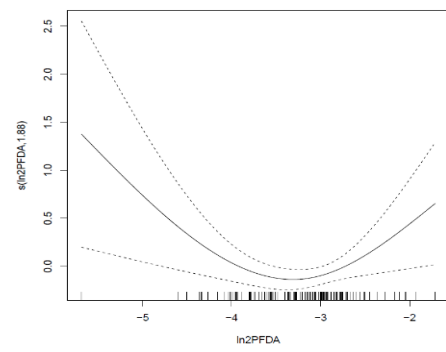
Spline HDL PFNA



Spline Leptin PFNA



Spline Leptin PFDA



*HDL : High-density lipoproteins; LDL : Low-density lipoproteins; PFDA : Perfluorodecanoic acid; PFHxS : Perfluorohexane sulfonate; PFNA : Perfluorononanoic acid; PFOA : Perfluorooctanoic acid; PFOS : Perfluorooctanesulfonic acid; PFUdA : Perfluoroundecanoic acid.*

Table S2. Linear Regression Results of cardiometabolic score and each PFAS for each sub-population stratified by sex and pubertal stage

PFAS	Total population	All Boys	Peripubertal Boys	Postpubertal Boys	All girls	Pre-menarche Girls	Post-menarche Girls
		beta [95 % CI]	beta [95 % CI]	beta [95 % CI]	beta [95 % CI]	beta [95 % CI]	beta [95 % CI]
PFOA	0.01 (-0.39, 0.42)	-0.12 (-0.72, 0.49)	-0.10 (-1.32, 1.12)	-0.17 (-0.88, 0.55)	0.02 (-0.55, 0.60)	0.08 (-0.57, 0.73)	-0.22 (-1.36, 0.92)
PFNA	0.06 (-0.31, 0.43)	-0.06 (-0.63, 0.50)	-0.03 (-1.06, 1.00)	-0.09 (-0.77, 0.59)	0.04 (-0.47, 0.56)	0.19 (-0.37, 0.75)	-0.43 (-1.54, 0.66)
PFDA	-0.07 (-0.47, 0.32)	-0.14 (-0.75, 0.48)	-0.33 (-1.62, 0.95)	-0.13 (-0.85, 0.58)	-0.06 (-0.58, 0.47)	0.08 (-0.55, 0.71)	-0.78 (-1.73, 0.18)
PFUdA	0.14 (-0.24, 0.52)	-0.07 (-0.63, 0.48)	0.27 (-0.87, 1.40)	-0.17 (-0.80, 0.47)	0.33 (-0.21, 0.88)	0.41 (-0.32, 1.14)	0.19 (-0.69, 1.07)
PFHxS	0.07 (-0.30, 0.44)	0.24 (-0.31, 0.78)	1.06 (-0.17, 2.28)	0.01 (-0.60, 0.63)	-0.05 (-0.56, 0.47)	-0.16 (-0.77, 0.46)	-0.33 (-1.28, 0.61)
PFOS	0.27 (-0.11, 0.65)	0.29 (-0.26, 0.85)	0.90 (-0.26, 2.05)	0.17 (-0.47, 0.82)	0.25 (-0.30, 0.79)	0.01 (-0.69, 0.70)	0.24 (-0.72, 1.21)

PFAS : Per- and polyfluoroalkyl substances; PFDA : Perfluorodecanoic acid; PFHxS : Perfluorohexane sulfonate; PFNA : Perfluorononanoic acid; PFOA : Perfluorooctanoic acid; PFOS : Perfluorooctanesulfonic acid; PFUdA : Perfluoroundecanoic acid.

Table S3. Linear Regression Results of cardiometabolic indicators and each PFAS for each sub-population stratified by sex and pubertal stage

PFAS	Total Population	All Boys	Peripubertal Boys	Postpubertal Boys	All Girls	Pre-menarche Girls	Post-menarche Girls
	beta [95 % CI]	beta [95 % CI]	beta [95 % CI]	beta [95 % CI]	beta [95 % CI]	beta [95 % CI]	beta [95 % CI]
				<b>Cardiometabolic score</b>			
PFOA	0.01 (-0.39, 0.42)	-0.12 (-0.72, 0.49)	-0.10 (-1.32, 1.12)	-0.17 (-0.88, 0.55)	0.03 (-0.55, 0.60)	0.08 (-0.57, 0.73)	-0.22 (-1.36, 0.92)
PFNA	0.06 (-0.31, 0.43)	-0.06 (-0.63, 0.50)	-0.03 (-1.06, 1.00)	-0.09 (-0.77, 0.59)	0.04 (-0.47, 0.56)	0.19 (-0.37, 0.75)	-0.44 (-1.54, 0.66)
PFDA	-0.07 (-0.47, 0.32)	-0.14 (-0.75, 0.48)	-0.33 (-1.62, 0.95)	-0.14 (-0.85, 0.58)	-0.06 (-0.58, 0.47)	0.08 (-0.55, 0.71)	-0.76 (-1.73, 0.18)
PFUdA	0.14 (-0.24, 0.52)	-0.07 (-0.63, 0.48)	0.27 (-0.87, 1.4)	-0.17 (-0.80, 0.47)	0.33 (-0.21, 0.88)	0.41 (-0.32, 1.14)	0.19 (-0.69, 1.07)
PFHxS	0.07 (-0.30, 0.44)	0.24 (-0.31, 0.78)	1.06 (-0.17, 2.28)	0.01 (-0.60, 0.63)	-0.05 (-0.56, 0.47)	-0.16 (-0.77, 0.46)	-0.34 (-1.28, 0.61)
PFOS	0.27 (-0.11, 0.65)	0.29 (-0.26, 0.85)	0.90 (-0.26, 2.05)	0.17 (-0.47, 0.82)	0.25 (-0.30, 0.79)	0.01 (-0.69, 0.70)	0.24 (-0.72, 1.21)
				<b>z-BMI</b>			



