

SUPPLEMENTARY MATERIAL

Methylmercury Risk Assessment based on European Human Biomonitoring Data

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Bibliographic search strategy

A systematic search of available Human Biomonitoring data from EU countries on methylmercury and total mercury was conducted through the IPCHEM (The Information Platform for Chemical Monitoring), which is the European Commission's reference access point for searching, accessing and retrieving chemical occurrence data collected and managed in Europe and in the HBM4EU Scoping Document [24]. The search keywords used here were: "Mercury" AND "Human Biomonitoring Data" and "Methylmercury" AND "Human Biomonitoring Data".

In addition, SCOPUS, PubMed and Web of Science were consulted (accessed on 9 March 2022). The search keywords used were: "Methylmercury" OR "Mercury" AND "Human Biomonitoring"; "Methylmercury" OR "Mercury" AND "Blood Samples"; "Methylmercury" OR "Mercury" AND "Hair Samples"; "Methylmercury" OR "Mercury" AND "Blood"; "Methylmercury" OR "Mercury" AND "Hair" "Methylmercury" OR "Mercury" AND "Children"; "Methylmercury" OR "Mercury" AND "Adolescents"; "Methylmercury" OR "Mercury" AND "Woman of childbearing age"; "Mercury Human Biomonitoring" AND "European population". After primary screening to remove the articles with irrelevant topics, a secondary screening was done to select the articles with the following specific HBM datasets 1) Studies with available data of Hg and/or MeHg levels in hair or blood expressed as geometric mean (GM) and/or 95th percentile (P95) and 2) with participants from at least one of the two population groups of interest, as defined previously.

Table S1. HQ calculated for each study included in this RA.

Country	Study	Population (N)	Total Mercury		Methylmercury		Total Mercury		Methylmercury		Ref.
			Blood (µg/L)		Blood (µg/L)		HQ (HBM I)		HQ (HBM I)		
			GM	P95	GM	P95	GM	P95	GM	P95	
Belgium	FLESH	Adolescents 14-15y (206)	0.68	–	0.43	–	0.14	–	0.09	–	[27]
		Mothers 20-40y (242)	1.25	–	0.93	–	0.25	–	0.19	–	
	DEMOCOPHES-BE	Children 6-11y (127)	0.73	–	–	–	0.15	–	–	–	[28]
		Mothers <45y (127)	1.31	–	–	–	0.26	–	–	–	
Cyprus	DEMOCOPHES-CY	Children 6-11y (60)	1.16	–	–	–	0.23	–	–	–	[28]
		Mothers Age <45y (60)	1.65	–	–	–	0.33	–	–	–	
	Czech Republic	CZ-HBM-2001-2003	Children Age: 8-10y (333)	0.43	1.44	–	–	0.09	0.29	–	–
CZ-HBM-2008		Children 8-10y (344)	–	1.47	–	–	–	0.29	–	–	[30]
DEMOCOPHES-CZ		Children 6-11y (120)	0.35	–	–	–	0.07	–	–	–	[28]
		Mothers <45y (120)	0.56	–	–	–	0.11	–	–	–	
CZ-HBM-2015		Women 18-50 y (n.a.)	0.80	0.90	–	–	0.16	0.18	–	–	[31]
CZ-HBM-2016		Children 5 & 9y (419)	0.32	1.03	–	–	0.06	0.21	–	–	[32]

Country	Study	Population (N)	Total Mercury		Methylmercury		Total Mercury		Methylmercury		Ref.
			Blood (µg/L)		Blood (µg/L)		HQ (HBM I)		HQ (HBM I)		
			GM	P95	GM	P95	GM	P95	GM	P95	
Denmark	DEMOCOPHES-DK	Children 6-11y (144)	0.89	–	–	–	0.18	–	–	–	[28]
		Mothers <45y (144)	1.40	–	–	–	0.28	–	–	–	
Germany	GerES II	Children 6-17 y (712)	0.33	1.40	–	–	0.07	0.28	–	–	[33]
	GerES IV	Children 3-14 y (1240)	0.23	1.00	–	–	0.05	0.20	–	–	
	DEMOCOPHES-DE	Children 6-11y (120)	0.20	–	–	–	0.04	–	–	–	[28]
		Mothers <45y (120)	0.38	–	–	–	0.08	–	–	–	
Hungary	DEMOCOPHES-HU	Children 6-11y (119)	0.09	–	–	–	0.02	–	–	–	[28]
		Mothers <45y (119)	0.14	–	–	–	0.03	–	–	–	
Ireland	DEMOCOPHES-IE	Children 6-11y (120)	0.35	–	–	–	0.07	–	–	–	[28]
		Mothers <45y (120)	0.58	–	–	–	0.12	–	–	–	
Italy	PROBE	Adolescents 13–15y (252)	0.94	3.55	–	–	0.19	0.71	–	–	[34]
Italy	-	Pregnant women (606 ^{Hg} /236 ^{MeHg})	3.14	–	4.46	–	0.63	–	0.89	–	[35]
Luxembourg	DEMOCOPHES -LU	Children 6-11y (56)	0.65	–	–	–	0.13	–	–	–	[28]

