Prenatal exposure to low-level methylmercury alters the child's fine motor skills at the age of 18 months

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Table 1. General characteristics of the study populations of mother-child pairs.

n	**205**
Boys, n (%)	102 (49.7%)
Girls, n (%)	103 (50.3%)
Gestational age (weeks) mean (min-max)	39.2 (34-41)
Birthweight (g) mean (min-max)	3591 (2400-4820)
Mother's age at delivery (years)	
mean (min-max)	30 (19-42)
BMI (kg/m^2) before pregnancy	22.8 (16.9-
mean (min-max)	40.7)
Education	
Primary school, n (%)	5 (2 %)
Middle school, n (%)	122 (60 %)
High school, n (%)	20 (10 %)
University degree, n (%)	58 (28 %)
Residential environment	
Centre, n (%)	55 (27 %)
Periphery, n (%)	109 (53 %)
Rural, n (%)	41 (20 %)
Breastfeeding in the 6th weeks of life	
Exclusive or predominant, n (%)	142 (69 %)
Partial or formulae, n (%)	63 (31 %)
Cigarette smoke during pregnancy	
Yes	25 (12 %)
No	180 (88 %)
No. of amalgam fillings	
up to 3, n (%)	196 (96 %)
3-9, n (%)	9 (4 %)
10 or more, n (%)	0 (0 %)
Consumption of sea fish	
Less than once per month, n (%)	11 (5 %)
1-3 times per month, n (%)	67 (33 %)
At least once per week, n (%)	127 (62 %)

Table 2. Results of Bayley Scales of Infant and Toddler Development, Third Edition (BSID-III) in study subjects – children at age of 18 months (N=168)

No. study subject N=168	Arithmetic mean	Standard deviation	Median	Minimum	Maximum
Composite cognitive development	107,62	13,50	105,00	60,00	145,00
Composite language development	107,26	15,21	109,00	50,00	141,00
Sub-scale Receptive language skills	12,12	2,81	13,00	1,00	19,00
Sub-scale Expressive language skills	10,30	3,08	10,00	2,00	18,00
Composite motor development	107,97	10,54	107,00	58,00	139,00
Sub-scale Fine motor skills	11,90	2,26	12,00	4,00	19,00
Sub-scale Gross motor skills	10,66	2,16	10,00	2,00	18,00