<b>PFOA</b>	0.07 (-0.09, 0.24)	0.05 (-0.18, 0.29)	0.06 (-0.42, 0.55)	0.07 (-0.21, 0.35)	0.09 (-0.14, 0.33)	0.25 (-0.06, 0.55)	-0.17 (-0.54, 0.20)
<b>PFNA</b>	0.07 (-0.08, 0.22)	-0.04 (-0.26, 0.18)	-0.12 (-0.53, 0.29)	0.04 (-0.23, 0.30)	0.16 (-0.05, 0.36)	0.25 (0.00, 0.51)	-0.03 (-0.39, 0.33)
<b>PFDA</b>	0.07 (-0.08, 0.23)	0.00 (-0.23, 0.24)	-0.16 (-0.66, 0.35)	0.08 (-0.20, 0.35)	0.13 (-0.08, 0.34)	0.23 (-0.05, 0.52)	-0.18 (-0.50, 0.13)
<b>PFUDA</b>	0.13 (-0.03, 0.28)	0.21 (-0.01, 0.43)	0.23 (-0.25, 0.71)	0.17 (-0.08, 0.42)	0.02 (-0.20, 0.24)	0.11 (-0.24, 0.45)	-0.04 (-0.32, 0.25)
<b>PFHxS</b>	-0.06 (-0.21, 0.09)	-0.01 (-0.22, 0.20)	0.24 (-0.26, 0.73)	-0.04 (-0.28, 0.20)	-0.11 (-0.32, 0.10)	-0.03 (-0.32, 0.27)	-0.37 (-0.66, -0.07)
<b>PFOS</b>	-0.01 (-0.16, 0.15)	0.03 (-0.19, 0.24)	0.06 (-0.41, 0.53)	0.05 (-0.20, 0.30)	-0.07 (-0.29, 0.16)	-0.09 (-0.42, 0.24)	-0.15 (-0.46, 0.16)
				<b>Fat mass</b>			
<b>PFOA</b>	0.46 (-0.49, 1.42)	0.48 (-0.68, 1.64)	-0.14 (-2.75, 2.48)	0.80 (-0.41, 2.02)	0.42 (-1.05, 1.89)	0.83 (-1.14, 2.80)	-0.46 (-2.66, 1.74)
<b>PFNA</b>	0.47 (-0.39, 1.33)	0.30 (-0.79, 1.38)	0.00 (-2.21, 2.21)	0.61 (-0.55, 1.77)	0.52 (-0.75, 1.79)	0.84 (-0.81, 2.50)	-0.35 (-2.47, 1.77)
<b>PFDA</b>	0.48 (-0.44, 1.39)	0.71 (-0.48, 1.9)	0.67 (-2.07, 3.42)	0.70 (-0.55, 1.95)	0.33 (-0.97, 1.63)	0.77 (-1.07, 2.62)	-1.35 (-3.21, 0.51)
<b>PFUDA</b>	0.41 (-0.48, 1.31)	0.56 (-0.51, 1.64)	0.80 (-1.74, 3.34)	0.13 (-0.99, 1.26)	-0.00 (-1.38, 1.37)	0.31 (-1.91, 2.53)	-0.44 (-2.11, 1.24)
<b>PFHxS</b>	-0.07 (-0.93, 0.80)	0.23 (-0.82, 1.28)	0.56 (-2.14, 3.27)	0.27 (-0.78, 1.33)	-0.49 (-1.79, 0.82)	-0.09 (-1.96, 1.79)	-2.05 (-3.82, -0.29)
<b>PFOS</b>	0.29 (-0.61, 1.18)	0.44 (-0.62, 1.51)	1.02 (-1.50, 3.54)	0.56 (-0.55, 1.66)	-0.26 (-1.65, 1.13)	-0.78 (-2.87, 1.31)	-0.47 (-2.33, 1.38)
				<b>Subscapular skinfold (mm)</b>			
<b>PFOA</b>	0.49 (-0.13, 1.12)	0.38 (-0.42, 1.18)	0.20 (-1.81, 2.20)	0.36 (-0.38, 1.10)	0.56 (-0.40, 1.52)	1.29 (0.16, 2.42)	-1.02 (-2.78, 0.74)
<b>PFNA</b>	0.14 (-0.40, 0.67)	-0.19 (-0.94, 0.56)	-1.18 (-2.85, 0.48)	0.25 (-0.46, 0.97)	0.20 (-0.55, 0.94)	0.63 (-0.13, 1.39)	-1.02 (-2.73, 0.70)
<b>PFDA</b>	-0.04 (-0.61, 0.53)	0.01 (-0.82, 0.83)	-1.52 (-3.55, 0.51)	0.18 (-0.59, 0.96)	-0.15 (-0.91, 0.62)	0.65 (-0.21, 1.51)	-1.86 (-3.30, -0.35)
