

Supplementary Table 1. Infant feeding behaviours stratified by maternal pre-pregnancy BMI classification.

Breastfeeding behaviour	Total N=260	BMI category, n (%)				p value
		Underweight n=6	Normal weight n=145	Overweight n=59	Obese n=50	
Exclusively breastfed for 6 m	116 (44.6)	3 (50.0)	68 (46.9)	27 (45.8)	18 (36.0)	0.60
Did not exclusively breastfeed for 6 m	144 (55.4)	3 (50.0)	77 (53.1)	32 (54.2)	32 (64.0)	
Ever breastfed in the first 6 m	253 (97.3)	6 (100)	143 (98.6)	58 (98.3)	46 (92.0)	0.08
Never breastfed in the first 6 m	7 (2.7)	0	2 (1.4)	1 (1.7)	4 (8.0)	
Continue to breastfeed past 6 m	190 (73.1)	4 (66.7)	111 (76.6)	42 (71.2)	33 (66.0)	0.50
Did not continue to breastfeed past 6 m	70 (26.9)	2 (33.3)	34 (23.5)	17 (28.8)	17 (34.0)	
Stopped breastfeeding before 6 m	61 (23.5)	2 (33.3)	30 (20.7)	16 (27.1)	13 (26.0)	0.67
Did not stop breastfeeding before 6 m	199 (76.5)	4 (66.7)	115 (79.3)	43 (72.9)	37 (74.0)	
Formula feeding behaviour	N=143	n=3	n=77	n=31	n=32	
Ever formula fed in the first 6 m	141 (98.6)	3 (100)	76 (98.7)	31 (100)	31 (96.9)	0.76
Never formula fed in the first 6 m	2 (1.4)	0	1 (1.3)	0	1 (3.1)	
Continued to formula feed past 6 m	124 (86.7)	3 (100)	67 (87.0)	25 (80.6)	29 (90.6)	0.42
Did not continue to formula feed past 6 m	17 (11.9)	0	9 (11.7)	6 (19.4)	2 (6.3)	

Data are n (%) with p value and partial eta squared (η^2) effect size from univariable logistic regression models. Maternal pre-pregnancy BMI was classified as underweight (<18.5 kg/m²), normal weight (18.5-24.9 kg/m²), overweight (25-29.9 kg/m²) or obese (≥30 kg/m²). m, months.

Supplementary table 2. Univariable associations between maternal pre-pregnancy BMI and covariates of interest with FSIQ, verbal and information scores.

Exposure variable	WPPSI-III scores								
	FSIQ			Verbal			Information		
	R ²	β (95% CI)	p value	R ²	β (95% CI)	p value	R ²	β (95% CI)	p value
Infant birthweight	0.004	0.002 (-0.001, 0.004)	0.16	0.003	0.001 (-0.001, 0.004)	0.24	0.002	0.0002 (-0.0001, 0.001)	0.27
Gestational age	0.01	0.70 (-0.04, 1.4)	0.06	0.01	0.66 (-0.06, 1.4)	0.07	0.01	0.17 (0.03, 0.31)	0.02*
Diabetes status of mother	0.06	-9.5 (-19.4, 0.52)	0.06	0.004	-7.7 (-17.5, 2.2)	0.13	0.002	-1.1 (-3.1, 0.85)	0.27
Centre	0.02	-0.70 (-1.1, -0.32)	0.0003*	0.02	-0.64 (-1.0, -0.27)	0.001*	0.01	-0.10 (-0.17, -0.02)	0.01*
Education	0.06	5.6 (3.7, 7.5)	<0.0001*	0.06	5.6 (3.8, 7.6)	<0.0001*	0.08	1.3 (0.90, 1.7)	<0.0001*
HOME score	0.14	1.2 (0.92, 1.4)	<0.0001*	0.12	1.1 (0.84, 1.3)	<0.0001*	0.12	0.21 (0.16, 0.26)	<0.0001*
Ever breastfed in the first 6 m	0.03	10.9 (1.1, 20.8)	0.03*	0.02	10.8 (0.51, 21.1)	0.04*	0.02	2.3 (0.25, 4.3)	0.03*
Continue to breastfeed past 6 m	0.01	3.0 (-0.65, 6.6)	0.11	0.02	3.6 (0.13, 7.1)	0.04*	0.02	0.87 (0.18, 1.6)	0.01*
Ever formula fed in the first 6 m	0.01	-12.6 (-31.7, 6.4)	0.19	-	-	-	-	-	-
Stopped breastfeeding before 6 m	-	-	-	-	-	-	0.01	-0.65 (-1.4, 0.07)	0.08

FSIQ, Full Scale Intelligence Quotient. WPPSI-III, Wechsler Preschool and Primary Scale of Intelligence, 3rd edition. m, months.

Supplementary table 3. Multivariable regression analyses of sex-based differences in relationships between maternal pre-pregnancy BMI and FSIQ, verbal and information scores.