Figure 1. Correlation between MeHg cord blood and THg cord blood concentration

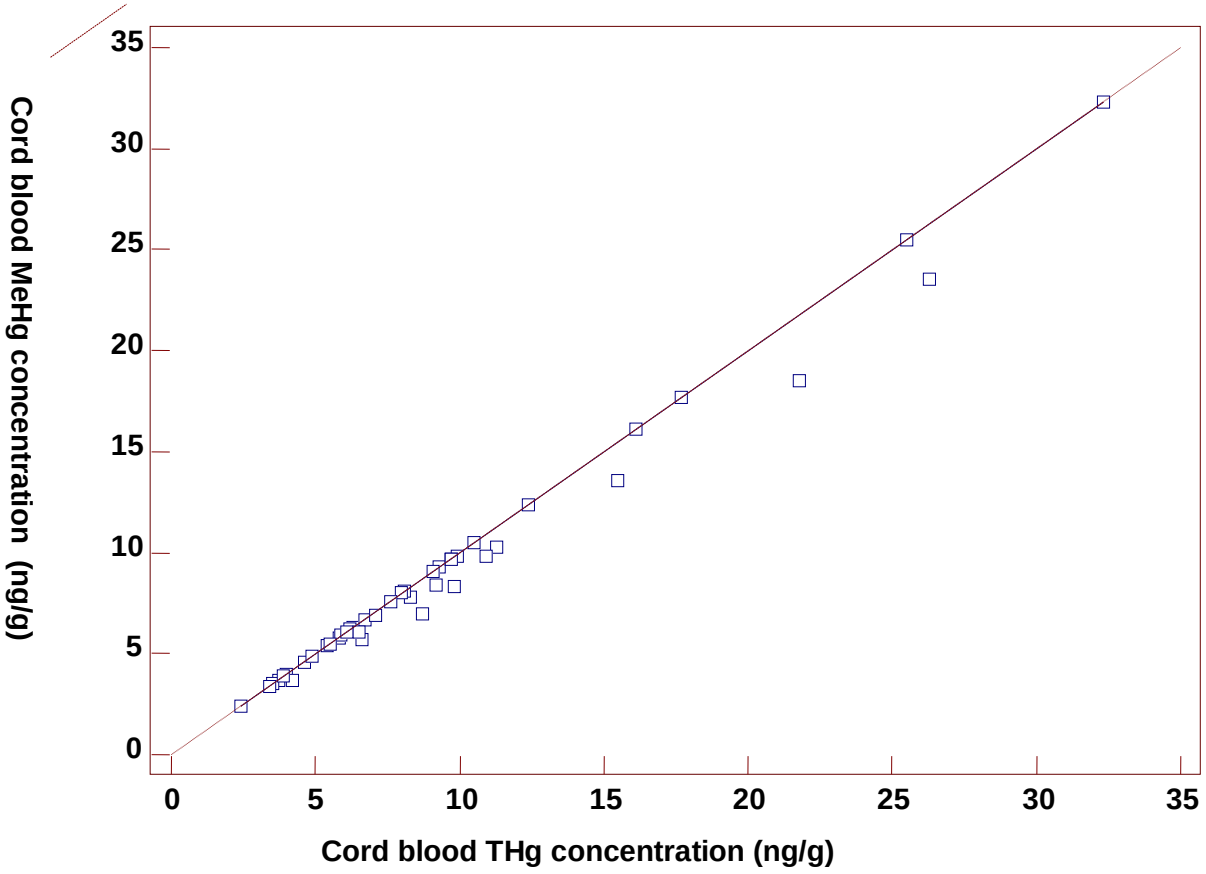

Table 3. Correlation between cord blood THg and scores of BSID-III

		Composite cognitive develop.	**Composite language develop.**	**Sub-scale receptive language skills**	**Sub-scale expressive language skills**	**Composite motor develop.**	**Sub-scale fine motor skills**	**Sub-scale gross motor skills**
Cord blood THg level (ng/g)	rho	-0.13	0.02	-0.04	0.08	-0.11	**-0.22**	0.09
	p	0.12	0.81	0.64	0.35	0.18	**0.01**	0.30
	N	135	135	135	135	135	**135**	135

rho:Spearman coefficient of correlation, p:statistical significance, N:number of children

Table 4. Comparison of cord blood THg level by inter-quartile range and fine motor skills BSID-III sub scale

Cord blood THg quartile level (ng/g) (centile)	**No.**	**Fine motor skills-BSID-III Median**	**Inter-quartile range**
1. (≤ 25.)	29	13	12-14
2. (26.-50.)	36	11	10,5-13
3. (51.-75.)	31	11	11-13
4. (> 75.)	39	11	10-13

p=0.04

Table 5 Post-hoc analyses of cord blood THg level of 1st quartile versus 2nd, 3rd, and 4th quartile regarding fine motor skills BSID-III sub scale

Cord blood THg quartile level (ng/g) Centile	β coefficient	p
2. (26.-50.)	-1.24	**0.03**
3. (51.-75.)	-1.28	**0.03**
4. (> 75.)	-1.45	**0.01**

Table 6. Post-hoc analyses of cord blood THg level of 1st quartile versus 2nd, 2nd versus 3rd, and 3rd versus 4th quartile regarding fine motor skills BSID-III sub scale

Cord blood THg quartile level (ng/g) Centile	β coefficient	p
2. (26.-50.)	-1.24	**0.03**
3. (51.-75.)	-0,04	0.93
4. (> 75.)	-0,16	0.76

Table 7. Multivariate linear regression analyses adjusted for selected potentially confounding factors.

Variables	b coefficient	p
Cord blood THg level	0,06	0,28
Cerebellum lengths	0,12	0,06
FISH: boiled, grilled, fried	-0,06	0,85
CRABS: boiled, grilled, fried	1,08	0,40
MOLLUSCS: boiled, grilled, fried	0,14	0,85
FISH fried	0,20	0,65
CRABS fried	-2,98	0,06
MOLLUSCS fried	-0,07	0,95
TUNA, MACKEREL, SARDINES in oil	-0,71	**0,05**
Breastfeeding in 1st week	-0,60	0,50
Breastfeeding in 2nd week	1,77	0,08
Breastfeeding in 3rd week	-1,05	0,37
Breastfeeding in 4th week	1,37	0,22
Breastfeeding in 5th week	-1,76	0,10
Breastfeeding in 5th week	0,20	0,81
Mother age	0,06	0,40
Mother education	-0,10	0,75
Father education	-0,21	0,51
Smoking in pregnancy	-0,96	0,25
Alcohol intake/week in pregnancy	-0,08	0,47
Mother employment	-3,04	**0,02**
Father employment	-0,06	0,94
Rural environmental residence	0,69	0,35
Parity	-0,10	0,85

$R^2 = 0,27$ Corrected $R^2 = 0,01$ $p = 0,43$