

Supplementary to

Current exposure to phthalates and DINCH in European children and adolescents – Results from the HBM4EU Aligned Studies 2014 to 2021

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Supplementary to „Current exposure to phthalates and DINCH in European children and adolescents – Results from the HBM4EU Aligned Studies 2014 to 2021“,
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Supplementary to „Current exposure to phthalates and DINCH in European children and adolescents – Results from the HBM4EU Aligned Studies 2014 to 2021“, Vogel et al., 2023

Table S1. Exposure biomarker data from children with sample size (N), LOQ, and % at and above detection limit.

Study	Parent Region	N	DEP	BBzP	DiBP	DnBP	DCHP	DnPeP	DEHP				DiNP		DiDP		DnOP	DINCH	
			MEP	MBzP	MiBP	MnBP	MCHP	MnPeP	MEHP	OH-MEHP	oxo-MEHP	cx-MEPP	OH-MiNP	cx-MiNP	OH-MiDP	cx-MiDP	MnOP	OH-MINCH	cx-MINCH
NEB II Norway	North	300	0.5 100%	0.2 100%	0.5 100%	0.5 100%			0.5 89%	0.5 100%	0.5 100%	2 100%	0.5 100%		0.5 99%			0.5 100%	
OCC Denmark	North	300	1.3 98%		0.47 100%	0.53 100%	0.69 0%	0.12 12%	0.2 78%	0.14 100%	0.2 100%	0.22 100%	0.1 99%	0.11 100%	0.06 93%	0.07 97%	0.1 1%	0.08 100%	0.05 100%
InAirQ Hungary	East	262	0.15 100%	0.37 87%	0.74 100%	0.74 99%	0.15 0%	0.74 0%	0.37 91%	0.74 99%	0.74 95%	0.37 100%	0.15 93%	0.15 99%	0.37 80%		0.37 2%	0.37 88%	0.37 77%
PCB cohort Slovakia	East	300																0.14 100%	0.1 100%
POLAES Poland	East	300	1 100%	0.2 95%		1 100%	0.2 6%	0.2 2%	0.3 96%	0.2 100%	0.2 100%	0.2 100%	0.5 97%	0.2 100%	0.2 93%	0.2 92%	0.2 0%	0.05 100%	0.05 98%
CROME Greece	South	161	0.2 100%	0.2 97%	0.2 100%	0.2 100%			0.2 99%	0.2 100%	0.2 99%	0.2 100%	0.2 96%				0.2 13%	0.2 99%	0.2 94%
NAC II Italy	South	300	0.5 100%	0.2 100%	0.5 100%	0.5 99%	0.1 13%	0.1 1%		0.1 100%	0.1 100%	0.1 100%			0.2 95%		0.1 1%	0.14 100%	0.1 100%
SLO CRP Slovenia	South	149	0.5 100%	0.2 100%	1 100%	1 100%	0.2 2%	0.2 1%	0.3 96%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 99%	0.2 97%	0.2 0%	0.05 100%	0.05 100%
3xG Belgium	West	133	0.4 100%	0.2 98%	0.4 100%	0.4 100%			0.2 94%	0.2 100%	0.2 100%	0.2 100%	0.2 85%	0.2 65%	0.2 98%	0.2 98%		0.2 97%	0.2 85%
ESTEBAN France	West	286	0.5 100%	0.2 100%	1 100%	1 100%	0.2 4%	0.2 5%	0.3 95%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 98%	0.2 100%	0.2 0%	0.05 100%	0.05 100%
GerES V-sub Germany	West	300	0.5 100%	0.2 100%	1 100%	1 100%	0.2 6%	0.2 5%	0.5 83%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 99%	0.2 99%	0.2 0%	0.05 100%	0.05 99%
SPECIMEn-NL The Netherlands	West	89	0.5 100%	0.2 96%	1 100%	1 100%	0.2 0%	0.2 3%	0.3 92%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 96%	0.2 93%	0.2 0%	0.05 100%	0.05 100%

Notes: N – maximum sample size per study (can vary between biomarkers); LOQ = limit of quantification (µg/L). When both LOQ and LOD (limit of detection) were available, LOQ is shown (applicable to all depicted data). Included data was assessed by the HBM4EU Quality Assurance Unit (QAU) with label “Biomarker data quality assured by HBM4EU QA/QC program” (white background) and label “Biomarker data generated before HBM4EU QA/QC program but deemed comparable by QAU” (grey background).

Table S2. Exposure biomarker data from adolescents with sample size (N), LOQ or LOD, and fraction at and above detection limit.

Parent			DEP	BBzP	DIBP	DnBP	DCHP	DnPeP	DEHP				DiNP		DiDP		DnOP	DINCH	
Study	Region	N	MEP	MBzP	MiBP	MnBP	MCHP	MnPeP	MEHP	OH-MEHP	oxo-MEHP	cx-MEPP	OH-MiNP	cx-MiNP	OH-MiDP	cx-MiDP	MnOP	OH-MINCH	cx-MINCH
NEB II Norway	North	181	0.5 100%	0.2 100%	0.5 100%	0.5 100%			0.5 85%	0.5 100%	0.5 100%	2 100%	0.5 99%		0.5 100%			0.5 100%	
Riksmaten Adolescents Sweden	North	300		LOD: 0.2 100%					LOD: 0.3 98%	LOD: 0.1 100%	LOD: 0.2 100%	LOD: 0.07 100%	LOD: 0.05 100%	LOD: 0.05 100%	LOD: 0.08 99%	LOD: 0.1 95%		LOD: 0.1 98%	LOD: 0.1 98%
PCB cohort follow-up Slovakia	East	287	0.6 100%	0.3 92%		0.4 99%			0.5 98%	0.2 100%	0.2 100%	0.2 99%		0.4 99%				0.14 100%	0.1 99%
CELSPAC: Teenagers Czech Republic	East	300	0.6 100%	0.3 95%		0.4 91%			0.5 94%	0.2 99%	0.2 100%	0.2 100%		0.4 100%					
POLAES Poland	East	281	0.5 100%	0.2 93%		1 100%	0.2 5%	0.2 2%	0.3 96%	0.2 100%	0.2 100%	0.2 100%	0.2 99%	0.2 100%	0.2 93%	0.2 91%	0.2 0%	0.05 100%	0.05 94%
BEA Spain	South	300	0.5 100%	0.2 96%	1 100%	1 100%	0.2 0%	0.2 1%	0.3 97%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 96%	0.2 97%	0.2 0%	0.05 100%	0.05 99%
CROME Greece	South	150	0.2 100%	0.2 96%	0.2 100%	0.2 100%			0.2 99%	0.2 100%	0.2 100%	0.2 100%	0.2 99%	0.2 99%			0.2 17%	0.2 94%	0.2 89%
SLO CRP Slovenia	South	96	0.5 100%	0.2 100%	1 100%	1 100%	0.2 0%	0.2 2%	0.3 96%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 98%	0.2 96%	0.2 0%	0.05 100%	0.05 100%
ESTEBAN France	West	304	0.5 100%	0.2 99%	1 100%	1 100%	0.2 3%	0.2 3%	0.3 97%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 99%	0.2 99%	0.2 0%	0.05 100%	0.05 100%
FLEHS IV Belgium	West	300	0.5 100%	0.2 98%	0.5 100%	0.5 100%			0.5 81%	0.2 100%	0.2 99%	0.5 100%	0.2 100%	0.2 100%	0.2 92%	0.2 100%		0.2 96%	0.2 98%
GerES V-sub Germany	West	300	0.5 100%	0.2 100%	1 100%	1 100%	0.2 6%	0.2 5%	0.5 87%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 100%	0.2 97%	0.2 95%	0.2 0%	0.05 100%	0.05 99%

Notes: N – maximum sample size per study (can vary between biomarkers); LOQ = limit of quantification, LOD = limit of detection in µg/L. When both LOQ and LOD were available, LOQ is shown. Riksmaten Adolescents is the only study where only LOD was available and depicted. Included data was assessed by the HBM4EU Quality Assurance Unit (QAU) with label “Biomarker data quality assured by HBM4EU QA/QC program” (white background) and label “Biomarker data generated before HBM4EU QA/QC program but deemed comparable by QAU” (grey background).

Table S3: Geometric means and percentiles of the urinary concentration adjusted for creatinine ($\mu\text{g/g crt}$) of phthalate metabolites and sums

Children							Adolescents				
Substance	Biomarker	N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
DEP	MEP	2,572	27.0 (15.6, 46.9)	232 (148, 397)	24.2	137	2,494	32.6 (22.9, 46.4)	271 (171, 476)	28.1	151
BBzP	MBzP	2,271	3.87 (2.36, 6.33)	28.5 (15.5, 56.8)	3.72	17.6	2,794	2.06 (1.26, 3.38)	18.0 (10.2, 33.3)	1.89	10.4
DiBP	MiBP	2,271	29.1 (23.0, 36.7)	117 (83.8, 167)	27.3	79.1	1,626	19.5 (15.3, 24.9)	76.9 (57.4, 112)	17.9	52.1
DnBP	MnBP	2,571	23.4 (19.5, 28.1)	82.5 (61.4, 116)	22.4	58.8	2,494	18.7 (13.1, 26.6)	98.6 (43.1, 229)	18.1	60.3
DEHP	MEHP	2,272	1.33 (0.927, 1.91)	7.01 (5.28, 10.8)	1.45	4.80	2,794	1.32 (1.07, 1.64)	6.07 (4.52, 8.26)	1.30	4.13
	OH-MEHP	2,571	12.4 (9.69, 15.8)	45.1 (35.9, 58.8)	11.9	31.9	2,794	7.81 (5.66, 10.8)	32.9 (18.6, 82.8)	7.28	22.3
	cx-MEPP	2,571	15.9 (12.6, 20.1)	55.3 (45.3, 67.5)	15.4	40.8	2,794	7.96 (6.04, 10.5)	28.8 (20.9, 39.0)	7.89	20.1
	oxo-MEHP	2,569	8.21 (6.30, 10.7)	29.6 (24.1, 41.4)	7.85	22.1	2,793	4.58 (3.64, 5.75)	16.5 (12.8, 23.6)	4.36	11.8
	Σ DEHPm	2,569	37.2 (29.4, 47.0)	128 (105, 162)	35.5	93.6	2,793	21.6 (17.5, 26.5)	73.8 (55.4, 111)	20.2	52.8
	Σ DEHPm_COPHES	2,270	21.4 (16.8, 27.3)	78.4 (61.9, 105)	20.3	55.6	2,793	14.3 (10.9, 18.7)	55.9 (35.9, 100)	13.5	37.7
DiDP	OH-MiDP	2,410	1.26 (0.920, 1.71)	5.93 (4.16, 8.86)	1.20	3.72	2,057	0.945 (0.671, 1.33)	4.66 (3.27, 6.60)	0.922	2.74
	cx-MiDP	1,549	0.844 (0.644, 1.11)	3.76 (2.42, 6.04)	0.788	2.34	1,876	0.566 (0.376, 0.851)	2.39 (1.69, 3.25)	0.557	1.57
	Σ DiDPm	1,549	2.16 (1.56, 2.99)	9.84 (5.99, 18.6)	2.04	6.18	1,876	1.57 (1.18, 2.07)	7.07 (4.48, 10.6)	1.45	4.22
DiNP	OH-MiNP	2,272	4.12 (2.65, 6.41)	21.1 (13.6, 45.1)	4.15	13.5	2,207	3.57 (2.77, 4.59)	19.7 (11.5, 36.0)	3.28	10.6
	cx-MiNP	1,972	4.85 (2.74, 8.59)	26.4 (15.5, 72.4)	5.09	17.1	2,613	4.06 (2.69, 6.12)	23.0 (14.2, 46.8)	3.71	13.7
DiNP	Σ DiNPm	1,972	9.29 (6.03, 14.3)	45.4 (26.3, 113)	9.02	28.2	2,026	7.81 (5.47, 11.1)	42.1 (22.3, 111)	6.99	23.8
DINCH	OH-MINCH	2,870	2.51 (1.88, 3.35)	17.4 (10.8, 30.6)	2.31	9.36	2,494	1.19 (0.884, 1.61)	8.19 (5.49, 13.6)	1.08	4.68
	cx-MINCH	2,570	1.36 (0.932, 1.98)	9.64 (5.11, 19.0)	1.26	5.11	2,312	0.699 (0.529, 0.924)	4.35 (2.68, 7.92)	0.674	2.59
	Σ DINCHm	2,570	3.88 (2.80, 5.39)	26.6 (15.3, 49.5)	3.56	14.6	2,312	1.88 (1.47, 2.41)	11.7 (8.32, 18.7)	1.71	6.87

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$) sums: Σ DEHPm = OH-MEHP + cx-MEPP + oxo-MEHP; Σ DEHPm_COPHES reflects the sum of metabolites investigated in DEMOCOPHES : MEHP + OH-MEHP + oxo-MEHP; Σ DiDPm = OH-MiDP + cx-MiDP; Σ DiNPm = OH-MiNP + cx-MiNP; Σ DINCHm = OH-MINCH + cx-MINCH

Table S4: Geometric means and percentiles of the urinary concentration adjusted for sg (in µg/L) of phthalate metabolites and sums in adolescents

Substance	Biomarker	N	GM (95% CI)	P95 (95% CI)	P50	P90
DEP	MEP	2,188	50.8 (33.3, 77.3)	495 (297, 825)	44.2	253
BBzP	MBzP	2,488	2.92 (2.08, 4.10)	23.1 (15.5, 37.1)	2.73	13.7
DiBP	MiBP	1,321	27.2 (24.4, 30.2)	122 (81.2, 164)	24.5	73.0
DnBP	MnBP	2,188	31.0 (18.7, 51.2)	204 (69.2, 941)	28.5	127
DEHP	MEHP	2,488	2.15 (1.56, 2.98)	11.4 (6.69, 21.4)	2.06	7.06
DEHP	OH-MEHP	2,488	12.4 (8.03, 19.2)	69.4 (26.2, 268)	11.1	42.6
DEHP	cx-MEPP	2,488	12.2 (9.59, 15.6)	43.9 (32.3, 59.7)	12.2	30.6
DEHP	oxo-MEHP	2,487	7.04 (5.52, 8.96)	26.6 (20.2, 41.0)	6.69	19.3
DEHP	ΣDEHPm	2,487	33.8 (25.8, 44.2)	129 (85.4, 245)	30.6	92.3
DEHP	ΣDEHPm_COPHES	2,487	22.6 (15.6, 32.7)	103 (56.1, 259)	20.3	68.2
DiDP	OH-MiDP	1,752	1.32 (1.02, 1.71)	5.51 (4.61, 7.29)	1.28	3.72
DiDP	cx-MiDP	1,571	0.829 (0.539, 1.28)	2.98 (2.45, 3.88)	0.857	2.14
DiDP	ΣDiDPm	1,571	2.26 (1.86, 2.74)	8.45 (6.61, 11.3)	2.11	5.60
DiNP	OH-MiNP	1,902	5.15 (4.66, 5.70)	27.3 (17.9, 40.7)	4.65	14.7
DiNP	cx-MiNP	2,307	6.12 (4.16, 9.01)	33.1 (23.4, 49.6)	5.65	20.5
DiNP	ΣDiNPm	1,721	11.2 (8.74, 14.4)	58.8 (35.0, 104)	9.82	32.6
DINCH	OH-MINCH	2,188	1.83 (1.41, 2.39)	12.2 (8.81, 19.0)	1.68	7.03
DINCH	cx-MINCH	2,006	1.08 (0.912, 1.27)	6.29 (4.72, 8.94)	1.01	3.67
DINCH	ΣDINCHm	2,006	2.93 (2.45, 3.49)	18.0 (12.8, 24.8)	2.63	10.1

Notes: Unit: adjusted for specific gravity (µg/L) sums: ΣDEHPm = OH-MEHP + cx-MEPP + oxo-MEHP; ΣDEHPm_COPHES reflects the sum of metabolites investigated in DEMOCOPHES : MEHP + OH-MEHP + oxo-MEHP; ΣDiDPm = OH-MiDP + cx-MiDP; ΣDiNPm = OH-MiNP + cx-MiNP; ΣDINCHm = OH-MINCH + cx-MINCH

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[Stratified exposure biomarker concentrations by phthalate metabolite \(or sum of metabolites\) and adjustment method](#)

Table S5 A: DEP - Biomarker MEP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,580	24.4 (13.9, 43.0)	214 (138, 396)	22.7	130	2,499	43.3 (31.4, 59.8)	387 (260, 615)	37.9	214
Sex	Female	1,274	25.5 (14.5, 44.7)	219 (156, 371)	23.7	140	1,254	49.2 (35.3, 68.5)	493 (301, 692)	43.1	250
	Male	1,303	23.5 (13.3, 41.6)	208 (120, 425)	21.6	125	1,245	38.1 (27.7, 52.5)	304 (176, 595)	34.4	167
Region	North	600	11.3 (10.3, 12.3)	79.1 (61.4, 115)	10.7	43.1	181	20.7 (17.8, 24.0)	120 (83.4, 201)	17.5	82.1
	South	610	50.8 (46.3, 55.7)	426 (303, 521)	45.9	223	546	71.2 (64.3, 78.8)	631 (529, 882)	66.5	352
	West	808	27.1 (25.0, 29.5)	200 (174, 234)	24.2	127	904	37.5 (34.5, 40.8)	389 (299, 487)	30.7	208
	East	562	21.7 (19.6, 24.1)	157 (132, 188)	22.9	114	868	43.0 (40.2, 46.1)	275 (220, 319)	39.9	159
Urbanisation	Cities	1,320	24.2 (9.86, 59.3)	216 (120, 506)	24.3	136	959	48.8 (30.4, 78.5)	412 (201, 945)	44.0	230
	Towns	710	21.0 (14.3, 30.8)	168 (82.4, 436)	18.6	96.2	746	36.8 (25.8, 52.3)	344 (231, 477)	31.0	191
	Rural areas	550	30.5 (19.3, 48.0)	259 (178, 424)	27.2	153	768	43.7 (34.5, 55.3)	400 (274, 669)	37.3	212
Education	Low	104	20.7 (6.50, 65.8)	224 (111, 445)	18.7	157	147	53.4 (33.6, 85.0)	316 (220, 384)	48.7	215
	Medium	787	24.9 (10.6, 58.1)	264 (157, 500)	22.9	170	916	50.8 (38.6, 66.8)	483 (313, 847)	44.1	268
	High	1,634	24.7 (15.8, 38.7)	189 (128, 301)	23.0	118	1,365	37.6 (26.8, 52.8)	295 (193, 586)	33.3	169