WPPSI-III scores	Female				Male			
	Model 1 (R ² =0.17)		Final model (R ² =0.12)		Model 1 (R ² =0.20)		Final model (R ² =0.21)	
FSIQ	β (95% CI)	p value	β (95% CI)	p value	β (95% CI)	p value	β (95% CI)	p value
BMI	-0.78 (-3.6, 2.0)	0.58	-1.3 (-3.2, 0.59)	0.18	0.02 (-2.8, 2.9)	0.99	0.95 (-1.1, 3.0)	0.35
Infant birthweight	//	//	//	//	//	//	//	//
Gestational age	//	//	//	//	//	//	//	//
Diabetes status of mother	//	//	//	//	//	//	//	//
Centre	-0.69 (-1.4, 0.07)	0.07	-0.43 (-0.91, 0.05)	0.08	-0.99 (-1.8, -0.23)	0.01*	-0.76 (-1.3, -0.22)	0.01*
Education	4.1 (-0.08, 8.3)	0.06	3.9 (1.2, 6.6)	0.005*	6.0 (1.7, 10.3)	0.007*	2.5 (-0.30, 5.2)	0.08
HOME score	0.77 (0.20, 1.4)	0.01*	0.65 (0.25, 1.1)	0.002*	0.8 (0.2, 1.3)	0.0064*	1.2 (0.82, 1.5)	<0.0001*
Ever breastfed	10.3 (-1.8, 22.4)	0.09	//	//	4.7 (-10.2, 19.5)	0.54	//	//
Continue to breastfeed	//	//	//	//	//	//	//	//
Ever formula fed	//	//	//	//	//	//	//	//
Verbal	Model 1 (R ² =0.11)		Final model (R ² =0.10)		Model 1 (R ² =0.21)		Final model (R ² =0.02)	
	β (95% CI)	p value	β (95% CI)	p value	β (95% CI)	p value	β (95% CI)	p value
BMI	-0.86 (-5.7, 4.0)	0.72	-3.0 (-5.8, -0.12)	0.04*	0.77 (-3.7, 5.2)	0.73	1.1 (-2.4, 4.5)	0.55
Infant birthweight	//	//	//	//	//	//	//	//
Gestational age	//	//	//	//	//	//	//	//
Diabetes status of mother	//	//	//	//	//	//	//	//
Centre	-0.31 (-1.4, 0.76)	0.57	//	//	-0.72 (-1.7, 0.25)	0.14	//	//
Education	3.2 (-4.6, 11.1)	0.41	//	//	2.4 (-3.0, 7.8)	0.38	//	//
HOME score	0.42 (-0.40, 1.2)	0.31	//	//	0.22 (-0.68, 1.1)	0.63	//	//
Ever breastfed	Estimate is biased	//	//	//	Estimate is biased	//	//	//
Continue to breastfeed	-5.0 (-13.4, 3.5)	0.24	//	//	-3.8 (-14.5, 7.0)	0.48	//	//
Information	Model 1 (R ² =0.12)		Final model (R ² =0.13)		Model 1 (R ² =0.21)		Final model (R ² =0.18)	
	β (95% CI)	p value	β (95% CI)	p value	β (95% CI)	p value	β (95% CI)	p value
BMI	0.01 (-0.53, 0.55)	0.98	-0.14 (-0.50, 0.21)	0.43	-0.25 (-0.80, 0.29)	0.36	-0.02 (-0.41, 0.38)	0.94
Infant birthweight	//	//	//	//	//	//	//	//
Gestational age	-0.16 (-0.44, 0.13)	0.28	//	//	0.30 (-0.01, 0.61)	0.06	//	//
Diabetes status of mother	//	//	//	//	//	//	//	//
Centre	-0.04 (-0.19, 0.10)	0.56	//	//	-0.08 (-0.22, 0.07)	0.30	//	//
Education	1.0 (0.17, 1.8)	0.02*	1.2 (0.68, 1.7)	<0.0001*	0.60 (-0.26, 1.5)	0.17	0.56 (0.004, 1.1)	0.05*
HOME score	0.08 (-0.03, 0.19)	0.17	0.08 (0.01, 0.16)	0.03*	0.17 (0.07, 0.27)	0.002*	0.21 (0.14, 0.28)	<0.0001*
Ever breastfed	2.4 (-0.39, 5.2)	0.09	//	//	0.50 (-2.4, 3.4)	0.74	//	//

Continue to breastfeed	-0.12 (-1.1, 0.83)	0.80	//	//	0.72 (-0.27, 1.7)	0.15	//	//
Stopped breastfeeding	//	//	//	//	//		//	//

β is the difference in WPPSI score for each unit increase of maternal weight/BMI

*Statistically significant variables at $\alpha < 0.05$ are included in following subsequent model

// Eliminated from the model