<b>PFUDA</b>	0.27 (-0.32, 0.85)	0.52 (-0.18, 1.22)	0.72 (-1.08, 2.51)	0.26 (-0.42, 0.94)	-0.06 (-0.99, 0.88)	0.40 (-0.94, 1.74)	-0.62 (-1.98, 0.73)
<b>PFHxS</b>	0.00 (-0.57, 0.57)	0.33 (-0.40, 1.06)	1.18 (-0.87, 3.23)	-0.07 (-0.72, 0.59)	-0.31 (-1.17, 0.54)	0.16 (-0.94, 1.26)	-1.48 (-2.91, -0.05)
<b>PFOS</b>	0.28 (-0.31, 0.86)	0.37 (-0.36, 1.11)	1.00 (-0.92, 2.92)	0.12 (-0.56, 0.79)	0.13 (-0.78, 1.04)	0.37 (-0.86, 1.60)	-0.50 (-1.99, 1.00)
				<b>Triceps skinfold (mm)</b>			
<b>PFOA</b>	0.41 (-0.43, 1.24)	0.47 (-0.72, 1.65)	0.76 (-2.06, 3.57)	0.55 (-0.68, 1.78)	0.20 (-1.00, 1.41)	1.09 (-0.42, 2.60)	-1.46 (-3.52, 0.60)
<b>PFNA</b>	0.16 (-0.58, 0.90)	-0.04 (-1.15, 1.07)	-0.39 (-2.77, 1.99)	0.32 (-0.86, 1.50)	0.13 (-0.89, 1.14)	0.64 (-0.58, 1.87)	-1.04 (-3.05, 0.96)
<b>PFDA</b>	-0.11 (-0.90, 0.68)	0.27 (-0.94, 1.47)	-0.09 (-3.06, 2.88)	0.31 (-0.92, 1.54)	-0.46 (-1.49, 0.57)	0.34 (-1.03, 1.70)	-2.05 (-3.78, -0.33)
<b>PFUDA</b>	0.33 (-0.45, 1.11)	0.44 (-0.66, 1.54)	1.21 (-1.56, 3.97)	-0.09 (-1.22, 1.04)	0.08 (-1.05, 1.22)	0.68 (-1.01, 2.36)	-0.26 (-1.86, 1.33)
<b>PFHxS</b>	-0.12 (-0.87, 0.64)	0.51 (-0.56, 1.58)	1.75 (-1.12, 4.63)	0.27 (-0.79, 1.34)	-0.84 (-1.91, 0.22)	0.24 (-1.21, 1.69)	-2.92 (-4.52, -1.33)
<b>PFOS</b>	0.16 (-0.62, 0.95)	0.47 (-0.62, 1.55)	1.73 (-0.96, 4.41)	0.21 (-0.91, 1.33)	-0.41 (-1.55, 0.72)	-0.11 (-1.73, 1.51)	-1.01 (-2.75, 0.74)
				<b>Waist circumference (cm)</b>			
<b>PFOA</b>	0.35 (-0.88, 1.58)	0.33 (-1.44, 2.09)	-0.34 (-4.25, 3.57)	0.71 (-1.27, 2.69)	0.34 (-1.46, 2.14)	0.61 (-1.72, 2.94)	0.10 (-2.86, 3.06)
<b>PFNA</b>	0.06 (-1.04, 1.17)	-0.36 (-2.01, 1.28)	-2.13 (-5.38, 1.12)	0.70 (-1.20, 2.59)	0.33 (-1.22, 1.89)	0.53 (-1.41, 2.47)	0.10 (-2.77, 2.97)
<b>PFDA</b>	0.13 (-1.04, 1.31)	-0.28 (-2.04, 1.58)	-0.97 (-5.07, 3.12)	0.13 (-1.90, 2.15)	0.50 (-1.08, 2.07)	1.11 (-1.05, 3.27)	-1.40 (-3.92, 1.12)
<b>PFUDA</b>	0.25 (-0.87, 1.37)	0.69 (-0.95, 2.32)	0.06 (-3.69, 3.81)	0.56 (-1.25, 2.38)	-0.39 (-1.99, 1.22)	-0.62 (-3.01, 1.77)	-0.13 (-2.39, 2.13)
<b>PFHxS</b>	-0.69 (-1.80, 0.43)	0.12 (-1.48, 1.71)	1.96 (-2.05, 5.97)	-0.20 (-1.91, 1.52)	-1.41 (-3.00, 0.18)	-0.79 (-3.00, 1.42)	-3.23 (-5.57, -0.89)