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S5 B: DEP - Biomarker MEP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,572	27.0 (15.6, 46.9)	232 (148, 397)	24.2	137	2,494	32.6 (22.9, 46.4)	271 (171, 476)	28.1	151
Sex	Female	1,271	29.1 (16.9, 50.2)	241 (163, 392)	26.6	154	1,253	37.9 (26.4, 54.6)	319 (215, 548)	34.3	189
	Male	1,298	25.2 (14.4, 44.1)	217 (121, 421)	22.4	122	1,241	27.9 (19.5, 40.0)	205 (130, 419)	23.8	117
Region	North	600	13.2 (12.3, 14.3)	79.2 (65.8, 92.3)	11.5	47.5	181	16.3 (14.2, 18.7)	98.9 (64.4, 157)	13.0	63.7
	South	610	55.0 (50.3, 60.2)	414 (324, 519)	46.6	239	546	55.7 (50.6, 61.3)	457 (321, 549)	50.6	235
	West	800	27.8 (25.7, 30.2)	222 (170, 281)	23.8	121	899	28.0 (25.8, 30.4)	291 (217, 389)	22.5	153
	East	562	25.7 (23.3, 28.3)	184 (147, 215)	27.9	115	868	31.4 (29.5, 33.4)	184 (142, 229)	28.4	104
Urbanisation	Cities	1,314	28.8 (12.7, 65.6)	246 (144, 490)	28.3	155	958	39.4 (23.9, 65.2)	321 (159, 677)	35.0	164
	Towns	708	21.2 (14.0, 32.2)	158 (66.8, 435)	18.3	91.9	744	27.2 (19.2, 38.4)	219 (149, 384)	22.3	134
	Rural areas	550	31.6 (18.4, 54.3)	278 (177, 418)	27.4	170	766	30.6 (23.7, 39.5)	271 (205, 407)	25.4	146
Education	Low	104	27.5 (9.80, 77.0)	354 (134, 417)	25.3	172	147	39.7 (21.4, 73.6)	268 (107, 640)	36.3	198
	Medium	782	29.4 (13.3, 65.1)	281 (159, 584)	26.3	174	914	36.1 (26.4, 49.2)	327 (205, 569)	30.2	184
	High	1,631	26.2 (16.3, 42.2)	200 (122, 343)	23.8	115	1,362	29.6 (20.4, 42.9)	218 (143, 401)	26.3	127

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S5 C: DEP - Biomarker MEP, adjusted for specific gravity ($\mu\text{g/L}$)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,188	50.8 (33.3, 77.3)	495 (297, 825)	44.2	253
Sex	Female	1,090	58.8 (38.1, 90.8)	572 (382, 971)	52.1	344
	Male	1,098	43.8 (28.5, 67.3)	338 (185, 832)	39.5	183
Region	North	181	18.9 (16.4, 21.7)	122 (69.5, 162)	15.5	69.1
	South	546	92.7 (84.0, 102)	764 (584, 909)	82.2	475
	West	594	31.9 (28.9, 35.2)	354 (253, 618)	23.8	166
	East	867	58.7 (54.9, 62.7)	397 (305, 454)	50.2	208
Urbanisation	Cities	888	62.8 (38.2, 103)	572 (277, 1180)	56.5	284
	Towns	652	40.0 (26.4, 60.7)	407 (170, 814)	32.1	185
	Rural areas	622	48.0 (32.4, 71.2)	494 (305, 836)	41.1	226
Education	Low	125	64.6 (34.2, 122)	382 (209, 914)	56.9	319
	Medium	784	60.0 (41.7, 86.4)	531 (354, 966)	49.7	320
	High	1,208	43.8 (27.7, 69.4)	436 (229, 792)	38.4	194

Notes: Unit: adjusted for specific gravity ($\mu\text{g/L}$). Countries per Region(Teenagers): North: Norway; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S6 A: BBzP - Biomarker MBzP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,279	3.64 (2.22, 5.95)	28.6 (17.3, 47.6)	3.60	17.4	2,799	2.76 (1.71, 4.47)	27.9 (14.9, 45.6)	2.71	14.7
Sex	Female	1,139	3.38 (2.00, 5.71)	27.4 (15.6, 43.2)	3.47	15.6	1,404	2.72 (1.65, 4.47)	28.9 (14.3, 46.4)	2.60	14.6
	Male	1,137	3.92 (2.47, 6.24)	29.3 (18.7, 53.6)	3.78	19.1	1,395	2.81 (1.76, 4.49)	23.7 (14.8, 45.9)	2.80	14.7
Region	North	300	5.71 (5.05, 6.46)	33.5 (23.0, 51.3)	5.31	19.6	481	5.87 (5.32, 6.47)	37.2 (30.7, 43.0)	5.48	24.6
	South	609	4.12 (3.78, 4.49)	24.8 (19.9, 29.4)	4.15	15.8	546	2.12 (1.92, 2.35)	13.6 (10.5, 17.3)	2.19	8.13
	West	808	4.81 (4.41, 5.25)	36.4 (30.7, 43.2)	4.60	25.5	904	3.93 (3.61, 4.28)	37.1 (31.5, 45.5)	3.60	20.7
	East	562	1.67 (1.51, 1.84)	12.0 (9.41, 16.1)	1.69	7.54	868	1.49 (1.37, 1.61)	10.9 (8.51, 13.6)	1.52	6.20
Urbanisation	Cities	1,020	3.05 (1.69, 5.50)	25.8 (13.7, 44.0)	3.23	14.6	1,070	2.25 (1.45, 3.50)	20.5 (7.54, 48.6)	2.28	10.6
	Towns	710	3.72 (2.35, 5.90)	27.5 (15.1, 56.2)	3.60	17.1	883	3.10 (1.80, 5.35)	31.2 (15.3, 47.3)	2.90	15.1
	Rural areas	549	4.88 (2.83, 8.43)	34.0 (22.9, 64.9)	4.68	22.2	820	3.18 (1.65, 6.14)	33.1 (17.7, 60.3)	3.15	18.5
Education	Low	63	6.03 (4.35, 8.38)	29.3 (11.9, 184)	5.71	17.9	170	3.47 (1.58, 7.65)	44.9 (13.7, 106)	3.40	18.8
	Medium	632	3.87 (2.11, 7.09)	30.8 (18.4, 45.0)	3.92	20.5	1,019	2.66 (1.45, 4.88)	30.1 (14.4, 71.7)	2.47	15.8
	High	1,529	3.49 (2.18, 5.59)	27.1 (16.8, 42.7)	3.50	15.6	1,539	2.75 (1.75, 4.33)	24.0 (13.6, 36.7)	2.80	13.0

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S6 B: BBzP - Biomarker MBzP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,271	3.87 (2.36, 6.33)	28.5 (15.5, 56.8)	3.72	17.6	2,794	2.06 (1.26, 3.38)	18.0 (10.2, 33.3)	1.89	10.4
Sex	Female	1,136	3.71 (2.21, 6.24)	28.3 (13.2, 66.6)	3.64	16.3	1,403	2.09 (1.24, 3.51)	18.7 (9.92, 34.2)	1.84	10.6
	Male	1,132	4.05 (2.54, 6.45)	28.7 (17.2, 50.5)	3.82	18.0	1,391	2.04 (1.28, 3.26)	17.4 (10.00, 33.2)	1.93	9.98
Region	North	300	5.40 (4.84, 6.03)	25.7 (19.9, 42.1)	4.87	17.9	481	4.43 (4.07, 4.83)	22.9 (18.5, 25.8)	4.24	16.2
	South	609	4.47 (4.12, 4.86)	24.0 (19.4, 27.7)	4.41	16.1	546	1.66 (1.52, 1.81)	9.30 (6.79, 11.3)	1.59	5.04
	West	800	4.91 (4.51, 5.36)	41.8 (32.9, 48.1)	4.33	24.6	899	2.91 (2.69, 3.16)	25.8 (21.7, 33.3)	2.66	15.2
	East	562	1.97 (1.80, 2.15)	12.4 (9.73, 15.0)	1.84	7.61	868	1.09 (1.01, 1.17)	7.70 (6.08, 9.17)	1.04	4.48
Urbanisation	Cities	1,014	3.41 (1.93, 6.02)	26.8 (13.8, 48.8)	3.23	15.3	1,069	1.81 (1.23, 2.67)	13.8 (5.60, 50.7)	1.65	8.21
	Towns	708	3.76 (2.33, 6.05)	24.9 (14.7, 53.3)	3.58	16.0	881	2.28 (1.26, 4.13)	22.7 (11.1, 42.9)	2.14	12.0
	Rural areas	549	5.07 (2.77, 9.27)	31.6 (19.9, 61.2)	4.35	20.9	818	2.21 (1.09, 4.46)	19.8 (10.9, 35.7)	2.05	12.1
Education	Low	63	7.07 (5.01, 9.99)	24.9 (10.6, 245)	7.09	18.4	170	2.61 (1.27, 5.40)	21.7 (9.01, 90.8)	2.15	15.5
	Medium	627	4.35 (2.39, 7.93)	30.2 (14.8, 57.7)	4.03	19.8	1,017	1.88 (0.984, 3.60)	19.9 (9.18, 53.1)	1.62	10.7
	High	1,526	3.63 (2.29, 5.76)	27.5 (15.5, 52.5)	3.48	16.0	1,536	2.14 (1.38, 3.33)	16.2 (9.94, 25.2)	2.03	9.78

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S6 C: BBzP - Biomarker MBzP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,488	2.92 (2.08, 4.10)	23.1 (15.5, 37.1)	2.73	13.7
Sex	Female	1,240	2.94 (2.07, 4.16)	23.3 (14.4, 39.5)	2.72	14.1
	Male	1,248	2.91 (2.08, 4.07)	22.5 (16.5, 35.4)	2.74	13.4
Region	North	481	6.20 (5.66, 6.79)	34.3 (28.2, 41.3)	5.60	23.2
	South	546	2.77 (2.51, 3.05)	20.9 (14.6, 31.1)	2.66	11.2
	West	594	2.84 (2.61, 3.10)	21.8 (16.6, 35.8)	2.40	11.4
	East	867	2.03 (1.88, 2.19)	15.1 (11.6, 19.8)	1.98	8.93
Urbanisation	Cities	999	2.68 (2.02, 3.55)	19.4 (9.98, 41.1)	2.50	10.6
	Towns	789	3.25 (1.96, 5.41)	28.0 (15.6, 43.1)	2.88	15.5
	Rural areas	674	2.93 (1.93, 4.44)	25.6 (14.3, 49.7)	2.79	15.7
Education	Low	148	3.45 (1.84, 6.46)	34.8 (10.8, 70.5)	2.92	14.6
	Medium	887	2.72 (1.80, 4.11)	24.5 (13.5, 46.2)	2.40	14.1
	High	1,382	2.99 (2.15, 4.16)	22.0 (15.4, 33.8)	2.87	13.1

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S7 A: DiBP - Biomarker MiBP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,279	26.6 (20.1, 35.2)	122 (96.2, 172)	26.7	83.2	1,631	25.6 (20.5, 32.1)	112 (87.7, 141)	24.4	71.6
Sex	Female	1,124	27.2 (20.5, 36.0)	126 (95.9, 188)	27.3	90.1	838	25.5 (19.5, 33.3)	109 (83.2, 155)	24.7	71.1
	Male	1,152	26.1 (19.3, 35.1)	121 (83.4, 184)	26.0	77.8	793	25.8 (21.4, 31.2)	112 (78.7, 149)	24.3	71.5
Region	North	600	19.1 (17.7, 20.6)	97.6 (75.8, 116)	18.8	61.6	181	32.2 (28.3, 36.7)	217 (101, 315)	29.2	99.9
	South	609	30.0 (28.1, 32.1)	106 (95.3, 143)	31.0	76.8	546	21.9 (20.5, 23.5)	90.3 (69.8, 111)	21.9	58.7
	West	808	30.1 (28.3, 32.0)	128 (117, 160)	29.0	96.7	904	26.9 (25.4, 28.5)	113 (96.3, 140)	26.0	74.3
	East	262	29.3 (25.7, 33.3)	148 (110, 207)	29.3	106					
Urbanisation	Cities	1,020	23.0 (14.2, 37.4)	101 (67.2, 217)	23.3	73.7	579	23.9 (19.5, 29.2)	95.5 (74.2, 121)	23.5	66.2
	Towns	710	28.5 (23.9, 33.9)	129 (101, 189)	27.7	92.2	563	25.2 (20.8, 30.7)	109 (84.6, 133)	24.1	70.9
	Rural areas	549	31.7 (25.9, 38.9)	139 (115, 159)	30.6	98.0	488	28.5 (21.2, 38.2)	141 (89.9, 204)	26.6	77.6
Education	Low	104	21.2 (11.0, 40.9)	96.7 (53.2, 168)	23.3	63.6	127	28.4 (20.1, 40.1)	108 (86.3, 122)	30.0	86.3
	Medium	707	25.4 (16.5, 39.1)	121 (80.1, 234)	25.0	82.0	500	26.9 (20.4, 35.5)	122 (74.5, 214)	26.1	73.2
	High	1,413	27.5 (22.7, 33.4)	125 (104, 149)	27.4	85.2	969	24.5 (19.9, 30.1)	110 (82.8, 132)	23.0	69.4

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary. Countries per Region(Teenagers): North: Norway; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: -. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S7 B: DiBP - Biomarker MiBP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,271	29.1 (23.0, 36.7)	117 (83.8, 167)	27.3	79.1	1,626	19.5 (15.3, 24.9)	76.9 (57.4, 112)	17.9	52.1
Sex	Female	1,121	30.8 (24.9, 38.2)	119 (83.2, 166)	28.8	80.6	837	20.3 (15.3, 26.8)	76.9 (55.9, 141)	18.4	54.7
	Male	1,147	27.5 (21.3, 35.6)	113 (82.1, 170)	25.9	76.9	789	18.8 (15.3, 23.1)	76.4 (49.9, 129)	17.4	47.9
Region	North	600	22.4 (21.0, 23.8)	95.8 (76.6, 102)	21.1	61.6	181	25.4 (22.6, 28.5)	142 (70.6, 193)	23.5	70.1
	South	609	32.6 (30.8, 34.4)	102 (81.8, 120)	31.3	74.5	546	17.2 (16.2, 18.2)	57.8 (48.5, 75.1)	16.2	43.4
	West	800	30.9 (29.1, 32.8)	141 (124, 164)	27.6	92.0	899	20.0 (19.0, 21.1)	81.6 (70.4, 96.3)	18.4	55.8
	East	262	33.6 (30.6, 36.9)	116 (97.2, 166)	34.0	93.0					
Urbanisation	Cities	1,014	27.3 (19.1, 39.1)	102 (75.2, 172)	26.3	75.5	578	19.0 (15.9, 22.6)	76.8 (44.0, 145)	17.5	48.0
	Towns	708	28.8 (23.7, 34.9)	124 (83.7, 159)	27.2	76.8	561	19.4 (15.1, 24.8)	70.8 (57.6, 122)	17.5	52.1
	Rural areas	549	33.0 (25.3, 43.0)	144 (83.6, 236)	29.8	88.0	486	20.4 (14.5, 28.7)	86.4 (58.0, 123)	19.0	53.8
Education	Low	104	28.1 (17.0, 46.6)	98.8 (56.9, 117)	28.1	67.5	127	22.3 (17.9, 27.8)	84.7 (47.2, 148)	21.7	54.3
	Medium	702	29.9 (21.2, 42.3)	120 (81.4, 198)	27.9	82.5	498	19.7 (14.5, 27.0)	77.6 (51.4, 149)	18.1	51.9
	High	1,410	28.7 (23.7, 34.7)	119 (81.8, 166)	27.0	77.0	966	19.0 (15.1, 23.9)	75.2 (53.9, 136)	17.4	51.9

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary. Countries per Region(Teenagers): North: Norway; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: -. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S7 C: DiBP - Biomarker MiBP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,321	27.2 (24.4, 30.2)	122 (81.2, 164)	24.5	73.0
Sex	Female	674	27.3 (25.3, 29.3)	110 (88.9, 121)	24.5	73.4
	Male	647	27.0 (23.2, 31.6)	143 (66.7, 238)	24.4	71.8
Region	North	181	29.4 (26.1, 33.2)	156 (79.2, 235)	27.6	78.6
	South	546	28.6 (26.8, 30.5)	119 (90.2, 132)	26.0	78.3
	West	594	25.3 (23.7, 27.0)	111 (80.0, 149)	22.6	67.8
	East					
Urbanisation	Cities	508	27.7 (22.5, 34.1)	113 (65.3, 167)	24.7	74.0
	Towns	469	26.8 (24.5, 29.2)	139 (83.5, 198)	24.0	70.9
	Rural areas	343	27.0 (22.2, 32.7)	123 (71.6, 222)	24.3	71.6
Education	Low	105	31.5 (27.2, 36.5)	122 (67.6, 162)	28.9	85.6
	Medium	369	27.1 (24.8, 29.5)	106 (71.9, 153)	24.3	65.7
	High	812	26.4 (22.6, 30.7)	125 (77.7, 202)	24.0	72.6