Country	Study	Population (N)	Total Mercury		Methylmercury		Total Mercury		Methylmercury		Ref.
			Blood (µg/L)		Blood (µg/L)		HQ (HBM I)		HQ (HBM I)		
			GM	P95	GM	P95	GM	P95	GM	P95	
Poland	DEMOCOPHES-PL	Mothers <45y (56)	1.38	–	–	–	0.28	–	–	–	[28]
		Children 6-11y (120)	0.25	–	–	–	0.05	–	–	–	
		Mothers <45y (120)	0.48	–	–	–	0.10	–	–	–	
Portugal	DEMOCOPHES-PT	Children 6-11y (120)	3.69	–	–	–	0.74	–	–	–	[28]
		Mothers <45y (120)	4.29	–	–	–	0.86	–	–	–	
Romania	DEMOCOPHES-RO	Children 6-11y (120)	0.30	–	–	–	0.06	–	–	–	[28]
		Mothers <45y (120)	0.36	–	–	–	0.07	–	–	–	
Slovakia	DEMOCOPHES-SK	Children 6-11y (129)	0.33	–	–	–	0.07	–	–	–	[28]
		Mothers <45y (129)	0.47	–	–	–	0.09	–	–	–	
Slovenia	SLO-HBM	Women 19-39y (535)	1.10	4.06	–	–	0.22	0.81	–	–	[36]
	PHIME project	Children 6-11y (174)	0.77	–	–	–	0.15	–	–	–	[37]
		Women 20-35y (127)	1.04	–	–	–	0.21	–	–	–	
	DEMOCOPHES-SI	Children 6-11y (120)	0.60	–	–	–	0.12	–	–	–	[28]
	DEMOCOPHES-SI	Mothers <45y (120)	0.80	–	–	–	0.16	–	–	–	

Country	Study	Population (N)	Total Mercury		Methylmercury		Total Mercury		Methylmercury		Ref.
			Blood (µg/L)		Blood (µg/L)		HQ (HBM I)		HQ (HBM I)		
			GM	P95	GM	P95	GM	P95	GM	P95	
Spain	-	Children 6-16y (233)	2.75	-	-	-	0.55	-	-	-	[38]
	BIOAMBIENT.ES	Women >18 y (918)	6.27	16.90	-	-	1.25	3.38	-	-	[39]
	INMA Project	Children 4-5y (1252)	3.50	-	-	-	0.70	-	-	-	[40]
	DEMOCOPHES-ES	Children 6-11y (120)	3.16	-	-	-	0.63	-	-	-	[28]
		Mothers <45y (120)	5.31	-	-	-	1.06	-	-	-	
	BIOVAL programme	Children 6-11y (611) Valencia Region	2.82	11.61	-	-	0.56	2.32	-	-	[41]
	BETTERMILK Project	Breastfeeding mothers 20-45y (120)	4.36	-	-	-	0.87	-	-	-	[42]
	HEALS-EXHES	Children cord blood (53)	2.87	7.91	-	-	0.57	1.58	-	-	[43, 44]
		Mothers = 35 GM y (53)	2.05	6.98	-	-	0.41	1.40	-	-	
Sweden	DEMOCOPHES-SE	Children 6-11y (100)	0.65	-	-	-	0.13	-	-	-	[28]
		Mothers <45y (100)	0.90	-	-	-	0.18	-	-	-	
	-	Children/adolescent 12, 15 and 18y (1099)	0.66	2.10	-	-	0.13	0.42	-	-	[45]
Switzerland	DEMOCOPHES-CH	Children 6-11y (120)	0.27	-	-	-	0.05	-	-	-	[28]

Country	Study	Population (N)	Total Mercury		Methylmercury		Total Mercury		Methylmercury		Ref.
			Blood (µg/L)		Blood (µg/L)		HQ (HBM I)		HQ (HBM I)		
			GM	P95	GM	P95	GM	P95	GM	P95	
United Kingdom	DEMOCOPHES-UK	Mothers <45y (120)	0.55	–	–	–	0.11	–	–	–	[28]
		Children 6-11y (21)	0.69	–	–	–	0.14	–	–	–	
		Mothers <45y (21)	0.55	–	–	–	0.11	–	–	–	
17 EU countries	DEMOCOPHES	Children 6-11y (1836)	0.51	4.60	–	–	0.10	0.92	–	–	[28]
		Mothers <45y (1839)	0.82	6.75	–	–	0.16	1.35	–	–	

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