<b>PFOS</b>	-0.50 (-1.65, 0.65)	-0.03 (-1.64, 1.59)	0.82 (-2.95, 4.60)	-0.01 (-1.81, 1.79)	-1.16 (-2.85, 0.54)	-2.22 (-4.66, 0.22)	-0.51 (-3.00, 1.98)
				<b>SBP (mmhg)</b>			
<b>PFOA</b>	1.18 (-0.41, 2.76)	0.75 (-1.51, 3.00)	1.18 (-2.84, 5.20)	0.36 (-2.48, 3.19)	0.93 (-1.42, 3.28)	-0.21 (-3.15, 2.72)	3.82 (-0.41, 8.05)
<b>PFNA</b>	0.60 (-0.81, 2.01)	0.84 (-1.21, 2.88)	0.89 (-2.51, 4.29)	0.59 (-2.04, 3.22)	0.09 (-1.98, 2.15)	-0.15 (-2.68, 2.39)	0.92 (-3.15, 4.99)
<b>PFDA</b>	-0.56 (-2.07, 0.95)	-0.74 (-3.03, 1.55)	-1.75 (-5.96, 2.47)	-0.71 (-3.56, 2.14)	-0.71 (-2.78, 1.36)	-0.74 (-3.46, 1.98)	-1.26 (-4.89, 2.38)
<b>PFUDA</b>	0.54 (-0.97, 2.05)	-0.45 (-2.53, 1.63)	2.00 (-1.86, 5.85)	-1.18 (-3.74, 1.37)	1.34 (-0.92, 3.59)	0.07 (-3.32, 3.45)	3.01 (-0.21, 6.22)
<b>PFHxS</b>	0.87 (-0.56, 2.31)	1.81 (-0.22, 3.83)	2.36 (-1.76, 6.48)	1.52 (-0.92, 3.95)	-0.02 (-2.11, 2.08)	-0.69 (-3.47, 2.09)	1.03 (-2.54, 4.60)
<b>PFOS</b>	1.64 (0.16, 3.12)	1.71 (-0.34, 3.75)	1.00 (-2.89, 4.89)	2.01 (-0.54, 4.56)	1.42 (-0.79, 3.64)	-0.08 (-3.19, 3.03)	3.71 (0.17, 7.25)
				<b>DBP (mmhg)</b>			
<b>PFOA</b>	-0.80 (-2.00, 0.39)	-0.80 (-2.51, 0.91)	-0.62 (-3.51, 2.26)	-1.31 (-3.45, 0.84)	-1.19 (-2.91, 0.53)	-1.57 (-3.60, 0.47)	-0.25 (-3.36, 2.85)
<b>PFNA</b>	-0.53 (-1.60, 0.55)	-0.52 (-2.1, 1.07)	-0.20 (-2.64, 2.24)	-0.82 (-2.87, 1.22)	-0.93 (-2.45, 0.59)	-0.91 (-2.68, 0.85)	-1.26 (-4.17, 1.62)
<b>PFDA</b>	-0.63 (-1.76, 0.50)	-0.71 (-2.42, 0.99)	-0.26 (-3.26, 2.74)	-1.13 (-3.25, 0.99)	-0.78 (-2.31, 0.76)	-0.94 (-2.84, 0.97)	-1.28 (-3.92, 1.35)
<b>PFUDA</b>	-0.42 (-1.54, 0.71)	-1.14 (-2.71, 0.43)	0.70 (-2.09, 3.49)	-1.62 (-3.51, 0.28)	0.07 (-1.57, 1.71)	-0.96 (-3.29, 1.36)	1.01 (-1.27, 3.29)
<b>PFHxS</b>	-0.20 (-1.28, 0.88)	-0.76 (-2.30, 0.79)	-1.59 (-4.55, 1.36)	-0.70 (-2.56, 1.16)	0.13 (-1.4, 1.67)	-0.41 (-2.36, 1.55)	1.11 (-1.45, 3.67)
<b>PFOS</b>	0.33 (-0.79, 1.45)	-0.30 (-1.86, 1.27)	-0.25 (-3.05, 2.54)	-0.43 (-2.38, 1.53)	0.61 (-1.02, 2.24)	0.06 (-2.13, 2.24)	1.66 (-0.93, 4.24)
				<b>MAP (mmhg)</b>			
<b>PFOA</b>	-0.14 (-1.29, 1.00)	-0.29 (-1.88, 1.31)	-0.02 (-2.75, 2.71)	-0.75 (-2.75, 1.24)	-0.48 (-2.18, 1.22)	-1.12 (-3.18, 0.95)	1.11 (-1.94, 4.15)
<b>PFNA</b>	-0.15 (-1.17, 0.87)	-0.07 (-1.53, 1.40)	0.16 (-2.14, 2.47)	-0.35 (-2.23, 1.52)	-0.59 (-2.08, 0.90)	-0.66 (-2.45, 1.13)	-0.55 (-3.38, 2.29)
<b>PFDA</b>	-0.60 (-1.70, 0.49)	-0.72 (-2.34, 0.90)	-0.75 (-3.58, 2.07)	-0.99 (-3.01, 1.03)	-0.76 (-2.27, 0.76)	-0.87 (-2.81, 1.07)	-1.27 (-3.87, 1.32)
<b>PFUDA</b>	-0.10 (-1.18, 0.99)	-0.91 (-2.38, 0.56)	1.13 (-1.52, 3.78)	-1.47 (-3.24, 0.30)	0.49 (-1.13, 2.11)	-0.62 (-2.98, 1.74)	1.68 (-0.59, 3.94)
<b>PFHxS</b>	0.16 (-0.88, 1.19)	0.10 (-1.35, 1.54)	-0.28 (-3.10, 2.55)	0.04 (-1.69, 1.77)	0.08 (-1.43, 1.59)	-0.50 (-2.47, 1.47)	1.09 (-1.44, 3.61)
<b>PFOS</b>	0.77 (-0.30, 1.84)	0.37 (-1.09, 1.83)	0.16 (-2.48, 2.80)	0.39 (-1.43, 2.20)	0.88 (-0.72, 2.48)	0.01 (-2.19, 2.21)	2.34 (-0.18, 4.86)
				<b>LDL (mmol/L)</b>			
<b>PFOA</b>	0.02 (-0.11, 0.14)	-0.01 (-0.19, 0.17)	-0.20 (-0.59, 0.19)	0.07 (-0.14, 0.27)	0.07 (-0.11, 0.25)	0.14 (-0.08, 0.37)	-0.13 (-0.47, 0.21)
<b>PFNA</b>	0.02 (-0.09, 0.13)	0.03 (-0.14, 0.19)	0.09 (-0.24, 0.42)	-0.01 (-0.21, 0.19)	0.03 (-0.13, 0.19)	0.09 (-0.11, 0.28)	-0.16 (-0.49, 0.17)
<b>PFDA</b>	-0.03 (-0.15, 0.09)	0.03 (-0.15, 0.20)	0.09 (-0.4, 0.42)	0.02 (-0.17, 0.22)	-0.06 (-0.22, 0.11)	0.05 (-0.16, 0.27)	-0.30 (-0.59, -0.02)
<b>PFUDA</b>	0.07 (-0.05, 0.19)	0.09 (-0.16, 0.18)	-0.03 (-0.41, 0.36)	0.02 (-0.17, 0.21)	0.16 (-0.02, 0.33)	0.35 (0.10, 0.60)	-0.03 (-0.28, 0.23)
<b>PFHxS</b>	0.06 (-0.05, 0.18)	0.08 (-0.08, 0.24)	0.41 (0.02, 0.80)	-0.01 (-0.19, 0.17)	0.06 (-0.10, 0.23)	0.09 (-0.12, 0.31)	-0.01 (-0.29, 0.27)
<b>PFOS</b>	0.10 (-0.02, 0.21)	0.06 (-0.10, 0.23)	0.18 (-0.19, 0.56)	0.04 (-0.15, 0.22)	0.15 (-0.02, 0.32)	0.26 (0.02, 0.49)	-0.04 (-0.33, 0.25)
				<b>HDL (mmol/L)</b>			
<b>PFOA</b>	0.00 (-0.06, 0.05)	0.02 (-0.06, 0.09)	-0.06 (-0.23, 0.11)	0.04 (-0.06, 0.13)	-0.01 (-0.09, 0.07)	0.00 (-0.11, 0.11)	-0.05 (-0.19, 0.09)
<b>PFNA</b>	-0.03 (-0.08, 0.02)	0.02 (-0.05, 0.10)	0.07 (-0.08, 0.21)	-0.00 (-0.09, 0.09)	-0.06 (-0.14, 0.01)	-0.05 (-0.15, 0.04)	-0.10 (-0.23, 0.03)
<b>PFDA</b>	-0.03 (-0.09, 0.02)	0.02 (-0.06, 0.10)	0.03 (-0.14, 0.20)	0.01 (-0.08, 0.10)	-0.08 (-0.15, 0.00)	-0.06 (-0.16, 0.04)	-0.10 (-0.21, 0.02)