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: -. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S8 A: DnBP - Biomarker MnBP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,579	21.1 (17.1, 26.1)	80.5 (65.4, 103)	21.4	59.8	2,499	24.8 (16.7, 36.9)	163 (59.0, 443)	24.8	93.1
Sex	Female	1,274	21.1 (16.5, 26.9)	80.4 (61.2, 115)	21.3	60.5	1,254	25.6 (15.8, 41.3)	195 (52.0, 550)	25.9	111
	Male	1,302	21.2 (17.5, 25.6)	81.2 (67.8, 98.7)	21.4	59.2	1,245	24.1 (17.6, 33.1)	140 (61.1, 294)	24.0	86.4
Region	North	600	17.7 (16.5, 19.0)	75.8 (63.6, 80.2)	17.6	54.7	181	28.8 (26.0, 31.8)	89.9 (65.8, 110)	26.6	65.6
	South	609	20.1 (18.9, 21.5)	75.7 (63.3, 85.7)	19.8	57.5	546	16.9 (15.7, 18.2)	69.0 (60.5, 78.3)	16.8	54.0
	West	808	22.9 (21.8, 24.2)	75.3 (66.0, 84.1)	23.3	56.0	904	19.2 (18.2, 20.2)	67.6 (57.9, 74.6)	18.8	51.4
	East	562	23.8 (21.9, 25.8)	99.3 (87.5, 119)	25.3	73.1	868	40.1 (36.4, 44.3)	268 (235, 288)	45.8	204
Urbanisation	Cities	1,320	20.1 (13.8, 29.2)	84.5 (60.4, 117)	20.7	61.2	959	21.0 (15.8, 27.8)	87.1 (69.8, 128)	23.8	63.1
	Towns	710	22.7 (19.3, 26.6)	80.9 (57.9, 142)	21.6	62.2	746	24.7 (13.4, 45.5)	210 (40.5, 970)	23.8	111
	Rural areas	549	21.8 (18.7, 25.3)	69.2 (47.6, 120)	22.5	55.2	768	30.3 (16.9, 54.2)	206 (83.8, 465)	28.6	133
Education	Low	104	16.9 (10.6, 27.1)	78.0 (35.3, 163)	17.6	60.2	147	24.8 (13.7, 44.8)	151 (46.5, 284)	23.0	117
	Medium	786	19.7 (15.0, 25.9)	74.6 (59.3, 115)	20.0	58.5	916	29.4 (15.4, 56.2)	224 (70.0, 515)	28.9	148
	High	1,634	22.1 (18.4, 26.4)	80.8 (65.4, 103)	22.3	60.5	1,365	21.6 (17.3, 26.9)	105 (67.8, 154)	22.4	68.4

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S8 B: DnBP - Biomarker MnBP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,571	23.4 (19.5, 28.1)	82.5 (61.4, 116)	22.4	58.8	2,494	18.7 (13.1, 26.6)	98.6 (43.1, 229)	18.1	60.3
Sex	Female	1,271	24.1 (19.7, 29.5)	83.6 (62.0, 129)	23.3	61.5	1,253	19.7 (12.9, 30.1)	109 (40.0, 420)	18.6	65.9
	Male	1,297	22.7 (19.3, 26.8)	79.8 (60.4, 105)	21.8	56.5	1,241	17.7 (13.2, 23.7)	78.1 (46.7, 149)	17.6	55.6
Region	North	600	20.8 (19.7, 21.9)	65.4 (57.5, 78.4)	20.3	49.8	181	22.7 (20.8, 24.8)	66.6 (53.0, 81.4)	21.3	52.7
	South	609	21.9 (20.6, 23.2)	77.1 (60.7, 92.9)	21.5	52.0	546	13.3 (12.5, 14.1)	45.8 (39.3, 52.5)	12.9	33.5
	West	800	23.6 (22.5, 24.8)	72.6 (62.4, 82.6)	23.3	56.0	899	14.3 (13.7, 14.9)	41.7 (37.8, 46.2)	13.7	34.0
	East	562	28.1 (26.2, 30.0)	117 (92.2, 133)	27.4	80.7	868	29.3 (26.7, 32.1)	150 (129, 172)	33.2	109
Urbanisation	Cities	1,314	24.0 (17.5, 32.8)	91.4 (58.6, 153)	22.8	62.8	958	16.9 (12.4, 23.2)	62.5 (51.0, 88.5)	17.3	47.1
	Towns	708	22.9 (18.8, 28.0)	76.1 (52.7, 114)	22.1	57.5	744	18.3 (10.5, 31.6)	109 (30.9, 929)	17.6	62.1
	Rural areas	549	22.6 (19.3, 26.5)	64.6 (49.0, 95.4)	22.0	52.0	766	21.2 (12.4, 36.3)	112 (52.2, 290)	19.8	77.3
Education	Low	104	22.5 (16.7, 30.1)	61.5 (34.7, 323)	21.6	54.4	147	18.4 (12.1, 28.1)	94.9 (33.3, 165)	16.9	61.0
	Medium	781	23.4 (19.0, 28.9)	84.8 (56.1, 122)	23.0	56.4	914	20.9 (11.8, 37.0)	123 (48.2, 427)	20.3	84.2
	High	1,631	23.4 (19.3, 28.5)	80.5 (59.6, 125)	22.5	59.6	1,362	16.9 (13.3, 21.6)	65.0 (49.1, 99.1)	16.8	47.5

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S8 C: DnBP - Biomarker MnBP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,188	31.0 (18.7, 51.2)	204 (69.2, 941)	28.5	127
Sex	Female	1,090	32.8 (18.0, 59.7)	260 (67.6, 1590)	29.2	148
	Male	1,098	29.3 (19.3, 44.4)	164 (87.8, 318)	27.7	112
Region	North	181	26.3 (24.0, 28.8)	75.5 (60.6, 87.6)	24.9	60.4
	South	546	22.1 (20.6, 23.7)	106 (73.5, 117)	20.3	64.5
	West	594	19.4 (18.4, 20.5)	57.2 (51.3, 64.7)	18.6	44.2
	East	867	54.7 (49.7, 60.3)	333 (285, 408)	62.2	235
Urbanisation	Cities	888	27.7 (17.4, 44.0)	136 (76.6, 285)	27.4	94.2
	Towns	652	29.5 (14.0, 62.4)	262 (46.8, 2569)	26.4	125
	Rural areas	622	37.6 (17.1, 82.4)	248 (89.5, 669)	34.5	168
Education	Low	125	29.2 (15.5, 54.8)	207 (44.7, 328)	24.5	131
	Medium	784	38.6 (17.4, 85.9)	303 (110, 959)	35.6	192
	High	1,208	26.3 (19.3, 35.8)	129 (72.5, 248)	25.2	87.7

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S9 A: DEHP - Biomarker MEHP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,280	1.21 (0.816, 1.80)	7.00 (5.28, 10.1)	1.36	4.71	2,799	1.77 (1.40, 2.23)	9.23 (6.00, 14.8)	1.77	6.00
Sex	Female	1,124	1.19 (0.810, 1.74)	6.61 (4.78, 10.4)	1.31	4.58	1,404	1.75 (1.36, 2.25)	9.90 (6.16, 16.7)	1.76	6.40
	Male	1,153	1.24 (0.814, 1.89)	7.43 (5.34, 10.4)	1.40	5.00	1,395	1.79 (1.42, 2.25)	8.38 (5.84, 14.1)	1.78	5.70
Region	North	600	0.850 (0.763, 0.946)	5.43 (4.37, 6.91)	0.930	3.46	481	1.49 (1.37, 1.61)	6.37 (5.53, 7.18)	1.51	4.54
	South	310	2.32 (2.07, 2.59)	14.6 (10.00, 17.6)	2.38	7.50	546	2.07 (1.91, 2.25)	10.4 (8.33, 14.0)	2.12	6.70
	West	808	1.08 (0.975, 1.20)	6.45 (5.35, 7.33)	1.40	4.37	904	1.42 (1.34, 1.51)	6.68 (5.88, 8.10)	1.40	4.65
	East	562	1.46 (1.35, 1.58)	6.35 (5.31, 7.59)	1.54	4.64	868	2.22 (2.07, 2.38)	12.6 (10.8, 13.8)	2.18	8.32
Urbanisation	Cities	1,091	1.10 (0.575, 2.10)	7.12 (3.80, 16.1)	1.20	4.35	1,070	1.75 (1.50, 2.04)	8.20 (5.45, 14.7)	1.79	5.62
	Towns	662	1.29 (0.994, 1.68)	7.50 (5.53, 9.89)	1.46	4.91	883	1.61 (1.13, 2.31)	8.51 (5.21, 16.3)	1.58	5.70
	Rural areas	527	1.37 (0.912, 2.07)	6.80 (6.03, 8.19)	1.54	5.11	820	1.97 (1.43, 2.71)	10.7 (5.89, 24.2)	1.98	7.15
Education	Low	78	0.837 (0.295, 2.37)	6.51 (2.50, 17.4)	1.10	5.12	170	2.01 (1.44, 2.80)	10.1 (5.90, 17.8)	2.14	8.00
	Medium	648	1.04 (0.610, 1.76)	6.10 (4.32, 9.43)	1.31	4.34	1,019	1.96 (1.39, 2.75)	10.8 (6.60, 19.5)	1.91	6.99
	High	1,502	1.31 (0.958, 1.79)	7.48 (5.24, 10.4)	1.39	4.71	1,539	1.61 (1.35, 1.91)	7.94 (5.51, 11.2)	1.60	5.21

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Greece, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S9 B: DEHP - Biomarker MEHP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,272	1.33 (0.927, 1.91)	7.01 (5.28, 10.8)	1.45	4.80	2,794	1.32 (1.07, 1.64)	6.07 (4.52, 8.26)	1.30	4.13
Sex	Female	1,121	1.34 (0.955, 1.88)	6.37 (5.02, 9.76)	1.47	4.55	1,403	1.35 (1.08, 1.69)	6.13 (4.38, 8.66)	1.36	4.19
	Male	1,148	1.33 (0.897, 1.96)	7.72 (5.69, 10.7)	1.44	5.06	1,391	1.30 (1.03, 1.64)	5.97 (4.32, 8.60)	1.25	4.01
Region	North	600	0.997 (0.905, 1.10)	5.06 (3.98, 7.13)	1.06	3.33	481	1.12 (1.04, 1.21)	4.73 (3.73, 5.27)	1.12	3.20
	South	310	2.29 (2.06, 2.56)	11.3 (9.16, 13.0)	2.32	7.49	546	1.62 (1.50, 1.75)	7.90 (5.53, 9.59)	1.61	4.94
	West	800	1.11 (1.01, 1.23)	6.63 (5.84, 7.63)	1.32	4.50	899	1.05 (0.994, 1.12)	4.19 (3.83, 4.99)	1.04	3.13
	East	562	1.73 (1.61, 1.85)	6.71 (5.71, 8.12)	1.70	5.17	868	1.62 (1.52, 1.73)	7.46 (6.49, 8.53)	1.67	5.37
Urbanisation	Cities	1,085	1.32 (0.773, 2.24)	7.72 (4.56, 12.6)	1.44	4.91	1,069	1.41 (1.19, 1.66)	5.93 (4.38, 8.89)	1.39	4.19
	Towns	660	1.30 (0.966, 1.74)	6.83 (4.47, 12.6)	1.36	4.47	881	1.19 (0.862, 1.63)	5.81 (3.64, 7.94)	1.14	3.66
	Rural areas	527	1.41 (0.883, 2.25)	6.67 (5.89, 9.38)	1.60	4.84	818	1.37 (1.03, 1.83)	6.48 (4.20, 11.0)	1.35	4.37
Education	Low	78	1.07 (0.512, 2.24)	7.13 (2.57, 23.6)	1.19	4.63	170	1.51 (1.20, 1.91)	6.58 (5.68, 7.22)	1.59	4.97
	Medium	643	1.23 (0.745, 2.01)	6.52 (4.72, 10.2)	1.50	4.68	1,017	1.39 (1.03, 1.86)	6.83 (4.76, 9.60)	1.38	4.38
	High	1,499	1.39 (1.02, 1.89)	7.50 (5.06, 11.6)	1.42	4.83	1,536	1.25 (1.03, 1.52)	5.56 (3.97, 7.94)	1.23	3.77

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S9 C: DEHP - Biomarker MEHP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,488	2.15 (1.56, 2.98)	11.4 (6.69, 21.4)	2.06	7.06
Sex	Female	1,240	2.19 (1.55, 3.08)	11.9 (6.48, 27.3)	2.09	7.22
	Male	1,248	2.12 (1.52, 2.95)	10.9 (6.74, 19.7)	2.01	6.97
Region	North	481	1.57 (1.46, 1.69)	5.75 (5.10, 6.33)	1.57	4.31
	South	546	2.70 (2.49, 2.93)	16.1 (12.0, 20.7)	2.47	8.63
	West	594	1.38 (1.29, 1.47)	5.19 (4.19, 6.90)	1.36	3.60
	East	867	3.02 (2.82, 3.23)	14.9 (12.4, 18.6)	2.89	9.96
Urbanisation	Cities	999	2.29 (1.79, 2.92)	11.3 (6.10, 28.7)	2.19	6.89
	Towns	789	1.86 (1.19, 2.90)	10.0 (5.21, 19.3)	1.72	6.49
	Rural areas	674	2.32 (1.42, 3.78)	13.2 (6.75, 28.6)	2.27	8.24
Education	Low	148	2.51 (1.80, 3.48)	12.0 (5.46, 19.7)	2.40	8.80
	Medium	887	2.43 (1.53, 3.85)	13.0 (7.27, 26.4)	2.34	8.29
	High	1,382	1.93 (1.46, 2.56)	9.68 (5.08, 22.1)	1.87	6.06

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S10 A: DEHP - Biomarker OH-MEHP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,579	11.2 (8.47, 14.7)	46.3 (37.8, 56.0)	11.2	32.9	2,799	10.4 (7.35, 14.8)	54.7 (24.7, 159)	9.99	34.7
Sex	Female	1,274	11.0 (8.37, 14.5)	42.2 (37.0, 53.9)	10.9	32.7	1,404	10.1 (6.85, 14.9)	60.7 (21.6, 211)	9.71	34.9
	Male	1,302	11.3 (8.49, 15.1)	50.6 (40.5, 55.9)	11.4	33.2	1,395	10.8 (7.82, 14.9)	49.4 (29.1, 103)	10.2	34.7
Region	North	600	7.32 (6.73, 7.96)	35.1 (26.6, 44.0)	6.85	21.2	481	8.01 (7.45, 8.61)	28.0 (24.1, 34.6)	7.68	21.3
	South	609	15.6 (14.6, 16.6)	56.7 (51.1, 66.7)	15.4	40.3	546	9.31 (8.66, 10.0)	38.4 (31.4, 43.8)	9.48	26.9
	West	808	12.3 (11.7, 13.0)	45.4 (39.0, 50.7)	12.0	33.2	904	8.48 (8.00, 8.99)	35.2 (28.7, 40.7)	8.50	23.6
	East	562	10.6 (9.86, 11.4)	41.3 (33.3, 48.1)	11.2	27.9	868	16.1 (15.0, 17.3)	98.1 (83.3, 110)	15.3	61.6
Urbanisation	Cities	1,320	10.2 (6.41, 16.2)	43.8 (32.4, 59.1)	10.6	31.1	1,070	9.35 (8.09, 10.8)	35.3 (30.6, 41.5)	9.42	25.8
	Towns	710	11.7 (9.89, 13.7)	50.2 (40.6, 60.7)	11.1	35.1	883	9.43 (5.65, 15.8)	59.6 (22.3, 171)	8.67	34.8
	Rural areas	549	13.2 (11.6, 15.0)	46.8 (35.1, 59.0)	13.1	33.5	820	13.2 (8.14, 21.5)	84.6 (27.7, 561)	12.6	47.1
Education	Low	104	8.95 (4.21, 19.0)	52.6 (24.9, 82.1)	9.50	35.6	170	11.2 (7.19, 17.3)	69.4 (23.6, 118)	10.7	51.5
	Medium	786	10.8 (6.99, 16.8)	47.5 (33.7, 70.9)	10.9	32.8	1,019	12.3 (7.14, 21.3)	84.7 (32.2, 239)	11.4	47.6
	High	1,634	11.4 (9.57, 13.7)	44.2 (38.6, 52.4)	11.5	32.9	1,539	9.13 (7.41, 11.2)	38.2 (27.3, 56.5)	8.91	27.1

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S10 B: DEHP - Biomarker OH-MEHP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,571	12.4 (9.69, 15.8)	45.1 (35.9, 58.8)	11.9	31.9	2,794	7.81 (5.66, 10.8)	32.9 (18.6, 82.8)	7.28	22.3
Sex	Female	1,271	12.6 (9.90, 16.1)	45.0 (34.0, 60.5)	12.5	32.0	1,403	7.76 (5.49, 11.0)	36.5 (16.4, 105)	7.16	22.7
	Male	1,297	12.1 (9.43, 15.6)	45.4 (36.5, 59.2)	11.5	31.9	1,391	7.87 (5.78, 10.7)	29.7 (20.0, 60.9)	7.35	21.6
Region	North	600	8.58 (7.99, 9.23)	30.8 (25.7, 34.9)	8.07	22.2	481	6.05 (5.68, 6.44)	19.2 (15.5, 23.9)	5.67	14.0
	South	609	16.9 (16.0, 17.9)	54.2 (46.2, 66.5)	16.0	41.1	546	7.29 (6.88, 7.73)	22.4 (19.1, 24.1)	7.08	16.6
	West	800	12.7 (12.1, 13.4)	46.4 (40.3, 53.4)	11.7	32.2	899	6.30 (5.98, 6.64)	23.4 (20.2, 26.8)	5.92	16.7
	East	562	12.5 (11.8, 13.3)	38.1 (34.1, 46.0)	12.5	29.0	868	11.7 (11.0, 12.5)	54.7 (48.6, 62.3)	11.2	36.0
Urbanisation	Cities	1,314	12.2 (8.36, 17.7)	45.4 (33.9, 65.2)	12.3	31.9	1,069	7.53 (6.48, 8.75)	25.8 (19.2, 33.2)	7.13	18.3
	Towns	708	11.8 (9.48, 14.7)	50.1 (32.5, 71.1)	10.6	31.6	881	6.94 (4.33, 11.1)	31.5 (14.9, 123)	6.43	21.9
	Rural areas	549	13.7 (11.2, 16.8)	42.0 (34.5, 46.6)	13.0	32.7	818	9.22 (5.87, 14.5)	47.5 (19.0, 403)	8.58	27.5
Education	Low	104	11.9 (6.63, 21.3)	45.9 (25.1, 145)	11.5	35.3	170	8.40 (6.21, 11.4)	43.3 (17.0, 66.9)	7.38	23.8
	Medium	781	12.9 (8.84, 18.7)	47.6 (32.0, 77.7)	13.1	33.6	1,017	8.75 (5.34, 14.3)	47.4 (22.5, 172)	8.02	27.9
	High	1,631	12.2 (10.1, 14.7)	43.6 (35.5, 53.6)	11.5	31.3	1,536	7.11 (5.66, 8.93)	24.1 (19.2, 34.6)	6.75	17.9

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S10 C: DEHP - Biomarker OH-MEHP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,488	12.4 (8.03, 19.2)	69.4 (26.2, 268)	11.1	42.6
Sex	Female	1,240	12.4 (7.68, 20.0)	77.7 (23.7, 471)	11.0	43.2
	Male	1,248	12.5 (8.29, 18.7)	62.2 (31.0, 145)	11.2	41.1
Region	North	481	8.46 (7.97, 8.98)	25.6 (21.0, 33.2)	7.80	18.6
	South	546	12.1 (11.4, 13.0)	48.3 (38.5, 64.0)	11.4	31.4
	West	594	7.56 (7.16, 8.00)	23.0 (20.2, 27.1)	7.33	18.0
	East	867	21.9 (20.5, 23.4)	114 (99.1, 132)	20.0	74.4
Urbanisation	Cities	999	12.0 (9.28, 15.5)	44.0 (31.7, 71.0)	11.4	31.4
	Towns	789	10.7 (5.82, 19.7)	68.8 (18.9, 607)	9.10	44.2
	Rural areas	674	15.3 (7.68, 30.6)	103 (32.1, 981)	13.6	62.8
Education	Low	148	13.5 (8.60, 21.2)	83.3 (22.1, 141)	12.5	57.3
	Medium	887	15.0 (7.47, 30.1)	101 (39.5, 689)	13.4	61.6
	High	1,382	10.7 (8.15, 14.2)	45.5 (27.3, 93.2)	9.84	30.8

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S11 A: DEHP - Biomarker cx-MEPP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,579	14.4 (11.0, 18.8)	54.5 (46.2, 69.5)	14.3	40.8	2,799	10.6 (8.43, 13.4)	40.6 (32.8, 52.3)	10.9	29.5
Sex	Female	1,274	14.2 (10.7, 18.8)	53.5 (45.0, 69.4)	14.1	41.8	1,404	10.5 (8.43, 13.1)	39.3 (31.9, 51.8)	10.7	29.5
	Male	1,302	14.5 (11.1, 19.0)	54.9 (46.4, 69.7)	14.4	39.7	1,395	10.8 (8.40, 13.8)	41.5 (32.0, 54.0)	11.0	29.5
Region	North	600	11.9 (10.9, 12.9)	54.9 (42.3, 74.4)	11.5	34.0	481	9.08 (8.35, 9.86)	38.5 (32.6, 42.8)	9.48	27.8
	South	609	18.6 (17.4, 19.8)	64.5 (55.8, 76.4)	18.7	51.1	546	11.4 (10.6, 12.2)	45.3 (36.2, 53.9)	11.4	31.4
	West	808	14.8 (14.1, 15.7)	51.6 (46.1, 55.5)	14.6	39.1	904	12.9 (12.3, 13.6)	44.0 (37.5, 52.4)	13.1	31.9
	East	562	12.7 (11.8, 13.6)	45.3 (39.3, 49.1)	13.5	35.1	868	9.08 (8.57, 9.63)	35.1 (30.6, 39.0)	9.33	25.5
Urbanisation	Cities	1,320	13.1 (8.70, 19.6)	51.4 (38.4, 76.5)	13.0	38.5	1,070	10.6 (8.72, 12.8)	40.8 (32.6, 49.3)	10.6	28.8
	Towns	710	15.1 (12.0, 19.1)	59.8 (48.0, 84.2)	14.6	45.6	883	10.2 (7.46, 13.9)	34.2 (28.6, 49.8)	10.9	27.5
	Rural areas	549	16.8 (14.1, 20.1)	53.4 (47.6, 66.0)	16.9	40.8	820	11.3 (8.54, 14.8)	45.7 (34.0, 65.0)	11.6	33.1
Education	Low	104	11.8 (6.11, 22.6)	52.7 (37.7, 86.5)	12.1	40.7	170	12.2 (10.2, 14.6)	48.8 (35.3, 69.8)	12.1	34.0
	Medium	786	13.4 (9.09, 19.7)	54.2 (42.3, 71.2)	13.1	41.0	1,019	10.3 (8.10, 13.2)	41.1 (32.8, 55.4)	10.5	28.6
	High	1,634	15.0 (12.2, 18.4)	53.9 (46.2, 69.5)	14.8	40.6	1,539	10.6 (8.19, 13.7)	38.5 (30.6, 52.4)	11.0	29.5

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S11 B: DEHP - Biomarker cx-MEPP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,571	15.9 (12.6, 20.1)	55.3 (45.3, 67.5)	15.4	40.8	2,794	7.96 (6.04, 10.5)	28.8 (20.9, 39.0)	7.89	20.1
Sex	Female	1,271	16.2 (12.8, 20.7)	54.6 (43.5, 66.2)	16.0	40.9	1,403	8.08 (6.20, 10.5)	28.9 (19.9, 45.9)	8.13	20.3
	Male	1,297	15.6 (12.3, 19.8)	56.9 (46.5, 69.8)	14.8	40.5	1,391	7.83 (5.86, 10.5)	28.2 (21.3, 36.4)	7.72	19.9
Region	North	600	13.9 (13.0, 15.0)	46.7 (41.2, 63.0)	12.9	34.2	481	6.86 (6.36, 7.40)	26.5 (21.7, 29.1)	6.73	18.9
	South	609	20.2 (19.1, 21.3)	61.5 (55.1, 78.0)	19.8	48.6	546	8.91 (8.42, 9.43)	26.4 (22.4, 29.0)	8.55	19.8
	West	800	15.3 (14.5, 16.1)	55.4 (50.4, 61.5)	14.8	39.8	899	9.59 (9.14, 10.1)	31.1 (28.9, 36.8)	9.35	23.3
	East	562	15.0 (14.1, 15.8)	48.5 (40.6, 56.9)	15.0	34.5	868	6.63 (6.27, 7.01)	26.3 (21.1, 31.6)	6.15	17.9
Urbanisation	Cities	1,314	15.6 (11.3, 21.6)	54.7 (43.3, 69.8)	15.2	39.8	1,069	8.50 (6.66, 10.9)	30.6 (20.7, 41.8)	8.38	20.4
	Towns	708	15.3 (11.8, 19.9)	59.3 (44.3, 83.6)	14.2	43.0	881	7.49 (5.26, 10.7)	26.2 (19.8, 29.9)	7.77	18.9
	Rural areas	549	17.5 (14.0, 21.9)	52.2 (43.1, 60.3)	17.2	40.4	818	7.84 (5.64, 10.9)	29.1 (21.6, 42.2)	7.68	21.6
Education	Low	104	15.6 (9.45, 25.8)	54.5 (34.2, 133)	15.0	43.8	170	9.17 (7.23, 11.6)	25.8 (21.9, 38.0)	8.95	21.3
	Medium	781	15.9 (11.4, 22.2)	55.3 (40.8, 74.8)	16.1	41.3	1,017	7.32 (5.41, 9.91)	29.1 (18.4, 45.8)	6.98	19.5
	High	1,631	15.9 (13.1, 19.4)	54.6 (47.0, 63.9)	15.3	39.9	1,536	8.27 (6.20, 11.0)	28.7 (21.5, 38.0)	8.40	20.4

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S11 C: DEHP - Biomarker cx-MEPP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,488	12.2 (9.59, 15.6)	43.9 (32.3, 59.7)	12.2	30.6
Sex	Female	1,240	12.4 (10.1, 15.3)	43.0 (34.0, 53.6)	12.4	30.6
	Male	1,248	12.1 (9.10, 16.0)	44.4 (29.3, 72.1)	12.0	30.4
Region	North	481	9.59 (8.95, 10.3)	32.9 (27.5, 39.8)	9.10	25.3
	South	546	14.8 (13.9, 15.8)	54.2 (43.0, 69.3)	13.9	37.2
	West	594	12.3 (11.7, 12.9)	32.5 (28.9, 36.4)	13.0	26.2
	East	867	12.4 (11.7, 13.1)	52.1 (45.0, 57.8)	11.7	35.2
Urbanisation	Cities	999	13.4 (9.87, 18.2)	50.0 (35.2, 92.1)	12.6	36.7
	Towns	789	11.3 (8.15, 15.7)	35.1 (29.2, 44.5)	11.8	27.1
	Rural areas	674	11.8 (9.96, 14.0)	40.4 (31.0, 54.0)	11.8	28.3
Education	Low	148	14.4 (11.9, 17.4)	47.4 (38.3, 55.7)	14.4	32.3
	Medium	887	11.7 (9.44, 14.6)	45.8 (31.3, 58.1)	11.7	29.3
	High	1,382	12.3 (9.24, 16.3)	43.0 (29.9, 70.3)	12.2	30.6

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S12 A: DEHP - Biomarker oxo-MEHP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,577	7.41 (5.53, 9.94)	29.6 (26.0, 35.9)	7.43	22.4	2,798	6.11 (4.98, 7.50)	24.7 (20.9, 30.8)	6.11	17.9
Sex	Female	1,274	7.31 (5.48, 9.75)	27.8 (23.3, 36.4)	7.42	22.0	1,403	5.99 (4.78, 7.50)	24.6 (20.6, 32.4)	6.04	18.3
	Male	1,300	7.52 (5.53, 10.2)	31.7 (27.0, 38.6)	7.46	22.8	1,395	6.24 (5.15, 7.56)	24.9 (20.0, 31.2)	6.19	17.2
Region	North	600	4.74 (4.37, 5.15)	19.9 (15.7, 28.1)	4.58	12.8	481	5.59 (5.20, 6.00)	21.1 (17.0, 23.7)	5.16	13.8
	South	609	9.55 (8.96, 10.2)	33.1 (29.9, 39.1)	9.73	25.8	546	6.44 (6.00, 6.93)	25.8 (22.1, 28.9)	6.56	19.1
	West	806	9.08 (8.58, 9.60)	34.5 (28.8, 39.2)	8.82	24.4	903	5.82 (5.47, 6.19)	26.5 (21.8, 30.5)	5.80	18.4
	East	562	6.78 (6.28, 7.33)	26.5 (23.9, 27.7)	7.28	20.1	868	6.54 (6.18, 6.93)	25.6 (22.6, 27.9)	6.43	18.4
Urbanisation	Cities	1,319	6.69 (4.30, 10.4)	26.9 (22.0, 34.8)	6.94	20.1	1,070	6.25 (5.38, 7.26)	24.5 (19.6, 30.7)	6.40	17.2
	Towns	710	7.46 (5.91, 9.42)	31.6 (25.6, 51.7)	7.30	22.9	883	5.34 (4.00, 7.13)	23.2 (18.5, 31.0)	5.21	16.4
	Rural areas	548	9.42 (7.53, 11.8)	33.1 (26.9, 46.2)	9.49	25.6	819	6.85 (5.57, 8.43)	27.1 (21.8, 37.0)	6.78	19.0
Education	Low	104	5.94 (2.84, 12.4)	35.6 (16.2, 69.8)	5.98	21.6	170	6.94 (5.42, 8.88)	36.6 (23.0, 46.2)	7.13	20.4
	Medium	785	7.09 (4.61, 10.9)	29.3 (23.2, 40.0)	7.14	23.0	1,018	6.44 (5.20, 7.97)	25.9 (22.7, 32.2)	6.50	19.1
	High	1,633	7.68 (6.19, 9.52)	29.5 (26.6, 33.7)	7.64	22.0	1,539	5.79 (4.66, 7.20)	23.4 (18.2, 30.2)	5.80	16.2

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S12 B: DEHP - Biomarker oxo-MEHP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,569	8.21 (6.30, 10.7)	29.6 (24.1, 41.4)	7.85	22.1	2,793	4.58 (3.64, 5.75)	16.5 (12.8, 23.6)	4.36	11.8
Sex	Female	1,271	8.37 (6.50, 10.8)	28.9 (22.8, 41.0)	8.10	21.3	1,402	4.61 (3.65, 5.82)	16.9 (12.2, 26.4)	4.39	11.9
	Male	1,295	8.06 (6.08, 10.7)	30.3 (24.6, 43.2)	7.59	22.4	1,391	4.54 (3.59, 5.75)	16.3 (12.2, 23.3)	4.35	11.5
Region	North	600	5.56 (5.18, 5.97)	19.5 (16.8, 23.8)	5.21	13.5	481	4.22 (3.97, 4.49)	13.3 (10.9, 17.1)	3.87	9.56
	South	609	10.4 (9.81, 11.0)	32.5 (28.6, 40.0)	9.94	24.8	546	5.05 (4.76, 5.35)	14.8 (12.7, 16.8)	4.84	11.4
	West	798	9.35 (8.86, 9.87)	34.0 (29.6, 38.8)	8.80	24.7	898	4.32 (4.08, 4.57)	17.9 (15.2, 21.6)	4.19	12.7
	East	562	8.01 (7.51, 8.56)	28.6 (23.2, 32.1)	8.02	21.0	868	4.77 (4.54, 5.02)	17.5 (15.4, 21.1)	4.43	12.3
Urbanisation	Cities	1,313	7.98 (5.57, 11.4)	28.5 (21.2, 43.6)	7.82	20.9	1,069	5.03 (4.12, 6.13)	17.4 (12.9, 26.4)	4.69	12.0
	Towns	708	7.55 (5.76, 9.90)	34.4 (21.9, 51.1)	6.86	21.3	881	3.93 (2.94, 5.25)	14.6 (9.65, 23.0)	3.77	9.82
	Rural areas	548	9.78 (7.34, 13.0)	30.8 (25.7, 37.3)	9.41	24.3	817	4.77 (3.77, 6.03)	17.6 (13.4, 24.5)	4.45	12.6
Education	Low	104	7.89 (4.54, 13.7)	28.3 (14.0, 106)	8.13	24.5	170	5.22 (4.34, 6.28)	16.8 (13.3, 25.4)	5.16	12.9
	Medium	780	8.41 (5.88, 12.0)	30.1 (23.8, 41.4)	8.60	22.5	1,016	4.56 (3.59, 5.79)	17.8 (13.6, 25.3)	4.37	12.5
	High	1,630	8.16 (6.44, 10.3)	29.6 (24.1, 41.2)	7.64	21.4	1,536	4.51 (3.53, 5.78)	15.4 (11.9, 24.0)	4.29	11.3

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S12 C: DEHP - Biomarker oxo-MEHP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,487	7.04 (5.52, 8.96)	26.6 (20.2, 41.0)	6.69	19.3
Sex	Female	1,239	7.09 (5.52, 9.10)	26.8 (20.5, 40.3)	6.76	19.3
	Male	1,248	6.98 (5.43, 8.99)	26.4 (18.7, 47.2)	6.59	19.1
Region	North	481	5.90 (5.55, 6.27)	19.5 (15.4, 22.8)	5.21	13.5
	South	546	8.40 (7.87, 8.96)	33.6 (25.4, 40.6)	7.98	22.1
	West	593	4.88 (4.60, 5.17)	16.3 (13.8, 19.0)	4.62	12.3
	East	867	8.92 (8.45, 9.40)	33.1 (27.8, 41.0)	8.37	24.6
Urbanisation	Cities	999	7.93 (5.86, 10.7)	29.5 (20.7, 51.6)	7.57	21.5
	Towns	789	5.85 (4.41, 7.77)	22.7 (14.9, 32.5)	5.44	15.4
	Rural areas	673	7.29 (5.82, 9.12)	26.5 (19.4, 45.4)	6.84	19.4
Education	Low	148	8.14 (6.75, 9.81)	31.7 (26.8, 39.3)	7.82	22.3
	Medium	886	7.39 (5.69, 9.60)	27.6 (20.5, 48.7)	7.04	20.2
	High	1,382	6.67 (5.05, 8.81)	25.9 (17.1, 44.8)	6.21	18.6

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S13 A: DEHP - Σ of OH-MEHP, cx-MEPP and oxo-MEHP, volume based ($\mu\text{g/L}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,577	33.6 (25.7, 43.9)	127 (110, 152)	33.5	95.8	2,798	28.8 (23.3, 35.6)	116 (82.4, 181)	28.4	82.2
Sex	Female	1,274	33.2 (25.3, 43.6)	121 (107, 151)	33.0	96.7	1,403	28.3 (22.4, 35.9)	119 (76.1, 215)	27.8	83.4
	Male	1,300	34.0 (25.9, 44.6)	138 (116, 159)	33.8	93.9	1,395	29.3 (24.1, 35.7)	109 (84.6, 154)	28.7	81.7
Region	North	600	24.3 (22.4, 26.4)	107 (80.4, 150)	22.5	65.1	481	23.3 (21.7, 25.1)	85.8 (72.7, 99.6)	23.5	62.7
	South	609	44.9 (42.2, 47.7)	156 (129, 165)	44.4	115	546	27.6 (25.7, 29.6)	108 (92.6, 123)	28.1	78.6
	West	806	36.6 (34.7, 38.7)	125 (112, 143)	35.0	95.8	903	28.2 (26.8, 29.7)	103 (86.2, 121)	27.2	74.1
	East	562	30.6 (28.5, 32.8)	106 (95.7, 129)	32.8	81.7	868	34.1 (32.2, 36.2)	147 (127, 165)	32.7	103
Urbanisation	Cities	1,319	30.5 (19.9, 46.9)	119 (94.5, 160)	30.8	89.3	1,070	26.8 (23.5, 30.6)	97.5 (81.1, 124)	27.1	71.9
	Towns	710	35.0 (29.0, 42.1)	140 (119, 186)	33.1	103	883	27.0 (20.6, 35.3)	108 (68.0, 190)	25.8	77.9
	Rural areas	548	40.1 (34.7, 46.3)	127 (108, 161)	39.4	102	819	33.8 (25.8, 44.4)	138 (95.5, 237)	32.7	103
Education	Low	104	27.2 (13.5, 54.7)	138 (84.4, 219)	27.3	95.0	170	31.9 (24.9, 41.0)	154 (122, 194)	31.5	109
	Medium	785	31.9 (21.1, 48.2)	127 (102, 167)	32.1	98.1	1,018	31.5 (23.3, 42.7)	143 (92.7, 226)	30.4	95.0
	High	1,633	34.8 (29.1, 41.6)	125 (109, 148)	34.3	94.8	1,539	26.6 (22.5, 31.5)	98.4 (78.1, 122)	26.6	71.3