<b>PFUDA</b>	-0.01 (-0.06, 0.04)	-0.05 (-0.12, 0.02)	-0.02 (-0.17, 0.14)	-0.07 (-0.15, 0.02)	0.04 (-0.04, 0.12)	0.07 (-0.05, 0.19)	0.02 (-0.08, 0.13)
<b>PFHxS</b>	0.02 (-0.03, 0.07)	0.02 (-0.05, 0.09)	0.03 (-0.14, 0.21)	0.01 (-0.07, 0.09)	0.02 (-0.05, 0.10)	-0.02 (-0.12, 0.08)	0.09 (-0.02, 0.20)
<b>PFOS</b>	0.02 (-0.03, 0.07)	0.03 (-0.05, 0.10)	0.02 (-0.14, 0.18)	0.01 (-0.07, 0.10)	0.02 (-0.06, 0.10)	0.03 (-0.08, 0.15)	0.01 (-0.11, 0.12)
				<b>Total_Cholesterol (mmol/L)</b>			
<b>PFOA</b>	0.00 (-0.16, 0.17)	-0.01 (-0.25, 0.23)	-0.27 (-0.80, 0.25)	0.09 (-0.18, 0.36)	0.06 (-0.19, 0.31)	0.14 (-0.18, 0.46)	-0.18 (-0.63, 0.27)
<b>PFNA</b>	-0.02 (-0.17, 0.14)	0.03 (-0.19, 0.25)	0.14 (-0.31, 0.58)	-0.03 (-0.29, 0.24)	-0.04 (-0.26, 0.18)	0.03 (-0.24, 0.31)	-0.27 (-0.71, 0.16)
<b>PFDA</b>	-0.07 (-0.23, 0.09)	0.03 (-0.2, 0.27)	-0.00 (-0.55, 0.55)	0.03 (-0.23, 0.29)	-0.13 (-0.36, 0.09)	-0.01 (-0.31, 0.29)	-0.41 (-0.79, -0.03)
<b>PFUDA</b>	0.06 (-0.10, 0.22)	-0.05 (-0.27, 0.17)	-0.05 (-0.55, 0.46)	-0.04 (-0.29, 0.21)	0.21 (-0.03, 0.45)	0.42 (0.07, 0.79)	0.01 (-0.33, 0.35)
<b>PFHxS</b>	0.09 (-0.07, 0.24)	0.10 (-0.12, 0.31)	0.48 (-0.05, 1.01)	-0.01 (-0.24, 0.23)	0.09 (-0.13, 0.32)	0.07 (-0.23, 0.37)	0.08 (-0.29, 0.46)
<b>PFOS</b>	0.12 (-0.04, 0.28)	0.09 (-0.13, 0.3)	0.23 (-0.28, 0.74)	0.04 (-0.21, 0.29)	0.18 (-0.06, 0.42)	0.30 (-0.04, 0.63)	-0.03 (-0.42, 0.35)
				<b>Triglycerides (mmol/L)</b>			
<b>PFOA</b>	-0.04 (-0.12, 0.03)	-0.12 (-0.31, 0.07)	-0.13 (-0.57, 0.30)	-0.11 (-0.32, 0.10)	-0.02 (-0.19, 0.16)	-0.03 (-0.24, 0.18)	-0.00 (-0.32, 0.31)
<b>PFNA</b>	-0.05 (-0.12, 0.02)	-0.11 (-0.29, 0.07)	-0.06 (-0.43, 0.30)	-0.14 (-0.34, 0.06)	-0.05 (-0.21, 0.11)	-0.05 (-0.24, 0.13)	-0.09 (-0.39, 0.21)
<b>PFDA</b>	-0.03 (-0.10, 0.04)	-0.06 (-0.25, 0.13)	-0.25 (-0.69, 0.19)	0.01 (-0.20, 0.22)	-0.03 (-0.19, 0.13)	-0.01 (-0.21, 0.20)	-0.16 (-0.42, 0.11)
<b>PFUDA</b>	0.02 (-0.05, 0.09)	-0.01 (-0.18, 0.17)	0.08 (-0.34, 0.51)	-0.01 (-0.20, 0.18)	0.13 (-0.04, 0.30)	0.11 (-0.14, 0.36)	0.14 (-0.10, 0.37)
<b>PFHxS</b>	0.01 (-0.05, 0.08)	0.01 (-0.16, 0.19)	0.33 (-0.11, 0.78)	-0.06 (-0.24, 0.13)	0.07 (-0.09, 0.23)	0.15 (-0.20, 0.21)	0.05 (-0.21, 0.31)
<b>PFOS</b>	0.01 (-0.06, 0.08)	0.01 (-0.17, 0.18)	0.29 (-0.12, 0.71)	-0.07 (-0.26, 0.12)	0.06 (-0.11, 0.23)	0.04 (-0.19, 0.26)	-0.02 (-0.29, 0.24)
				<b>Fructosamine (µmol/L)</b>			
<b>PFOA</b>	-0.74 (-3.47, 1.98)	0.63 (-3.17, 4.42)	2.45 (-4.58, 9.49)	-0.51 (-5.28, 4.26)	-1.58 (-5.61, 2.45)	-1.48 (-6.54, 3.59)	-3.53 (-10.58, 3.51)
<b>PFNA</b>	-0.70 (-3.16, 1.75)	1.06 (-2.46, 4.59)	2.64 (-3.28, 8.56)	0.18 (-4.36, 4.72)	-2.22 (-5.75, 1.32)	-1.39 (-5.67, 2.89)	-4.20 (-10.98, 2.58)
<b>PFDA</b>	-1.39 (-3.98, 1.2)	-0.33 (-4.17, 3.52)	2.59 (-4.78, 9.95)	-1.73 (-6.55, 3.10)	-2.00 (-5.55, 1.55)	-2.36 (-7.00, 2.28)	-1.13 (-7.06, 4.80)
<b>PFUDA</b>	-1.04 (-3.63, 1.54)	-2.92 (-6.34, 0.5)	-0.20 (-6.81, 6.41)	-3.55 (-7.72, 0.63)	0.60 (-3.3, 4.51)	1.91 (-3.99, 7.80)	-0.96 (-6.40, 4.48)
<b>PFHxS</b>	0.45 (-2.02, 2.92)	2.07 (-1.35, 5.49)	3.97 (-3.25, 11.2)	1.35 (-2.77, 5.47)	-1.02 (-4.61, 2.56)	-4.73 (-9.45, 0.00)	2.58 (-3.27, 8.42)
<b>PFOS</b>	0.97 (-1.59, 3.53)	2.70 (-0.75, 6.15)	4.42 (-2.3, 11.15)	1.44 (-2.89, 5.76)	-1.09 (-4.91, 2.73)	-2.97 (-8.32, 2.38)	0.81 (-5.16, 6.80)
				<b>Leptin (µg/mL)</b>			
<b>PFOA</b>	0.00 (-0.16, 0.17)	-0.11 (-0.38, 0.17)	-0.01 (-0.87, 0.83)	-0.24 (-0.62, 0.15)	0.11 (-0.16, 0.38)	0.16 (-0.19, 0.51)	0.03 (-0.41, 0.48)
<b>PFNA</b>	0.02 (-0.13, 0.17)	-0.14 (-0.39, 0.12)	-0.11 (-0.83, 0.60)	-0.17 (-0.54, 0.19)	0.12 (-0.12, 0.35)	0.14 (-0.15, 0.43)	0.06 (-0.37, 0.50)
<b>PFDA</b>	0.07 (-0.08, 0.23)	0.11 (-0.17, 0.39)	0.36 (-0.53, 1.24)	-0.02 (-0.39, 0.35)	0.06 (-0.18, 0.29)	0.10 (-0.22, 0.42)	-0.12 (-0.5, 0.27)
<b>PFUDA</b>	0.13 (-0.02, 0.28)	0.19 (-0.06, 0.45)	0.71 (-0.14, 1.56)	0.01 (-0.34, 0.36)	0.02 (-0.24, 0.28)	0.05 (-0.34, 0.45)	0.04 (-0.31, 0.38)
<b>PFHxS</b>	-0.09 (-0.24, 0.06)	-0.10 (-0.35, 0.16)	0.29 (-0.59, 1.16)	-0.27 (-0.61, 0.06)	-0.16 (-0.4, 0.08)	-0.02 (-0.35, 0.31)	-0.48 (-0.83, -0.13)
<b>PFOS</b>	-0.07 (-0.23, 0.08)	-0.10 (-0.35, 0.16)	-0.02 (-0.84, 0.80)	-0.31 (-0.66, 0.04)	-0.15 (-0.41, 0.10)	-0.21 (-0.58, 0.16)	-0.18 (-0.56, 0.19)
				<b>Adiponectin (µg/mL)</b>			
<b>PFOA</b>	-0.14 (-0.6, 0.32)	-0.83 (-1.57, -0.1)	-2.04 (-3.67, -0.41)	-0.45 (-1.26, 0.36)	0.33 (-0.24, 0.89)	0.35 (-0.39, 1.09)	0.26 (-0.59, 1.10)