Notes: Unit: volume based ($\mu\text{g/L}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S13 B: DEHP - Σ of OH-MEHP, cx-MEPP and oxo-MEHP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,569	37.2 (29.4, 47.0)	128 (105, 162)	35.5	93.6	2,793	21.6 (17.5, 26.5)	73.8 (55.4, 111)	20.2	52.8
Sex	Female	1,271	38.0 (30.1, 48.0)	128 (95.7, 162)	36.7	91.4	1,402	21.8 (17.6, 27.1)	79.4 (53.0, 124)	20.2	54.3
	Male	1,295	36.4 (28.6, 46.3)	125 (108, 167)	34.1	95.8	1,391	21.3 (17.3, 26.3)	69.6 (57.0, 91.1)	20.4	51.5
Region	North	600	28.5 (26.6, 30.5)	93.2 (80.5, 113)	26.5	70.8	481	17.6 (16.5, 18.8)	60.2 (46.4, 68.4)	16.8	40.9
	South	609	48.7 (46.2, 51.4)	150 (128, 175)	46.9	111	546	21.6 (20.4, 22.8)	60.0 (51.7, 67.7)	20.8	45.4
	West	798	37.8 (35.9, 39.8)	131 (119, 153)	35.2	98.7	898	20.9 (20.0, 21.9)	71.4 (64.4, 84.4)	19.4	51.9
	East	562	36.1 (34.1, 38.2)	110 (99.5, 128)	35.8	84.8	868	24.9 (23.6, 26.2)	94.6 (80.6, 116)	23.2	64.1
Urbanisation	Cities	1,313	36.5 (25.9, 51.4)	125 (94.9, 176)	35.8	90.5	1,069	21.6 (18.2, 25.6)	73.7 (52.2, 104)	20.2	50.0
	Towns	708	35.4 (28.2, 44.4)	141 (97.2, 206)	32.0	95.1	881	19.9 (15.5, 25.5)	65.6 (47.5, 98.5)	18.9	49.5
	Rural areas	548	41.6 (33.7, 51.4)	120 (108, 130)	39.8	97.6	817	23.6 (18.1, 30.6)	83.2 (61.8, 128)	21.9	61.3
Education	Low	104	36.1 (21.3, 61.4)	115 (81.5, 352)	33.6	100	170	24.0 (21.2, 27.3)	84.3 (72.2, 92.3)	22.4	55.4
	Medium	780	37.9 (26.6, 53.9)	135 (102, 184)	38.5	97.8	1,016	22.3 (17.1, 29.2)	83.3 (62.1, 130)	20.7	60.6
	High	1,630	37.0 (30.8, 44.3)	124 (104, 156)	34.1	91.4	1,536	20.7 (17.0, 25.3)	65.4 (51.4, 92.4)	19.7	48.2

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S13 C: DEHP - sum of OH-MEHP, cx-MEPP and oxo-MEHP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,487	33.8 (25.8, 44.2)	129 (85.4, 245)	30.6	92.3
Sex	Female	1,239	34.2 (25.6, 45.8)	138 (72.9, 385)	30.7	94.6
	Male	1,248	33.3 (25.6, 43.3)	124 (85.4, 197)	30.4	87.4
Region	North	481	24.7 (23.2, 26.2)	77.7 (62.5, 90.8)	23.0	55.5
	South	546	35.9 (33.8, 38.2)	133 (103, 183)	34.0	90.7
	West	593	25.9 (24.7, 27.1)	69.3 (62.4, 77.1)	25.2	54.3
	East	867	46.5 (44.0, 49.1)	184 (153, 206)	42.2	126
Urbanisation	Cities	999	34.2 (26.4, 44.4)	124 (86.2, 198)	31.7	85.7
	Towns	789	30.4 (22.0, 42.0)	112 (61.2, 360)	27.5	79.4
	Rural areas	673	37.4 (24.7, 56.8)	167 (89.7, 425)	33.7	104
Education	Low	148	38.2 (30.7, 47.7)	148 (112, 220)	36.5	114
	Medium	886	37.2 (24.6, 56.4)	152 (93.6, 412)	33.7	104
	High	1,382	31.0 (25.0, 38.5)	107 (74.2, 186)	28.5	77.7

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S14 A: DiDP - Biomarker OH-MiDP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,418	1.12 (0.759, 1.67)	5.88 (4.36, 8.77)	1.16	3.89	2,062	1.22 (0.876, 1.69)	6.03 (4.61, 8.17)	1.22	4.00
Sex	Female	1,191	1.08 (0.723, 1.62)	5.62 (4.18, 8.02)	1.11	3.79	1,043	1.18 (0.826, 1.70)	5.63 (3.98, 10.7)	1.21	3.90
	Male	1,224	1.17 (0.792, 1.72)	6.11 (4.35, 9.37)	1.20	3.99	1,019	1.25 (0.923, 1.69)	6.34 (5.32, 7.54)	1.24	4.00
Region	North	600	0.981 (0.884, 1.09)	5.81 (4.46, 7.13)	1.09	3.76	481	1.36 (1.25, 1.49)	6.16 (4.71, 9.11)	1.33	4.18
	South	448	1.18 (1.08, 1.29)	5.33 (4.33, 7.76)	1.11	3.81	396	1.44 (1.31, 1.57)	6.25 (5.28, 7.98)	1.54	4.40
	West	808	1.48 (1.38, 1.59)	7.13 (5.90, 10.1)	1.50	4.62	904	1.22 (1.14, 1.30)	6.40 (5.33, 7.40)	1.22	4.17
	East	562	0.843 (0.778, 0.914)	4.00 (3.10, 4.58)	0.867	2.69	281	0.792 (0.709, 0.884)	2.82 (2.43, 4.05)	0.815	2.23
Urbanisation	Cities	1,231	0.853 (0.557, 1.31)	4.34 (3.23, 6.41)	0.867	3.01	891	1.13 (0.815, 1.56)	5.80 (4.08, 8.38)	1.10	3.51
	Towns	678	1.34 (0.976, 1.83)	5.88 (4.46, 11.3)	1.38	4.21	671	1.13 (0.728, 1.77)	6.32 (3.95, 15.5)	1.10	4.00
	Rural areas	509	1.75 (1.49, 2.05)	8.47 (5.48, 15.1)	1.70	5.60	499	1.53 (1.10, 2.13)	6.27 (4.14, 12.9)	1.57	4.44
Education	Low	104	0.791 (0.319, 1.96)	7.77 (3.78, 18.2)	0.934	4.37	149	1.25 (0.966, 1.62)	4.64 (3.99, 4.99)	1.41	3.40
	Medium	764	0.946 (0.588, 1.52)	4.78 (3.30, 12.6)	0.950	3.44	638	1.18 (0.828, 1.70)	5.78 (4.12, 8.20)	1.21	3.99
	High	1,499	1.26 (0.894, 1.77)	6.20 (4.82, 7.83)	1.27	4.04	1,245	1.22 (0.861, 1.73)	6.41 (4.56, 9.21)	1.19	4.00

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S14 B: DiDP - Biomarker OH-MiDP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,410	1.26 (0.920, 1.71)	5.93 (4.16, 8.86)	1.20	3.72	2,057	0.945 (0.671, 1.33)	4.66 (3.27, 6.60)	0.922	2.74
Sex	Female	1,188	1.25 (0.922, 1.70)	5.60 (3.88, 9.33)	1.22	3.88	1,042	0.949 (0.654, 1.38)	4.67 (2.80, 7.59)	0.933	2.81
	Male	1,219	1.26 (0.917, 1.73)	6.22 (4.40, 8.88)	1.18	3.67	1,015	0.942 (0.686, 1.29)	4.59 (3.34, 5.88)	0.914	2.71
Region	North	600	1.15 (1.05, 1.26)	5.47 (4.24, 7.82)	1.26	3.38	481	1.03 (0.953, 1.11)	4.42 (3.02, 5.72)	1.00	2.56
	South	448	1.33 (1.24, 1.43)	5.59 (4.05, 6.51)	1.24	3.60	396	1.18 (1.09, 1.26)	4.73 (3.56, 5.65)	1.10	2.85
	West	800	1.53 (1.43, 1.63)	7.66 (6.40, 9.48)	1.44	4.84	899	0.902 (0.845, 0.963)	4.98 (4.17, 5.69)	0.855	3.24
	East	562	0.996 (0.930, 1.07)	4.23 (3.12, 5.16)	0.934	2.61	281	0.697 (0.629, 0.773)	2.53 (1.90, 4.17)	0.673	1.75
Urbanisation	Cities	1,225	1.04 (0.750, 1.43)	4.82 (3.68, 6.36)	1.02	3.03	890	0.937 (0.685, 1.28)	4.70 (3.26, 6.66)	0.897	2.62
	Towns	676	1.35 (1.02, 1.79)	5.99 (4.09, 12.5)	1.30	3.89	669	0.862 (0.533, 1.39)	4.43 (2.63, 9.61)	0.818	2.72
	Rural areas	509	1.81 (1.49, 2.21)	7.72 (5.04, 17.4)	1.66	5.45	497	1.09 (0.747, 1.58)	4.68 (2.87, 8.28)	1.10	2.95
Education	Low	104	1.05 (0.524, 2.10)	6.39 (3.03, 29.5)	1.04	4.43	149	0.988 (0.804, 1.21)	3.18 (2.70, 3.87)	0.983	2.56
	Medium	759	1.13 (0.778, 1.64)	5.11 (2.86, 12.3)	1.11	3.22	636	0.892 (0.602, 1.32)	4.54 (2.99, 7.62)	0.864	2.82
	High	1,496	1.34 (1.01, 1.79)	6.13 (4.86, 7.91)	1.26	4.05	1,242	0.962 (0.675, 1.37)	5.13 (3.15, 6.98)	0.931	2.85

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S14 C: DiDP - Biomarker OH-MiDP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,752	1.32 (1.02, 1.71)	5.51 (4.61, 7.29)	1.28	3.72
Sex	Female	879	1.31 (0.992, 1.73)	5.42 (4.22, 8.22)	1.29	3.46
	Male	873	1.33 (1.04, 1.70)	5.82 (4.64, 7.30)	1.26	3.93
Region	North	481	1.44 (1.33, 1.55)	5.42 (4.51, 7.53)	1.34	3.63
	South	396	1.74 (1.62, 1.88)	6.55 (4.93, 8.28)	1.68	4.20
	West	594	1.04 (0.966, 1.12)	4.62 (3.89, 5.80)	1.00	2.88
	East	281	1.28 (1.14, 1.43)	5.73 (4.52, 10.8)	1.15	3.98
Urbanisation	Cities	820	1.40 (1.15, 1.69)	5.93 (5.38, 6.65)	1.31	3.95
	Towns	577	1.18 (0.798, 1.74)	5.43 (3.19, 18.0)	1.08	3.42
	Rural areas	354	1.40 (1.08, 1.80)	5.11 (3.83, 6.70)	1.42	3.69
Education	Low	127	1.45 (1.21, 1.75)	4.55 (3.18, 5.45)	1.53	3.91
	Medium	507	1.25 (0.916, 1.70)	5.60 (3.84, 11.2)	1.17	3.77
	High	1,088	1.33 (1.03, 1.72)	5.71 (4.89, 7.31)	1.29	3.70

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway, Sweden; South: Slovenia, Spain; West: Belgium, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S15 A: DiDP - Biomarker cx-MiDP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,557	0.746 (0.533, 1.04)	3.05 (2.10, 6.67)	0.744	2.22	1,881	0.728 (0.490, 1.08)	2.89 (1.90, 4.41)	0.800	1.90
Sex	Female	770	0.741 (0.534, 1.03)	3.05 (2.20, 5.91)	0.730	2.21	939	0.743 (0.512, 1.08)	3.05 (1.86, 5.02)	0.830	1.92
	Male	784	0.751 (0.529, 1.07)	3.08 (2.00, 7.80)	0.749	2.22	942	0.713 (0.467, 1.09)	2.75 (1.87, 4.03)	0.780	1.89
Region	North	300	0.464 (0.418, 0.515)	1.91 (1.38, 2.43)	0.509	1.26	300	0.370 (0.332, 0.411)	1.73 (1.30, 2.56)	0.360	1.03
	South	149	0.784 (0.701, 0.878)	2.62 (2.00, 2.97)	0.760	2.07	396	0.870 (0.808, 0.938)	3.10 (2.46, 3.78)	0.900	2.14
	West	808	0.972 (0.913, 1.04)	4.29 (3.34, 5.50)	0.940	2.70	904	0.979 (0.932, 1.03)	3.15 (2.80, 3.61)	1.01	2.19
	East	300	0.574 (0.524, 0.628)	2.26 (1.66, 3.40)	0.540	1.55	281	0.450 (0.413, 0.491)	1.43 (1.00, 1.96)	0.420	0.967
Urbanisation	Cities	752	0.572 (0.451, 0.727)	2.28 (1.85, 2.67)	0.600	1.62	847	0.636 (0.409, 0.987)	2.70 (1.82, 3.99)	0.640	1.86
	Towns	411	0.937 (0.714, 1.23)	3.90 (2.49, 6.50)	0.910	2.61	589	0.812 (0.482, 1.37)	3.14 (1.61, 9.46)	0.955	1.95
	Rural areas	394	0.976 (0.738, 1.29)	4.11 (1.40, 25.9)	0.920	2.72	445	0.815 (0.587, 1.13)	2.91 (1.60, 6.69)	0.870	1.91
Education	Low	75	0.648 (0.301, 1.39)	5.03 (1.40, 25.2)	0.602	2.45	149	0.772 (0.584, 1.02)	3.12 (2.25, 3.68)	0.855	2.24
	Medium	520	0.693 (0.457, 1.05)	2.74 (1.48, 9.92)	0.710	1.85	627	0.743 (0.504, 1.09)	2.72 (1.93, 4.16)	0.795	1.82
	High	949	0.786 (0.588, 1.05)	3.31 (2.32, 6.25)	0.780	2.35	1,090	0.710 (0.465, 1.09)	2.90 (1.73, 5.27)	0.800	1.87

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark; South: Slovenia; West: Belgium, France, Germany, The Netherlands; East: Poland. Countries per Region(Teenagers): North: Sweden; South: Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S15 B: DiDP - Biomarker cx-MiDP, creatinine adjusted ($\mu\text{g/g crt}$)

Supplementary to „Current exposure to phthalates and DINCH in European children and adolescents – Results from the HBM4EU Aligned Studies 2014 to 2021“,
Vogel et al., 2023

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,549	0.844 (0.644, 1.11)	3.76 (2.42, 6.04)	0.788	2.34	1,876	0.566 (0.376, 0.851)	2.39 (1.69, 3.25)	0.557	1.57
Sex	Female	767	0.863 (0.657, 1.13)	3.68 (2.23, 6.53)	0.834	2.31	938	0.597 (0.402, 0.886)	2.78 (1.78, 4.49)	0.591	1.78
	Male	779	0.826 (0.625, 1.09)	3.81 (2.43, 6.74)	0.770	2.35	938	0.537 (0.351, 0.821)	1.99 (1.52, 2.74)	0.536	1.45
Region	North	300	0.674 (0.616, 0.739)	2.74 (1.89, 3.72)	0.672	1.64	300	0.272 (0.247, 0.300)	0.964 (0.844, 1.57)	0.253	0.758
	South	149	0.793 (0.720, 0.874)	2.12 (1.63, 3.02)	0.730	1.64	396	0.714 (0.668, 0.762)	2.53 (1.96, 2.83)	0.678	1.67
	West	800	0.998 (0.938, 1.06)	4.39 (3.86, 5.34)	0.924	3.03	899	0.729 (0.692, 0.767)	2.80 (2.40, 3.27)	0.710	1.88
	East	300	0.695 (0.638, 0.758)	2.73 (1.94, 4.78)	0.700	1.65	281	0.397 (0.364, 0.432)	1.57 (1.01, 1.94)	0.367	0.881
Urbanisation	Cities	746	0.720 (0.635, 0.815)	2.77 (2.16, 3.83)	0.722	1.87	846	0.527 (0.338, 0.823)	2.04 (1.46, 3.00)	0.508	1.46
	Towns	409	0.951 (0.662, 1.37)	4.20 (2.38, 7.35)	0.903	2.94	587	0.612 (0.354, 1.06)	2.72 (1.79, 4.47)	0.633	1.85
	Rural areas	394	1.01 (0.691, 1.47)	4.11 (1.51, 20.4)	0.886	2.89	443	0.584 (0.386, 0.883)	2.34 (1.29, 5.33)	0.578	1.51
Education	Low	75	0.842 (0.529, 1.34)	4.62 (1.26, 20.2)	0.849	2.36	149	0.610 (0.450, 0.828)	2.55 (1.65, 3.29)	0.565	1.86
	Medium	515	0.818 (0.606, 1.10)	3.02 (1.52, 9.19)	0.775	2.00	625	0.559 (0.375, 0.834)	2.40 (1.46, 3.51)	0.545	1.49
	High	946	0.863 (0.652, 1.14)	3.99 (2.63, 6.62)	0.804	2.55	1,087	0.561 (0.363, 0.866)	2.30 (1.53, 4.02)	0.567	1.54

Supplementary to „Current exposure to phthalates and DINCH in European children and adolescents – Results from the HBM4EU Aligned Studies 2014 to 2021“, Vogel et al., 2023

Children			Teenagers						
N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark; South: Slovenia; West: Belgium, France, Germany, The Netherlands; East: Poland. Countries per Region(Teenagers): North: Sweden; South: Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S15C: DiDP - Biomarker cx-MiDP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,571	0.829 (0.539, 1.28)	2.98 (2.45, 3.88)	0.857	2.14
Sex	Female	775	0.868 (0.580, 1.30)	3.11 (2.74, 4.15)	0.884	2.29
	Male	796	0.792 (0.500, 1.26)	2.82 (2.11, 4.10)	0.835	2.06
Region	North	300	0.426 (0.387, 0.469)	1.77 (1.25, 2.79)	0.388	1.19
	South	396	1.06 (0.994, 1.13)	2.98 (2.66, 4.01)	1.04	2.32
	West	594	1.05 (0.992, 1.11)	3.01 (2.70, 3.78)	1.09	2.30
	East	281	0.726 (0.654, 0.805)	3.35 (2.27, 5.15)	0.632	2.11
Urbanisation	Cities	776	0.809 (0.545, 1.20)	3.05 (2.33, 4.18)	0.800	2.15
	Towns	495	0.901 (0.467, 1.74)	3.41 (2.49, 4.60)	1.03	2.28
	Rural areas	300	0.768 (0.548, 1.08)	2.59 (1.37, 6.71)	0.768	1.67
Education	Low	127	0.926 (0.659, 1.30)	3.07 (1.95, 6.74)	0.896	2.48
	Medium	496	0.830 (0.528, 1.30)	2.91 (1.94, 5.81)	0.858	2.14
	High	933	0.810 (0.524, 1.25)	2.92 (2.49, 3.64)	0.840	2.08

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Sweden; South: Slovenia, Spain; West: Belgium, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S16 A: DiDP - Σ of OH-MiDP and cx-MiDP, volume based ($\mu\text{g/L}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,557	1.91 (1.26, 2.90)	8.61 (5.93, 18.8)	1.87	5.96	1,881	2.02 (1.54, 2.63)	8.80 (6.41, 12.5)	1.94	5.63
Sex	Female	770	1.87 (1.24, 2.80)	8.62 (5.80, 17.5)	1.85	5.82	939	2.00 (1.53, 2.61)	8.54 (5.64, 16.5)	1.95	5.55
	Male	784	1.96 (1.27, 3.00)	8.58 (5.90, 20.1)	1.89	6.11	942	2.03 (1.55, 2.68)	9.58 (6.50, 12.2)	1.94	5.79
Region	North	300	0.966 (0.864, 1.08)	4.35 (3.17, 5.00)	1.11	2.75	300	1.50 (1.34, 1.68)	8.37 (5.40, 15.8)	1.33	4.37
	South	149	2.52 (2.21, 2.87)	8.85 (6.29, 11.5)	2.65	6.34	396	2.38 (2.19, 2.58)	10.1 (7.16, 11.2)	2.52	6.28
	West	808	2.55 (2.39, 2.72)	11.5 (8.86, 16.8)	2.50	7.20	904	2.38 (2.26, 2.51)	9.42 (7.95, 11.2)	2.13	6.50
	East	300	1.52 (1.38, 1.67)	5.95 (4.72, 9.53)	1.51	4.32	281	1.29 (1.17, 1.42)	4.42 (3.47, 5.36)	1.25	3.13
Urbanisation	Cities	752	1.38 (0.943, 2.01)	5.60 (4.30, 9.84)	1.43	4.33	847	1.82 (1.28, 2.58)	8.53 (5.51, 13.3)	1.73	5.16
	Towns	411	2.36 (1.82, 3.05)	9.59 (6.28, 26.8)	2.28	6.69	589	2.06 (1.68, 2.54)	9.17 (5.26, 45.9)	1.84	6.22
	Rural areas	394	2.87 (2.39, 3.45)	12.9 (5.99, 50.5)	2.77	8.57	445	2.39 (1.80, 3.16)	8.54 (5.34, 19.1)	2.34	6.00
Education	Low	75	1.56 (0.596, 4.11)	12.3 (5.24, 45.5)	1.61	7.56	149	2.17 (1.86, 2.53)	6.93 (5.60, 16.5)	2.36	6.10
	Medium	520	1.75 (1.01, 3.01)	7.10 (4.31, 31.8)	1.71	5.40	627	2.06 (1.58, 2.69)	8.49 (6.27, 11.9)	2.00	5.81
	High	949	2.04 (1.48, 2.82)	8.97 (6.70, 14.4)	1.96	6.10	1,090	1.96 (1.47, 2.62)	9.87 (6.26, 13.8)	1.84	5.49

Notes: Unit: volume based ($\mu\text{g/L}$). Countries per Region(Children): North: Denmark; South: Slovenia; West: Belgium, France, Germany, The Netherlands; East: Poland. Countries per Region(Teenagers): North: Sweden; South: Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S16 B: DiDP - Σ of OH-MiDP and cx-MiDP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,549	2.16 (1.56, 2.99)	9.84 (5.99, 18.6)	2.04	6.18	1,876	1.57 (1.18, 2.07)	7.07 (4.48, 10.6)	1.45	4.22
Sex	Female	767	2.17 (1.59, 2.98)	9.62 (5.15, 22.5)	2.11	6.01	938	1.60 (1.20, 2.14)	7.55 (4.35, 12.5)	1.52	4.31
	Male	779	2.15 (1.53, 3.03)	9.85 (6.82, 15.9)	1.97	6.31	938	1.53 (1.16, 2.01)	6.51 (4.43, 8.75)	1.40	4.01
Region	North	300	1.40 (1.28, 1.54)	5.04 (4.01, 7.88)	1.40	3.32	300	1.11 (1.01, 1.22)	5.75 (3.09, 9.17)	0.955	2.58
	South	149	2.55 (2.29, 2.84)	8.04 (6.24, 9.25)	2.43	6.45	396	1.95 (1.82, 2.08)	7.29 (5.27, 8.54)	1.85	4.30
	West	800	2.62 (2.47, 2.79)	12.5 (10.2, 15.1)	2.45	7.74	899	1.77 (1.68, 1.86)	7.50 (6.53, 8.93)	1.59	4.81
	East	300	1.84 (1.68, 2.01)	6.69 (5.79, 11.5)	1.74	5.05	281	1.13 (1.04, 1.24)	3.48 (2.74, 6.36)	1.07	2.58
Urbanisation	Cities	746	1.73 (1.36, 2.21)	6.69 (5.68, 8.18)	1.68	4.66	846	1.51 (1.07, 2.13)	7.08 (4.30, 9.90)	1.39	4.04
	Towns	409	2.39 (1.75, 3.26)	12.9 (6.43, 22.7)	2.24	7.61	587	1.55 (1.20, 2.01)	7.49 (3.69, 19.6)	1.40	4.24
	Rural areas	394	2.96 (2.22, 3.94)	12.0 (5.42, 66.3)	2.68	8.09	443	1.70 (1.19, 2.44)	6.63 (3.55, 16.3)	1.64	4.44
Education	Low	75	2.03 (1.05, 3.92)	11.3 (4.64, 77.6)	2.04	8.03	149	1.72 (1.52, 1.94)	5.27 (3.84, 11.0)	1.67	4.05
	Medium	515	2.06 (1.37, 3.10)	8.51 (3.78, 28.4)	1.97	5.56	625	1.55 (1.16, 2.08)	6.80 (4.78, 10.4)	1.44	4.32
	High	946	2.24 (1.68, 3.00)	10.4 (6.69, 16.4)	2.07	6.63	1,087	1.55 (1.15, 2.09)	7.61 (4.48, 10.2)	1.42	4.21

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark; South: Slovenia; West: Belgium, France, Germany, The Netherlands; East: Poland. Countries per Region(Teenagers): North: Sweden; South: Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S16 C: DiDP - Σ of OH-MiDP and cx-MiDP, adjusted for specific gravity ($\mu\text{g/L}$)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,571	2.26 (1.86, 2.74)	8.45 (6.61, 11.3)	2.11	5.60
Sex	Female	775	2.29 (1.95, 2.70)	8.08 (6.18, 13.2)	2.18	5.54
	Male	796	2.23 (1.78, 2.80)	8.73 (6.14, 12.5)	2.03	5.61
Region	North	300	1.73 (1.58, 1.91)	7.42 (5.46, 16.7)	1.41	4.25
	South	396	2.89 (2.71, 3.08)	9.37 (7.38, 12.6)	2.80	6.15
	West	594	2.29 (2.17, 2.42)	7.52 (5.99, 8.59)	2.09	4.93
	East	281	2.07 (1.87, 2.30)	8.93 (6.86, 15.3)	1.82	6.18
Urbanisation	Cities	776	2.30 (1.79, 2.94)	8.96 (8.73, 10.1)	2.17	5.96
	Towns	495	2.24 (1.84, 2.72)	8.43 (4.34, 57.4)	1.99	5.54
	Rural areas	300	2.22 (1.96, 2.51)	6.40 (5.33, 8.16)	2.17	4.68
Education	Low	127	2.57 (2.37, 2.79)	7.14 (6.05, 12.8)	2.46	6.15
	Medium	496	2.25 (1.82, 2.78)	8.43 (5.64, 15.6)	2.10	5.53
	High	933	2.22 (1.82, 2.70)	8.88 (6.50, 12.8)	2.04	5.39

Notes: Unit: adjusted for specific gravity ($\mu\text{g/L}$). Countries per Region(Teenagers): North: Sweden; South: Slovenia, Spain; West: Belgium, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S17 A: DiNP - Biomarker OH-MiNP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,280	3.77 (2.25, 6.29)	22.6 (15.1, 44.7)	3.90	14.6	2,212	4.63 (3.58, 5.99)	27.3 (18.5, 38.1)	4.49	15.7
Sex	Female	1,124	3.74 (2.18, 6.40)	22.7 (15.3, 46.9)	3.91	14.9	1,118	4.50 (3.42, 5.92)	29.2 (18.1, 42.1)	4.31	15.7
	Male	1,153	3.79 (2.31, 6.20)	22.1 (14.0, 40.5)	3.86	14.2	1,094	4.76 (3.69, 6.14)	25.2 (18.6, 32.5)	4.60	15.7
Region	North	600	3.82 (3.46, 4.22)	26.7 (21.5, 35.6)	3.53	16.6	481	5.08 (4.59, 5.62)	35.3 (28.9, 43.2)	4.77	24.0
	South	310	3.81 (3.40, 4.28)	18.6 (11.6, 27.9)	3.95	10.7	546	3.99 (3.66, 4.34)	18.8 (16.1, 27.2)	4.14	12.9
	West	808	5.42 (5.00, 5.88)	27.4 (22.9, 38.9)	5.83	18.6	904	5.57 (5.23, 5.93)	27.4 (22.1, 33.5)	5.20	17.2
	East	562	2.18 (1.98, 2.40)	11.1 (8.55, 12.6)	2.49	7.50	281	2.91 (2.61, 3.24)	10.9 (8.52, 18.5)	2.80	8.03
Urbanisation	Cities	1,091	2.95 (1.93, 4.51)	16.0 (9.90, 33.2)	2.93	10.7	971	4.10 (3.09, 5.44)	27.0 (14.1, 49.0)	3.99	13.6
	Towns	662	3.84 (1.84, 8.01)	22.1 (15.0, 57.8)	4.67	15.5	700	4.91 (3.93, 6.13)	27.8 (17.8, 50.7)	4.51	16.5
	Rural areas	527	6.10 (4.32, 8.59)	35.8 (19.6, 58.0)	5.99	21.7	540	5.32 (3.72, 7.62)	25.8 (17.1, 41.1)	5.34	17.0
Education	Low	78	3.50 (1.02, 12.0)	34.7 (9.42, 176)	3.12	20.3	150	4.74 (3.59, 6.26)	24.6 (13.8, 41.9)	5.29	15.3
	Medium	648	3.18 (1.60, 6.32)	23.0 (12.7, 40.2)	3.29	13.6	672	4.69 (3.55, 6.18)	28.2 (17.9, 41.0)	4.54	15.6
	High	1,502	4.07 (2.56, 6.46)	21.6 (14.5, 49.0)	4.16	14.5	1,355	4.57 (3.48, 6.00)	27.8 (17.0, 44.5)	4.35	15.7

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Greece, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S17 B: DiNP - Biomarker OH-MiNP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,272	4.12 (2.65, 6.41)	21.1 (13.6, 45.1)	4.15	13.5	2,207	3.57 (2.77, 4.59)	19.7 (11.5, 36.0)	3.28	10.6
Sex	Female	1,121	4.20 (2.66, 6.63)	22.7 (12.8, 49.7)	4.21	12.8	1,117	3.59 (2.74, 4.70)	20.8 (11.9, 43.8)	3.25	11.0
	Male	1,148	4.04 (2.63, 6.22)	19.9 (13.6, 41.5)	4.01	13.9	1,090	3.55 (2.79, 4.50)	18.2 (11.2, 26.5)	3.33	10.1
Region	North	600	4.48 (4.13, 4.87)	23.6 (18.9, 33.0)	4.09	14.1	481	3.84 (3.50, 4.20)	22.5 (18.2, 27.7)	3.32	14.8
	South	310	3.78 (3.40, 4.20)	14.6 (11.5, 20.8)	3.81	10.7	546	3.12 (2.90, 3.36)	12.9 (9.93, 15.0)	2.95	8.49
	West	800	5.58 (5.15, 6.03)	26.8 (22.8, 37.7)	5.76	17.9	899	4.13 (3.89, 4.38)	23.6 (18.4, 30.1)	3.80	11.2
	East	562	2.58 (2.38, 2.79)	10.7 (8.65, 12.8)	2.59	7.30	281	2.56 (2.32, 2.82)	9.72 (6.84, 17.4)	2.41	6.39
Urbanisation	Cities	1,085	3.52 (2.55, 4.86)	16.5 (10.2, 33.6)	3.22	10.5	970	3.35 (2.63, 4.26)	18.7 (9.66, 42.4)	2.98	9.73
	Towns	660	3.84 (1.95, 7.55)	20.4 (12.3, 63.8)	4.39	13.2	698	3.71 (2.85, 4.83)	19.7 (10.5, 51.4)	3.41	11.0
	Rural areas	527	6.24 (4.37, 8.93)	30.6 (17.4, 52.6)	5.81	18.7	538	3.81 (2.51, 5.76)	20.3 (9.92, 38.7)	3.60	11.2
Education	Low	78	4.48 (1.76, 11.4)	53.1 (12.3, 109)	4.21	22.7	150	3.75 (3.18, 4.41)	16.9 (7.71, 34.8)	3.60	10.1
	Medium	643	3.75 (2.11, 6.65)	20.5 (12.5, 42.3)	3.81	13.1	670	3.49 (2.59, 4.69)	20.8 (10.9, 42.0)	3.22	10.6
	High	1,499	4.30 (2.84, 6.50)	21.0 (13.3, 48.4)	4.24	13.6	1,352	3.59 (2.75, 4.67)	19.7 (11.0, 38.7)	3.26	10.6

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S17 C: DiNP - Biomarker OH-MiNP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,902	5.15 (4.66, 5.70)	27.3 (17.9, 40.7)	4.65	14.7
Sex	Female	954	5.12 (4.55, 5.75)	27.6 (18.4, 40.7)	4.62	15.0
	Male	948	5.18 (4.63, 5.81)	25.9 (15.1, 45.1)	4.67	14.4
Region	North	481	5.37 (4.90, 5.87)	32.6 (26.3, 40.7)	4.56	19.2
	South	546	5.19 (4.81, 5.61)	25.4 (18.4, 35.2)	4.76	15.0
	West	594	5.17 (4.86, 5.50)	17.9 (14.4, 24.7)	4.72	11.8
	East	281	4.68 (4.19, 5.24)	27.3 (13.4, 53.3)	4.23	12.2
Urbanisation	Cities	900	5.21 (4.66, 5.82)	31.0 (15.6, 60.4)	4.62	15.0
	Towns	606	5.27 (4.59, 6.04)	24.6 (16.1, 40.4)	4.73	15.2
	Rural areas	395	4.85 (4.00, 5.88)	24.2 (12.3, 43.3)	4.57	12.3
Education	Low	128	5.60 (4.62, 6.79)	26.0 (12.6, 49.0)	5.42	15.5
	Medium	541	5.05 (4.52, 5.64)	24.8 (14.4, 59.9)	4.48	13.3
	High	1,198	5.13 (4.56, 5.79)	27.5 (16.5, 43.4)	4.62	14.8

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S18 A: DiNP - Biomarker cx-MiNP, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,980	4.34 (2.43, 7.77)	27.0 (15.5, 55.5)	4.70	16.8	2,618	5.44 (3.65, 8.13)	34.8 (21.7, 52.9)	5.16	19.6
Sex	Female	984	4.28 (2.35, 7.79)	28.2 (16.9, 60.6)	4.65	17.3	1,300	5.44 (3.49, 8.49)	39.1 (22.3, 61.7)	5.13	20.4
	Male	993	4.40 (2.49, 7.76)	24.6 (13.4, 54.8)	4.77	16.0	1,318	5.45 (3.79, 7.83)	30.1 (20.2, 45.4)	5.17	18.5
Region	North	300	3.94 (3.55, 4.39)	16.8 (13.3, 23.9)	3.88	11.7	300	6.72 (5.92, 7.61)	46.8 (37.6, 90.6)	5.74	25.6
	South	310	7.24 (6.59, 7.96)	30.5 (23.0, 38.6)	6.55	20.0	546	6.45 (5.97, 6.97)	28.5 (21.7, 35.6)	6.27	18.1
	West	808	4.53 (4.07, 5.04)	36.1 (28.3, 48.2)	5.80	21.3	904	4.71 (4.35, 5.10)	36.4 (27.6, 44.8)	4.74	20.4
	East	562	3.25 (3.00, 3.51)	13.1 (11.0, 17.2)	3.37	9.60	868	5.29 (4.96, 5.64)	27.6 (22.0, 35.8)	4.87	16.8
Urbanisation	Cities	1,005	4.36 (3.27, 5.81)	21.2 (13.8, 33.9)	4.29	13.6	1,026	5.43 (3.94, 7.48)	32.6 (19.0, 59.1)	4.96	18.1
	Towns	528	2.73 (0.617, 12.0)	24.4 (10.7, 100)	4.07	16.0	801	4.82 (2.48, 9.36)	34.8 (17.7, 103)	4.60	17.9
	Rural areas	447	7.48 (5.24, 10.7)	36.6 (19.0, 81.1)	6.94	24.7	766	6.20 (4.17, 9.22)	33.7 (21.4, 53.0)	5.89	21.7
Education	Low	78	5.49 (2.45, 12.3)	50.1 (14.3, 229)	4.65	31.9	170	6.41 (4.33, 9.50)	36.2 (20.2, 75.0)	7.60	21.0
	Medium	634	4.51 (2.73, 7.44)	27.4 (13.2, 74.1)	4.90	16.7	1,008	5.73 (3.97, 8.27)	35.8 (25.6, 44.7)	5.30	21.6
	High	1,229	4.22 (2.13, 8.34)	24.5 (15.2, 53.7)	4.65	16.1	1,384	5.08 (3.26, 7.90)	30.8 (16.9, 76.1)	4.77	17.9