<b>PFNA</b>	-0.06 (-0.47, 0.36)	-0.27 (-0.97, 0.44)	-0.15 (-1.60, 1.31)	-0.32 (-1.11, 0.47)	0.03 (-0.47, 0.52)	0.01 (-0.63, 0.65)	0.08 (-0.72, 0.89)
<b>PFDA</b>	-0.04 (-0.48, 0.39)	-0.11 (-0.85, 0.63)	0.20 (-1.57, 1.97)	-0.32 (-1.12, 0.48)	-0.02 (-0.51, 0.47)	-0.09 (-0.80, 0.61)	0.17 (-0.53, 0.86)
<b>PFUDA</b>	-0.15 (-0.59, 0.29)	-0.33 (-1.01, 0.36)	0.64 (-1.06, 2.33)	-0.66 (-1.38, 0.06)	-0.07 (-0.61, 0.48)	-0.19 (-1.04, 0.67)	0.01 (-0.64, 0.66)
<b>PFHxS</b>	-0.01 (-0.43, 0.41)	-0.53 (-1.20, 0.14)	-0.61 (-2.38, 1.16)	-0.67 (-1.37, 0.03)	0.40 (-0.10, 0.90)	0.49 (-0.21, 1.19)	0.05 (-0.65, 0.75)
<b>PFOS</b>	0.09 (-0.34, 0.52)	-0.317 (-1.00, 0.36)	-0.98 (-2.62, 0.67)	-0.33 (-1.06, 0.41)	0.35 (-0.18, 0.88)	0.40 (-0.38, 1.18)	0.14 (-0.57, 0.85)