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark; South: Greece, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S18 B: DiNP - Biomarker cx-MiNP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,972	4.85 (2.74, 8.59)	26.4 (15.5, 72.4)	5.09	17.1	2,613	4.06 (2.69, 6.12)	23.0 (14.2, 46.8)	3.71	13.7
Sex	Female	981	4.95 (2.76, 8.87)	27.5 (15.8, 73.6)	5.21	17.7	1,299	4.18 (2.66, 6.58)	25.4 (13.9, 63.7)	4.00	14.8
	Male	988	4.76 (2.71, 8.34)	23.8 (14.2, 70.6)	4.94	16.2	1,314	3.93 (2.71, 5.71)	21.3 (14.0, 38.4)	3.54	12.4
Region	North	300	5.74 (5.24, 6.28)	20.1 (16.4, 25.8)	5.44	14.9	300	4.95 (4.41, 5.55)	31.3 (23.4, 51.1)	3.73	19.7
	South	310	7.17 (6.58, 7.82)	30.4 (20.2, 37.1)	6.25	17.6	546	5.05 (4.71, 5.42)	18.7 (15.5, 21.8)	4.71	13.5
	West	800	4.62 (4.16, 5.13)	39.0 (27.8, 55.0)	5.56	21.1	899	3.48 (3.22, 3.76)	31.0 (22.6, 41.6)	3.11	14.3
	East	562	3.84 (3.59, 4.09)	15.0 (11.6, 18.2)	3.58	10.3	868	3.86 (3.64, 4.09)	16.9 (13.8, 21.4)	3.48	10.7
Urbanisation	Cities	999	5.26 (4.03, 6.86)	22.4 (15.5, 38.6)	4.95	15.4	1,025	4.34 (3.22, 5.87)	22.4 (14.2, 52.9)	3.94	13.7
	Towns	526	2.78 (0.662, 11.7)	23.2 (10.3, 99.4)	3.74	14.1	799	3.50 (1.81, 6.76)	23.2 (12.2, 68.7)	3.23	13.2
	Rural areas	447	7.82 (5.01, 12.2)	33.1 (17.5, 103)	6.97	22.5	764	4.32 (2.79, 6.70)	23.3 (12.1, 48.3)	4.02	13.7
Education	Low	78	7.03 (4.15, 11.9)	55.2 (20.1, 118)	5.93	27.2	170	4.83 (3.35, 6.95)	23.7 (16.7, 48.0)	4.73	16.7
	Medium	629	5.33 (3.39, 8.36)	25.1 (13.1, 77.0)	5.25	17.2	1,006	4.05 (2.76, 5.93)	23.0 (15.3, 41.6)	3.73	13.9
	High	1,226	4.56 (2.32, 8.96)	26.0 (15.4, 65.6)	4.96	16.7	1,381	3.94 (2.51, 6.20)	22.9 (11.8, 65.1)	3.59	12.8

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark; South: Greece, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S18C: DiNP - Biomarker cx-MiNP, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,307	6.12 (4.16, 9.01)	33.1 (23.4, 49.6)	5.65	20.5
Sex	Female	1,136	6.27 (4.09, 9.63)	35.4 (25.5, 55.5)	5.88	23.1
	Male	1,171	5.97 (4.18, 8.53)	30.5 (20.1, 48.3)	5.52	18.0
Region	North	300	7.74 (6.91, 8.68)	49.5 (37.9, 82.6)	6.14	29.7
	South	546	8.41 (7.82, 9.04)	35.9 (27.9, 42.6)	7.61	23.3
	West	594	3.20 (2.98, 3.43)	14.4 (11.1, 22.9)	2.90	9.22
	East	867	7.21 (6.78, 7.66)	34.5 (27.2, 44.7)	6.52	21.3
Urbanisation	Cities	955	6.83 (5.46, 8.54)	35.3 (23.0, 76.7)	6.02	21.4
	Towns	707	5.21 (2.59, 10.5)	31.9 (18.1, 65.8)	4.90	20.7
	Rural areas	620	6.19 (4.38, 8.75)	29.9 (20.2, 46.1)	5.90	19.0
Education	Low	148	7.32 (4.99, 10.7)	28.8 (21.7, 65.6)	7.33	22.9
	Medium	876	6.38 (4.33, 9.38)	39.5 (26.6, 49.5)	5.82	21.9
	High	1,227	5.71 (3.77, 8.66)	28.9 (19.1, 65.8)	5.36	19.1

Notes: Unit: adjusted for specific gravity (µg/L), Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Czech Republic, Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S19 A: DiNP - Σ of OH-MiNP and cx-MiNP, volume based ($\mu\text{g/L}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,980	8.31 (5.18, 13.3)	43.1 (26.5, 105)	8.50	28.9	2,031	10.2 (7.19, 14.3)	57.9 (34.3, 116)	9.45	32.8
Sex	Female	984	8.19 (5.03, 13.4)	44.4 (27.9, 108)	8.40	29.3	1,014	10.0 (6.85, 14.6)	67.0 (33.8, 145)	9.40	33.6
	Male	993	8.41 (5.31, 13.3)	42.2 (24.2, 98.8)	8.68	28.4	1,017	10.3 (7.45, 14.2)	53.9 (33.6, 94.0)	9.50	31.5
Region	North	300	5.93 (5.33, 6.59)	25.1 (20.6, 35.6)	6.03	17.1	300	11.2 (9.87, 12.7)	78.4 (64.3, 140)	9.85	47.2
	South	310	11.6 (10.6, 12.7)	48.1 (33.2, 70.6)	11.3	30.3	546	10.7 (9.89, 11.6)	48.8 (36.4, 59.6)	10.5	31.1
	West	808	10.9 (10.0, 11.8)	63.6 (46.9, 87.8)	12.2	39.7	904	10.8 (10.1, 11.6)	61.3 (49.8, 84.7)	10.1	37.6
	East	562	5.61 (5.18, 6.08)	23.2 (19.6, 28.7)	6.02	16.6	281	6.74 (6.10, 7.46)	23.4 (18.3, 35.3)	6.57	17.3
Urbanisation	Cities	1,005	7.28 (5.40, 9.80)	35.4 (23.0, 53.0)	7.23	22.9	927	9.66 (7.07, 13.2)	55.7 (31.2, 119)	8.85	31.2
	Towns	528	7.06 (2.79, 17.9)	40.9 (19.9, 181)	8.22	28.0	618	9.86 (6.23, 15.6)	66.1 (25.7, 223)	8.99	30.3
	Rural areas	447	13.6 (9.88, 18.7)	70.9 (33.9, 162)	13.4	42.9	486	11.6 (7.10, 18.9)	56.1 (27.0, 121)	11.5	37.9
Education	Low	78	9.59 (3.77, 24.4)	74.9 (22.4, 430)	9.00	51.2	150	11.3 (8.26, 15.4)	56.0 (30.1, 118)	13.9	36.3
	Medium	634	8.11 (4.72, 13.9)	44.0 (22.7, 114)	8.61	29.8	661	10.5 (7.24, 15.1)	62.4 (37.8, 106)	9.67	35.2
	High	1,229	8.39 (5.26, 13.4)	40.7 (26.7, 84.6)	8.46	26.6	1,200	9.83 (6.94, 13.9)	56.0 (30.3, 159)	8.94	31.8

Notes: Unit: volume based ($\mu\text{g/L}$). Countries per Region(Children): North: Denmark; South: Greece, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S19 B: DiNP - Σ of OH-MiNP and cx-MiNP, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,972	9.29 (6.03, 14.3)	45.4 (26.3, 113)	9.02	28.2	2,026	7.81 (5.47, 11.1)	42.1 (22.3, 111)	6.99	23.8
Sex	Female	981	9.47 (6.07, 14.8)	50.3 (26.7, 129)	9.11	30.0	1,013	8.00 (5.41, 11.8)	48.0 (22.1, 166)	7.09	25.3
	Male	988	9.11 (5.96, 13.9)	39.2 (23.8, 116)	8.93	27.4	1,013	7.63 (5.51, 10.6)	37.0 (23.3, 74.9)	6.83	22.3
Region	North	300	8.62 (7.87, 9.45)	31.1 (23.3, 49.6)	7.94	21.2	300	8.26 (7.36, 9.26)	46.1 (38.7, 86.1)	6.29	34.9
	South	310	11.5 (10.6, 12.5)	47.5 (31.0, 59.3)	10.3	28.0	546	8.37 (7.82, 8.97)	31.0 (25.6, 36.7)	7.67	22.5
	West	800	11.2 (10.3, 12.1)	66.8 (50.5, 85.8)	11.6	38.8	899	8.01 (7.50, 8.55)	58.7 (39.0, 74.6)	7.35	26.2
	East	562	6.62 (6.20, 7.07)	24.9 (19.5, 31.1)	6.17	18.2	281	5.94 (5.42, 6.51)	22.9 (14.2, 39.1)	5.37	12.6
Urbanisation	Cities	999	8.79 (6.92, 11.2)	37.3 (24.0, 66.2)	8.09	23.5	926	7.86 (5.95, 10.4)	38.2 (22.4, 113)	6.92	23.5
	Towns	526	7.21 (3.00, 17.3)	39.0 (18.1, 177)	8.19	26.1	616	7.38 (4.54, 12.0)	45.3 (17.9, 202)	6.59	22.8
	Rural areas	447	14.2 (9.64, 20.9)	60.0 (28.6, 203)	12.7	38.6	484	8.30 (4.78, 14.4)	43.3 (17.9, 108)	7.72	27.2
Education	Low	78	12.3 (6.45, 23.4)	101 (19.7, 316)	10.9	51.8	150	8.91 (6.92, 11.5)	43.3 (24.3, 78.1)	8.39	28.2
	Medium	629	9.59 (6.14, 15.0)	46.4 (26.1, 106)	9.26	28.5	659	7.78 (5.20, 11.6)	44.8 (22.5, 122)	6.81	25.5
	High	1,226	9.07 (5.78, 14.2)	43.4 (24.5, 119)	8.89	27.7	1,197	7.70 (5.42, 10.9)	39.2 (20.1, 155)	6.79	23.2

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark; South: Greece, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland. Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S19 C: DiNP - Σ of OH-MiNP and cx-MiNP, adjusted for specific gravity ($\mu\text{g/L}$)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	1,721	11.2 (8.74, 14.4)	58.8 (35.0, 104)	9.82	32.6
Sex	Female	850	11.3 (8.61, 14.8)	61.8 (38.8, 104)	10.0	35.2
	Male	871	11.1 (8.71, 14.2)	56.1 (30.0, 121)	9.78	30.1
Region	North	300	12.9 (11.5, 14.5)	86.1 (60.0, 148)	10.2	49.5
	South	546	13.9 (13.0, 15.0)	59.2 (47.6, 75.4)	12.3	36.4
	West	594	8.66 (8.14, 9.22)	32.4 (24.6, 46.1)	7.88	20.5
	East	281	10.9 (9.74, 12.1)	70.6 (32.7, 133)	9.15	29.9
Urbanisation	Cities	856	12.4 (10.4, 14.7)	69.9 (35.7, 156)	10.5	35.4
	Towns	524	10.4 (6.87, 15.6)	52.8 (22.1, 267)	9.05	31.6
	Rural areas	341	9.91 (8.12, 12.1)	52.8 (19.7, 81.4)	9.17	22.2
Education	Low	128	13.1 (10.1, 16.8)	53.0 (27.1, 107)	12.9	36.6
	Medium	530	11.0 (8.52, 14.1)	58.9 (35.2, 93.5)	9.44	31.6
	High	1,043	11.1 (8.58, 14.3)	57.6 (31.4, 128)	9.75	31.8

Notes: Unit: adjusted for specific gravity ($\mu\text{g/L}$). Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Poland. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S20 A: DINCH - Biomarker OH-MINCH, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,879	2.34 (1.80, 3.05)	16.5 (11.8, 22.3)	2.22	9.01	2,499	1.59 (1.19, 2.11)	12.0 (8.39, 19.2)	1.49	6.86
Sex	Female	1,441	2.38 (1.84, 3.07)	16.5 (11.0, 26.0)	2.27	9.44	1,280	1.62 (1.18, 2.21)	12.7 (9.14, 19.2)	1.49	7.40
	Male	1,435	2.31 (1.75, 3.05)	16.3 (12.1, 21.2)	2.16	8.64	1,219	1.56 (1.20, 2.02)	11.5 (6.97, 19.0)	1.47	5.97
Region	North	600	3.44 (3.16, 3.74)	24.6 (18.0, 29.7)	3.04	13.0	481	1.55 (1.37, 1.76)	15.9 (11.3, 24.6)	1.51	8.89
	South	610	2.98 (2.74, 3.24)	17.5 (14.1, 26.4)	2.71	9.56	546	1.78 (1.63, 1.95)	11.0 (7.99, 15.0)	1.79	6.11
	West	807	2.29 (2.13, 2.46)	13.7 (10.5, 17.2)	2.10	8.50	904	1.65 (1.53, 1.78)	12.8 (9.86, 16.5)	1.45	7.55
	East	862	1.54 (1.43, 1.66)	10.8 (8.56, 13.8)	1.40	6.41	568	1.36 (1.25, 1.49)	9.03 (6.74, 10.7)	1.26	5.46
Urbanisation	Cities	1,320	2.27 (1.44, 3.57)	17.3 (10.2, 29.9)	2.16	9.12	971	1.40 (0.996, 1.97)	9.09 (5.63, 20.2)	1.34	5.55
	Towns	846	2.31 (1.81, 2.94)	14.5 (9.63, 23.9)	2.14	8.67	825	1.57 (1.14, 2.16)	13.1 (8.92, 18.9)	1.48	7.27
	Rural areas	712	2.53 (2.14, 2.99)	15.4 (10.9, 26.4)	2.37	9.31	701	1.90 (1.43, 2.53)	13.6 (8.95, 29.2)	1.72	8.20
Education	Low	120	2.65 (2.24, 3.13)	25.6 (10.1, 39.5)	2.41	14.2	170	1.62 (1.29, 2.03)	13.7 (6.90, 24.0)	1.57	7.84
	Medium	1,008	2.35 (1.78, 3.10)	15.2 (10.4, 23.1)	2.28	9.02	884	1.57 (1.25, 1.98)	10.5 (6.77, 19.1)	1.48	6.10
	High	1,679	2.34 (1.75, 3.14)	16.5 (11.4, 23.8)	2.20	8.66	1,395	1.58 (1.09, 2.28)	12.5 (8.00, 25.2)	1.47	7.00

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland, Slovakia. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S20 B: DINCH - Biomarker OH-MINCH, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,870	2.51 (1.88, 3.35)	17.4 (10.8, 30.6)	2.31	9.36	2,494	1.19 (0.884, 1.61)	8.19 (5.49, 13.6)	1.08	4.68
Sex	Female	1,438	2.60 (1.93, 3.50)	18.5 (10.6, 32.4)	2.41	9.83	1,279	1.25 (0.900, 1.75)	8.91 (6.13, 16.0)	1.12	5.09
	Male	1,429	2.43 (1.81, 3.26)	17.0 (10.8, 25.3)	2.21	8.92	1,215	1.14 (0.868, 1.48)	7.49 (4.67, 13.6)	1.04	4.01
Region	North	600	4.03 (3.72, 4.37)	30.9 (20.9, 34.1)	3.38	14.4	481	1.17 (1.04, 1.33)	12.9 (7.65, 19.3)	1.11	6.35
	South	610	3.23 (2.97, 3.52)	24.5 (17.1, 34.4)	2.99	10.8	546	1.40 (1.28, 1.52)	7.67 (5.96, 9.08)	1.27	4.59
	West	799	2.35 (2.19, 2.52)	13.5 (11.4, 16.9)	2.26	8.24	899	1.23 (1.14, 1.32)	10.7 (6.81, 13.7)	1.02	5.09
	East	861	1.61 (1.50, 1.73)	9.62 (7.37, 10.7)	1.40	5.43	568	1.01 (0.931, 1.08)	4.75 (3.81, 6.15)	0.881	2.93
Urbanisation	Cities	1,314	2.71 (1.64, 4.47)	21.5 (10.8, 47.6)	2.46	11.1	970	1.14 (0.803, 1.63)	6.24 (4.00, 12.6)	1.09	3.82
	Towns	843	2.24 (1.81, 2.78)	11.7 (8.15, 22.4)	2.05	7.53	823	1.15 (0.818, 1.62)	8.60 (5.21, 15.5)	1.01	4.81
	Rural areas	712	2.51 (1.98, 3.18)	13.8 (8.61, 26.6)	2.36	8.08	699	1.32 (0.951, 1.84)	10.1 (5.30, 25.5)	1.11	6.03
Education	Low	120	3.39 (2.34, 4.92)	26.0 (14.6, 32.8)	2.87	14.6	170	1.22 (0.948, 1.57)	8.84 (4.61, 11.9)	1.08	6.24
	Medium	1,002	2.54 (1.75, 3.69)	18.1 (8.99, 34.7)	2.39	9.59	882	1.12 (0.864, 1.46)	6.73 (3.96, 13.6)	0.978	3.88
	High	1,676	2.48 (1.90, 3.24)	16.5 (10.8, 25.6)	2.26	8.67	1,392	1.23 (0.846, 1.79)	8.90 (5.42, 19.9)	1.14	5.04