BMI : Body mass index; DBP : Diastolic blood pressure; HDL : High-density lipoproteins; LDL : Low-density lipoproteins; PFAS : Per- and polyfluoroalkyl substances PFDA : Perfluorodecanoic acid; PFHxS : Perfluorohexane sulfonate; PFNA: Perfluorononanoic acid; PFOA : Perfluorooctanoic acid; PFOS : Perfluorooctanesulfonic acid; PFUDA : Perfluoroundecanoic acid; MAP : Mean arterial blood pressure; SBP : Systolic blood pressure.

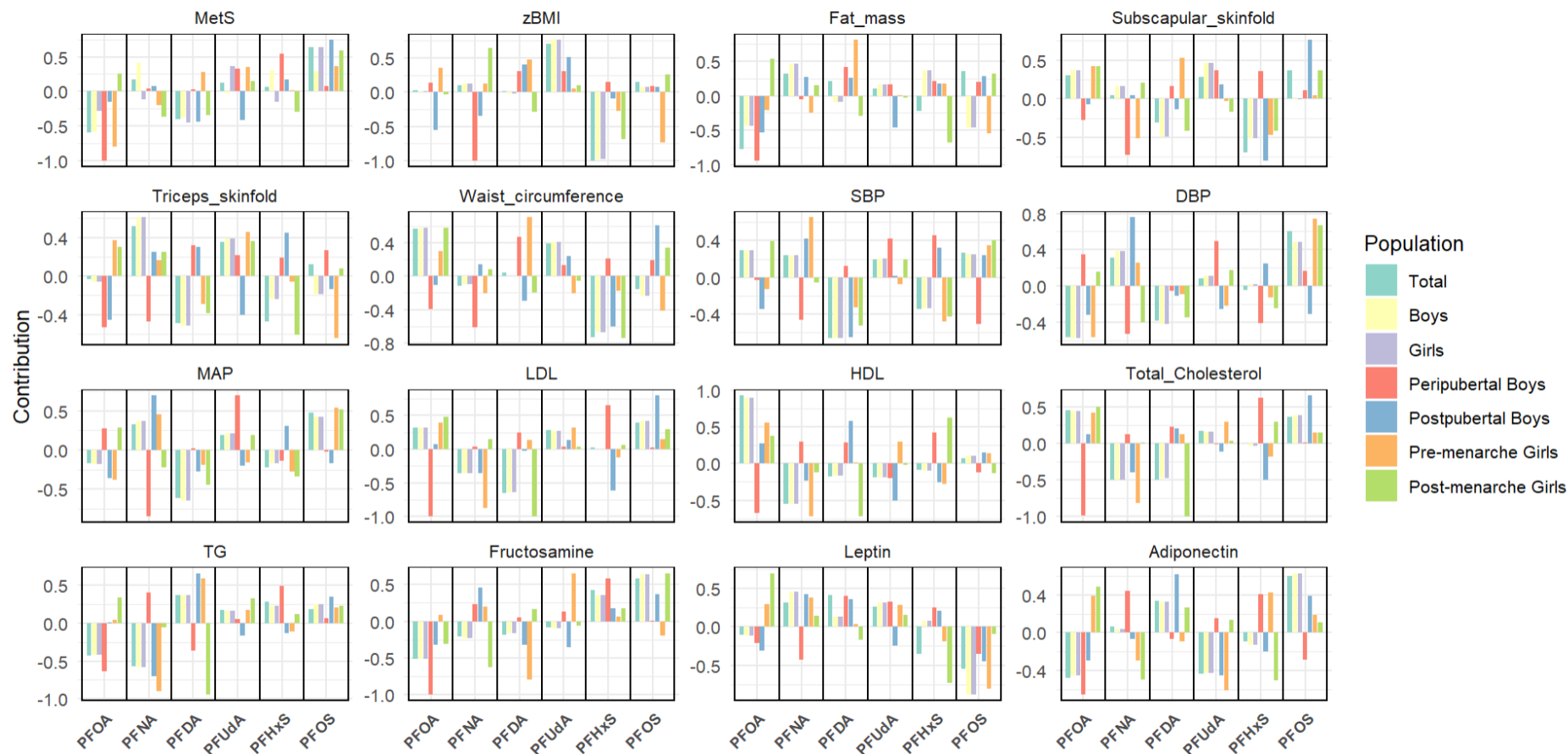
*Table S4. Results of sensitivity analyses: regression models between prenatal PFAS exposure and cardiometabolic health after excluding the five most influential observations.*