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark, Norway; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland, Slovakia. Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S20 C: DINCH - Biomarker OH-MINCH, adjusted for specific gravity (µg/L)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,188	1.83 (1.41, 2.39)	12.2 (8.81, 19.0)	1.68	7.03
Sex	Female	1,116	1.93 (1.42, 2.63)	13.0 (9.23, 21.6)	1.76	7.83
	Male	1,072	1.73 (1.39, 2.15)	10.2 (7.43, 16.8)	1.60	6.00
Region	North	481	1.64 (1.46, 1.84)	16.3 (11.1, 23.2)	1.49	8.52
	South	546	2.32 (2.13, 2.53)	13.5 (10.3, 19.6)	2.16	7.41
	West	594	1.50 (1.38, 1.63)	8.62 (7.28, 11.5)	1.27	5.47
	East	567	1.98 (1.82, 2.15)	10.6 (8.51, 15.4)	1.80	6.92
Urbanisation	Cities	900	1.81 (1.32, 2.48)	11.5 (7.01, 26.9)	1.69	6.69
	Towns	731	1.75 (1.28, 2.39)	11.9 (8.32, 21.7)	1.56	6.94
	Rural areas	555	1.97 (1.54, 2.52)	12.7 (8.54, 19.6)	1.74	7.73
Education	Low	148	1.91 (1.50, 2.44)	11.7 (6.40, 20.2)	1.73	8.49
	Medium	752	1.80 (1.40, 2.32)	10.4 (7.40, 18.6)	1.62	6.55
	High	1,238	1.82 (1.32, 2.51)	12.6 (7.58, 30.2)	1.65	7.26

Notes: Unit: adjusted for specific gravity (µg/L). Countries per Region(Teenagers): North: Norway, Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S21 A: DINCH - Biomarker cx-MINCH, volume based (µg/L)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,579	1.25 (0.909, 1.72)	8.29 (5.37, 13.0)	1.22	4.88	2,317	0.932 (0.719, 1.21)	5.99 (3.83, 10.7)	0.930	3.57
Sex	Female	1,301	1.26 (0.943, 1.70)	8.25 (5.16, 14.4)	1.24	5.06	1,176	0.976 (0.758, 1.26)	6.65 (4.32, 9.49)	0.940	3.71
	Male	1,275	1.23 (0.871, 1.74)	8.34 (5.52, 12.7)	1.21	4.61	1,141	0.889 (0.674, 1.17)	5.53 (3.18, 13.5)	0.915	3.36
Region	North	300	2.12 (1.87, 2.41)	15.2 (11.4, 21.9)	1.72	9.37	300	0.933 (0.806, 1.08)	11.8 (5.58, 17.9)	0.770	5.20
	South	610	1.79 (1.64, 1.95)	9.61 (8.03, 13.7)	1.68	6.26	546	1.03 (0.943, 1.13)	5.76 (3.94, 7.71)	1.08	3.27
	West	807	1.15 (1.07, 1.24)	6.18 (5.21, 8.28)	1.16	4.05	903	1.09 (1.02, 1.17)	6.33 (5.54, 8.03)	1.05	4.00
	East	862	0.867 (0.806, 0.933)	5.07 (4.30, 6.12)	0.810	3.10	568	0.657 (0.597, 0.723)	3.93 (3.08, 4.75)	0.628	2.71
Urbanisation	Cities	1,234	1.34 (0.784, 2.29)	9.79 (5.19, 27.1)	1.30	5.51	927	0.805 (0.542, 1.20)	5.13 (2.81, 10.6)	0.810	3.11
	Towns	712	1.05 (0.702, 1.58)	5.86 (3.84, 9.42)	1.05	3.82	742	1.02 (0.864, 1.20)	6.06 (3.23, 13.5)	1.00	3.62
	Rural areas	632	1.32 (1.02, 1.73)	8.26 (4.96, 12.7)	1.34	4.79	647	1.04 (0.737, 1.47)	6.76 (4.18, 13.9)	1.03	4.10
Education	Low	120	1.57 (1.16, 2.12)	11.8 (7.87, 20.2)	1.37	8.31	170	1.03 (0.876, 1.22)	9.88 (4.51, 12.9)	0.980	4.29
	Medium	994	1.32 (0.961, 1.81)	8.90 (5.49, 15.4)	1.33	5.11	873	0.973 (0.763, 1.24)	5.88 (3.95, 10.6)	0.930	3.59
	High	1,406	1.20 (0.849, 1.69)	7.61 (5.00, 11.5)	1.18	4.41	1,239	0.896 (0.658, 1.22)	5.98 (3.55, 12.2)	0.925	3.45

Notes: Unit: volume based (µg/L). Countries per Region(Children): North: Denmark; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland, Slovakia. Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED >= 5).

Table S21 B: DINCH - Biomarker cx-MINCH, creatinine adjusted ($\mu\text{g/g crt}$)

Supplementary to „Current exposure to phthalates and DINCH in European children and adolescents – Results from the HBM4EU Aligned Studies 2014 to 2021“, Vogel et al., 2023

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,570	1.36 (0.932, 1.98)	9.64 (5.11, 19.0)	1.26	5.11	2,312	0.699 (0.529, 0.924)	4.35 (2.68, 7.92)	0.674	2.59
Sex	Female	1,298	1.41 (0.966, 2.06)	9.57 (5.04, 19.6)	1.29	5.19	1,175	0.757 (0.562, 1.02)	4.89 (3.11, 6.92)	0.695	2.79
	Male	1,269	1.31 (0.887, 1.94)	9.68 (5.06, 19.8)	1.22	5.08	1,137	0.645 (0.495, 0.839)	3.96 (2.23, 8.22)	0.632	2.35
Region	North	300	3.09 (2.73, 3.49)	19.7 (14.7, 22.1)	2.81	13.4	300	0.688 (0.594, 0.797)	7.91 (4.76, 11.4)	0.559	3.84
	South	610	1.94 (1.78, 2.11)	13.2 (8.50, 19.8)	1.84	6.15	546	0.807 (0.742, 0.877)	4.09 (3.15, 5.12)	0.776	2.68
	West	799	1.18 (1.10, 1.28)	6.19 (5.20, 8.46)	1.13	4.46	898	0.814 (0.762, 0.869)	5.30 (3.87, 6.56)	0.732	2.92
	East	861	0.903 (0.843, 0.968)	4.59 (3.54, 5.99)	0.860	2.71	568	0.484 (0.446, 0.525)	2.47 (1.95, 2.95)	0.455	1.56
Urbanisation	Cities	1,228	1.61 (0.890, 2.93)	13.4 (5.56, 41.6)	1.49	6.73	926	0.657 (0.448, 0.963)	3.84 (2.37, 6.46)	0.676	2.23
	Towns	709	1.03 (0.717, 1.49)	5.11 (3.53, 8.56)	1.01	3.47	740	0.737 (0.584, 0.930)	4.28 (2.38, 9.38)	0.668	2.60
	Rural areas	632	1.33 (0.917, 1.93)	8.29 (5.07, 13.0)	1.29	4.65	645	0.723 (0.475, 1.10)	4.92 (2.32, 15.9)	0.668	2.93
Education	Low	120	2.01 (1.20, 3.36)	17.7 (10.6, 26.6)	1.74	11.0	170	0.777 (0.619, 0.977)	6.30 (2.68, 10.1)	0.696	3.03
	Medium	988	1.43 (0.908, 2.26)	10.5 (5.08, 22.1)	1.32	5.57	871	0.694 (0.517, 0.931)	4.20 (2.49, 7.44)	0.646	2.55
	High	1,403	1.30 (0.915, 1.84)	8.23 (4.89, 14.4)	1.20	4.56	1,236	0.698 (0.513, 0.951)	4.32 (2.56, 8.30)	0.680	2.48

Supplementary to „Current exposure to phthalates and DINCH in European children and adolescents – Results from the HBM4EU Aligned Studies 2014 to 2021“, Vogel et al., 2023

Children					Teenagers				
N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland, Slovakia. Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S21 C: DINCH - Biomarker cx-MINCH, adjusted for specific gravity ($\mu\text{g/L}$)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,006	1.08 (0.912, 1.27)	6.29 (4.72, 8.94)	1.01	3.67
Sex	Female	1,012	1.16 (0.980, 1.38)	6.67 (4.81, 10.3)	1.07	4.10
	Male	994	0.992 (0.841, 1.17)	5.87 (3.48, 9.86)	0.967	3.26
Region	North	300	1.08 (0.932, 1.24)	11.1 (6.58, 21.9)	0.889	5.95
	South	546	1.34 (1.24, 1.46)	7.42 (5.12, 8.96)	1.26	4.26
	West	593	0.982 (0.912, 1.06)	3.99 (3.29, 5.26)	0.934	2.82
	East	567	0.953 (0.873, 1.04)	6.00 (4.44, 7.20)	0.924	3.38
Urbanisation	Cities	856	1.04 (0.773, 1.41)	6.69 (4.76, 9.74)	0.960	3.85
	Towns	648	1.14 (1.00, 1.29)	6.22 (3.21, 15.7)	1.07	3.48
	Rural areas	501	1.05 (0.893, 1.23)	6.20 (3.77, 9.46)	0.997	3.44
Education	Low	148	1.20 (1.03, 1.38)	8.84 (4.26, 11.9)	1.11	4.20
	Medium	741	1.10 (0.979, 1.24)	6.36 (4.73, 8.74)	1.03	3.81
	High	1,082	1.04 (0.835, 1.30)	6.17 (3.75, 9.86)	0.994	3.44

Notes: Unit: adjusted for specific gravity ($\mu\text{g/L}$), Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED ≥ 5).

Table S22 A: DINCH - Σ of OH-MINCH and cx-MINCH, volume based ($\mu\text{g/L}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,579	3.57 (2.70, 4.70)	23.7 (16.1, 37.9)	3.38	13.2	2,317	2.51 (2.00, 3.16)	17.0 (12.1, 26.1)	2.35	9.93
Sex	Female	1,301	3.60 (2.78, 4.66)	23.6 (14.4, 42.0)	3.41	13.7	1,176	2.57 (2.02, 3.27)	18.0 (13.4, 26.9)	2.34	10.8
	Male	1,275	3.53 (2.61, 4.77)	23.7 (16.9, 33.7)	3.33	12.6	1,141	2.46 (1.96, 3.07)	16.1 (9.76, 28.4)	2.36	9.04
Region	North	300	5.49 (4.85, 6.21)	41.7 (25.7, 47.8)	4.86	22.6	300	1.94 (1.67, 2.24)	21.9 (11.8, 33.3)	1.61	9.88
	South	610	4.88 (4.50, 5.30)	27.7 (21.2, 41.5)	4.45	16.1	546	2.92 (2.68, 3.18)	17.4 (11.6, 22.3)	2.85	9.20
	West	807	3.55 (3.31, 3.80)	19.9 (15.2, 25.8)	3.38	11.9	903	2.83 (2.63, 3.04)	18.9 (15.2, 25.0)	2.53	11.5
	East	862	2.47 (2.30, 2.65)	16.2 (12.7, 20.0)	2.21	9.33	568	2.07 (1.89, 2.26)	12.2 (9.57, 14.3)	1.91	8.01
Urbanisation	Cities	1,234	3.63 (2.21, 5.96)	27.2 (15.5, 51.3)	3.39	14.8	927	2.24 (1.59, 3.15)	14.6 (7.92, 30.9)	2.12	8.28
	Towns	712	3.25 (2.61, 4.03)	18.1 (11.8, 28.0)	3.14	11.4	742	2.55 (2.16, 3.00)	18.7 (10.9, 30.6)	2.43	10.0
	Rural areas	632	3.83 (3.16, 4.65)	23.6 (14.4, 45.4)	3.78	13.3	647	2.92 (2.21, 3.84)	21.5 (12.5, 32.4)	2.66	11.9
Education	Low	120	4.31 (3.46, 5.38)	39.4 (20.2, 49.4)	3.84	22.4	170	2.74 (2.31, 3.24)	22.1 (9.69, 36.5)	2.53	13.4
	Medium	994	3.75 (2.81, 4.99)	22.8 (16.1, 38.1)	3.63	14.1	873	2.62 (2.14, 3.21)	15.6 (10.7, 31.4)	2.41	9.54
	High	1,406	3.44 (2.59, 4.57)	22.6 (14.3, 35.4)	3.25	11.7	1,239	2.41 (1.84, 3.14)	15.9 (11.3, 26.3)	2.27	9.77

Notes: Unit: volume based ($\mu\text{g/L}$). Countries per Region(Children): North: Denmark; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland, Slovakia. Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S22 B: DINCH - Σ of OH-MINCH and cx-MINCH, creatinine adjusted ($\mu\text{g/g crt}$)

		Children					Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90	N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,570	3.88 (2.80, 5.39)	26.6 (15.3, 49.5)	3.56	14.6	2,312	1.88 (1.47, 2.41)	11.7 (8.32, 18.7)	1.71	6.87
Sex	Female	1,298	4.02 (2.88, 5.61)	28.1 (14.9, 52.1)	3.76	14.9	1,175	1.99 (1.51, 2.61)	12.2 (8.84, 19.4)	1.75	7.37
	Male	1,269	3.75 (2.68, 5.25)	25.0 (15.1, 47.7)	3.40	14.2	1,137	1.78 (1.43, 2.23)	10.9 (7.11, 17.1)	1.66	6.00
Region	North	300	7.98 (7.08, 9.00)	50.8 (41.0, 68.4)	6.90	34.2	300	1.43 (1.24, 1.64)	15.3 (9.55, 22.5)	1.12	7.18
	South	610	5.30 (4.87, 5.75)	40.3 (24.5, 54.7)	4.81	17.3	546	2.29 (2.11, 2.47)	11.8 (8.96, 14.6)	2.05	7.18
	West	799	3.64 (3.40, 3.90)	19.8 (15.9, 25.5)	3.48	12.2	898	2.10 (1.97, 2.25)	16.2 (10.5, 20.9)	1.77	8.25
	East	861	2.57 (2.40, 2.75)	14.6 (10.7, 16.4)	2.31	8.28	568	1.53 (1.41, 1.64)	7.19 (5.59, 9.01)	1.31	4.36
Urbanisation	Cities	1,228	4.38 (2.52, 7.62)	37.4 (16.4, 95.8)	3.99	17.7	926	1.83 (1.30, 2.58)	9.55 (6.13, 17.0)	1.73	5.95
	Towns	709	3.18 (2.65, 3.82)	15.9 (10.4, 25.8)	2.98	10.1	740	1.84 (1.51, 2.25)	11.5 (7.33, 19.2)	1.63	6.58
	Rural areas	632	3.85 (2.87, 5.16)	23.4 (14.0, 40.9)	3.63	12.5	645	2.03 (1.44, 2.86)	14.6 (7.32, 30.5)	1.77	8.75
Education	Low	120	5.52 (3.58, 8.52)	45.7 (22.9, 64.4)	4.79	22.9	170	2.06 (1.66, 2.55)	16.0 (7.27, 21.2)	1.77	8.37
	Medium	988	4.07 (2.72, 6.08)	28.3 (15.1, 55.9)	3.77	15.5	871	1.87 (1.46, 2.39)	10.3 (6.00, 21.8)	1.66	6.17
	High	1,403	3.72 (2.79, 4.97)	23.0 (14.6, 41.1)	3.40	12.7	1,236	1.87 (1.42, 2.47)	11.7 (8.70, 18.5)	1.73	6.85

Notes: Unit: crt adjusted ($\mu\text{g/g crt}$). Countries per Region(Children): North: Denmark; South: Greece, Italy, Slovenia; West: Belgium, France, Germany, The Netherlands; East: Hungary, Poland, Slovakia. Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, France, Germany; East: Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

Table S22 C: DINCH - Σ of OH-MINCH and cx-MINCH, adjusted for specific gravity ($\mu\text{g/L}$)

		Teenagers				
		N	GM (95% CI)	P95 (95% CI)	P50	P90
Europe	All	2,006	2.93 (2.45, 3.49)	18.0 (12.8, 24.8)	2.63	10.1
Sex	Female	1,012	3.10 (2.50, 3.84)	19.2 (12.9, 33.1)	2.75	11.4
	Male	994	2.76 (2.40, 3.17)	14.6 (10.7, 23.7)	2.55	8.99
Region	North	300	2.23 (1.94, 2.57)	23.7 (13.0, 34.5)	1.85	10.5
	South	546	3.80 (3.51, 4.12)	21.0 (15.4, 28.2)	3.45	11.7
	West	593	2.58 (2.39, 2.78)	12.5 (10.6, 15.8)	2.28	8.44
	East	567	3.00 (2.77, 3.26)	16.1 (12.0, 22.4)	2.74	9.90
Urbanisation	Cities	856	2.93 (2.19, 3.92)	17.4 (10.6, 37.2)	2.60	10.4
	Towns	648	2.87 (2.49, 3.31)	15.5 (10.2, 33.4)	2.63	9.51
	Rural areas	501	3.00 (2.56, 3.52)	18.8 (11.4, 25.8)	2.73	10.3
Education	Low	148	3.21 (2.71, 3.81)	21.2 (12.8, 28.6)	2.84	12.5
	Medium	741	3.01 (2.55, 3.55)	15.5 (11.4, 29.9)	2.68	10.0
	High	1,082	2.82 (2.29, 3.46)	16.7 (11.2, 28.3)	2.53	9.82

Notes: Unit: adjusted for specific gravity ($\mu\text{g/L}$), Countries per Region(Teenagers): North: Sweden; South: Greece, Slovenia, Spain; West: Belgium, Germany; East: Poland, Slovakia. Urbanisation is classified by the Degree of Urbanisation (DEGURBA). Education is classified by the International Standard Classification of Education (ISCED): Low education (ISCED 0-2), Medium education (ISCED 3-4), High education (ISCED \geq 5).

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