	<b>PFOA</b>	<b>PFNA</b>	<b>PFDA</b>	<b>PFUDA</b>	<b>PFHxS</b>	<b>PFOS</b>
	<b>beta [95 % CI]</b>	<b>beta [95 % CI]</b>	<b>beta [95 % CI]</b>	<b>beta [95 % CI]</b>	<b>beta [95 % CI]</b>	<b>beta [95 % CI]</b>
<b>Cardiometabolic score</b>	0.02 (-0.36, 0.41)	0.06 (-0.31, 0.43)	-0.08 (-0.47, 0.31)	0.12 (-0.26, 0.50)	0.02 (-0.33, 0.37)	0.23 (-0.13, 0.59)
<b>zBMI</b>	0.08 (-0.08, 0.24)	0.07 (-0.08, 0.22)	0.02 (-0.13, 0.18)	0.12 (-0.03, 0.27)	-0.08 (-0.23, 0.06)	-0.04 (-0.19, 0.11)
<b>Fat mass (%)</b>	0.68 (-0.20, 1.57)	0.46 (-0.40, 1.33)	0.50 (-0.41, 1.41)	0.43 (-0.45, 1.31)	-0.15 (-0.96, 0.65)	0.12 (-0.71, 0.95)
<b>Subscapular skinfold (mm)</b>	0.54 (0.00, 1.08)	0.13 (-0.41, 0.67)	-0.07 (-0.60, 0.45)	0.19 (-0.36, 0.73)	0.07 (-0.43, 0.56)	0.21 (-0.3, 0.72)
<b>Triceps skinfold (mm)</b>	0.33 (-0.41, 1.08)	0.14 (-0.61, 0.89)	-0.07 (-0.83, 0.68)	0.34 (-0.4, 1.07)	-0.31 (-0.98, 0.37)	-0.06 (-0.76, 0.64)
<b>Waist circumference (cm)</b>	0.45 (-0.64, 1.54)	0.03 (-1.09, 1.13)	0.09 (-1.08, 1.26)	0.23 (-0.89, 1.34)	-0.72 (-1.71, 0.26)	-0.71 (-1.73, 0.32)
<b>SBP (mmHg)</b>	1.15 (-0.37, 2.66)	0.63 (-0.80, 2.05)	-0.69 (-2.19, 0.81)	0.53 (-0.98, 2.04)	0.84 (-0.53, 2.21)	1.51 (0.09, 2.93)
<b>DBP (mmHg)</b>	-0.90 (-2.06, 0.26)	-0.54 (-1.62, 0.54)	-0.59 (-1.72, 0.54)	-0.41 (-1.55, 0.73)	-0.54 (-1.61, 0.53)	0.11 (-0.99, 1.21)
<b>MAP (mmHg)</b>	-0.17 (-1.28, 0.94)	-0.14 (-1.17, 0.88)	-0.65 (-1.74, 0.43)	-0.08 (-1.15, 1.00)	-0.08 (-1.09, 0.92)	0.56 (-0.48, 1.59)
<b>LDL (mmol/L)</b>	0.04 (-0.08, 0.16)	0.03 (-0.09, 0.14)	-0.03 (-0.15, 0.08)	0.04 (-0.07, 0.16)	0.06 (-0.04, 0.17)	0.10 (-0.01, 0.21)
<b>HDL (mmol/L)</b>	-0.02 (-0.07, 0.04)	-0.03 (-0.08, 0.02)	-0.03 (-0.08, 0.02)	-0.01 (-0.07, 0.04)	0.03 (-0.02, 0.08)	0.02 (-0.03, 0.07)
<b>Total Cholesterol (mmol/L)</b>	-0.01 (-0.18, 0.15)	-0.01 (-0.16, 0.15)	-0.07 (-0.22, 0.09)	0.03 (-0.12, 0.19)	0.08 (-0.07, 0.23)	0.11 (-0.04, 0.26)
<b>Triglycerides (mmol/L)</b>	-0.07 (-0.19, 0.05)	-0.07 (-0.19, 0.04)	-0.04 (-0.16, 0.08)	0.05 (-0.07, 0.17)	0.04 (-0.08, 0.15)	0.05 (-0.07, 0.16)
<b>Fructosamine (μmol/L)</b>	-0.60 (-3.20, 1.99)	-0.54 (-3.04, 1.95)	-1.47 (-4.07, 1.14)	-1.29 (-3.91, 1.33)	0.23 (-2.12, 2.59)	1.38 (-1.15, 3.91)

<b>Leptin (µg/mL)</b>	-0.05 (-0.27, 0.17)	0.03 (-0.18, 0.24)	0.10 (-0.11, 0.31)	0.17 (-0.05, 0.38)	-0.18 (-0.38, 0.02)	-0.20 (-0.41, 0.00)
<b>Adiponectin (µg/mL)</b>	-0.08 (-0.51, 0.35)	-0.03 (-0.46, 0.39)	0.05 (-0.38, 0.47)	-0.10 (-0.53, 0.33)	-0.01 (-0.40, 0.38)	0.07 (-0.33, 0.47)

*BMI : Body mass index; DBP : Diastolic blood pressure; HDL : High-density lipoproteins; LDL : Low-density lipoproteins; PFDA : Perfluorodecanoic acid; PFHxS : Perfluorohexane sulfonate; PFNA: Perfluorononanoic acid; PFOA : Perfluorooctanoic acid; PFOS : Perfluorooctanesulfonic acid; PFUdA : Perfluoroundecanoic acid; MAP : Mean arterial blood pressure; SBP : Systolic blood pressure.*

Figure S5. Individual PFAS contributions in the association between prenatal exposure to PFAS mixture and cardiometabolic health indicators by Quantile G-computation.



BMI : Body mass index; DBP : Diastolic blood pressure; HDL : High-density lipoproteins; LDL : Low-density lipoproteins PFDA : Perfluorodecanoic acid; PFHxS : Perfluorohexane sulfonate; PFNA: Perfluorononanoic acid; PFOA : Perfluorooctanoic acid; PFOS : Perfluorooctanesulfonic acid; PFUdA : Perfluoroundecanoic acid; MAP : Mean arterial blood pressure; SBP : Systolic blood pressure; TG: Triglycerides