

Supplementary methods, figures and tables

Table of Contents

Supplementary Methods	2
Figure S1 Flowchart of the study design	5
Table S1 Association of 22 <i>a priori</i> based selected maternal bio-psychosocial observed variables with birthweight SD scores corrected for gestational age and sex in the NFBC 1986 and the Generation R Study	6
Table S2 Exploratory factor analysis of 18 maternal bio-psychosocial measures that were associated with birthweight SD scores corrected for gestational age and sex in the NFBC1986 (n=8330).....	8
Figure S2 Scree plot for exploratory factor analysis of 18 maternal bio-psychosocial measures in the NFBC1986	9
Figure S3 Correlation matrix between 18 maternal bio-psychosocial measures in the NFBC1986 and the Generation R study.....	10
Table S3 Stepwise association of four latent factors: ‘Factor1-BMI’, ‘Factor2-DBP’, ‘Factor3-Socioeconomic-Obstetric Profile (SOP)’ and ‘Factor4-Parental-Lifestyle’ with birthweight SD score corrected for gestational age and sex and sequentially adjusted for other latent factors in the NFBC1986 and the Generation R Study	11
Table S4 Association between cumulative BPS score with birthweight SD scores corrected for gestational age and sex in the NFBC1986 and the Generation R Study.....	13
Table S5 Frequency of maternal smoking and alcohol use during pregnancy in different ethnicities in the Generation R Study.....	14
Table S6 Association of different ethnicities with birthweight SD scores corrected for gestational age and sex in the Generation R Study	15
Figure S4. Sensitivity analysis showing forest plot of association of four latent factors with small for gestational age in the NFBC1986 and the Generation R Study.....	16
Figure S5. Sensitivity analysis showing forest plot of association of four latent factors with large for gestational age in the NFBC1986 and the Generation R Study.....	17
Table S7. Sensitivity analysis of association of four latent factors: ‘Factor1-BMI’, ‘Factor2-DBP’, ‘Factor3-Socioeconomic-Obstetric Profile (SOP)’ and ‘Factor4-Parental-Lifestyle’ with SGA and LGA sequentially adjusted for other latent factors in the NFBC1986 and the Generation R study.....	18

Supplementary Methods

Variable	Data collection method	Type of variable	Measurement methods
Maternal			
Body Mass Index (kg/m ²)	Clinical examination	Continuous	NFBC1986 - A trained nurse carried out mother's clinical examinations during multiple antenatal visits. Height was recorded at the first visit. Weight was recorded at multiple time – at first visit, 20 th week and last antenatal visit. Weight before pregnancy was self-recorded through questionnaire. Height and weight were measured to an accuracy of 0.1 cm and 0.1 kg and were converted into pre-pregnancy and end pregnancy BMI.
			Generation R - Maternal examination was carried out by assessing height (cm) and weight (kg) measured without shoes and heavy clothing. Weight was measured at multiple ante-natal visits by trained nurse. Pre-pregnancy weight was self-recorded through questionnaire. Height and weight were converted into pre-pregnancy and end-pregnancy BMI.
Blood Pressure (Systolic and Diastolic) (mm Hg)	Clinical examination	Continuous	NFBC1986 – Trained nurses measured Systolic and Diastolic blood pressure with mercury sphygmomanometer in sitting position from the right arm after 15 minutes of rest. The readings were recorded at the 20 th , 30-36 th and 40 th week of pregnancy. Two readings were taken 2 minutes apart, and the average of the measurements was used.
			Generation R - Blood pressure was examined at each antenatal visit with mercury sphygmomanometer in sitting position.
Haemoglobin (g/dl)	Clinical examination	Continuous	NFBC1986 and Generation R – This was measured during first antenatal visit
Age (years)	Questionnaire – self reported	Continuous	NFBC1986 and Generation R - The age of the mother was assessed at enrolment.

Education	Questionnaire – self reported	Categorical	NFBC 1986 and Generation R - Maternal education was assessed by highest completed level of education classified into three categories: Basic (primary school), secondary (secondary school) and tertiary (higher education).
Employment	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - Maternal employment was categorized into 'employed' and 'unemployed'.
Working position	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - Maternal working position during employment was categorized as: 'standing or moving' and 'sitting'
Marital status	Questionnaire – self reported	Categorical	NFBC1986 and Generation R- Marital status was categorized into 2 categories from 5 sub-categories as: Married - 'married or cohabiting' Unmarried - 'unmarried, widowed or divorced'.
House ownership	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - House ownership was defined as: Yes - living in own house No - living in rented house
Parity	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - Parity was defined as number of previous children and categorized as: Nulliparous – No previous children Multiparous – One or more previous children
Pregnancy desirability	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - Pregnancy desirability was categorised as 'yes' and 'no' depending on the desirability of this pregnancy to the mother.
Previous pregnancy complications	Questionnaire – self reported	Categorical	NFBC1986 and Generation R – It was dichotomized as: No (no previous pregnancy complications) Yes (having miscarriages and/or still births in previous pregnancy)
Smoking	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - Maternal smoking was assessed by asking pregnant mothers whether they smoked at any time during pregnancy and was classified as 'Yes' and otherwise 'No'.

Alcohol use	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - Maternal alcohol consumption was assessed by asking pregnant mothers whether they consumed alcohol at any time during pregnancy and was classified as 'Yes' and otherwise 'No'.
Ethnicity	Questionnaire – self reported	Categorical	NFBC1986 – It is a homogeneous cohort including mothers of only Finnish ethnicity.
			Generation R - Ethnicity of the mother was classified into seven categories: Dutch and other European, Surinamese, Turkish, Moroccan, Cape Verdean, Dutch Antilles and others.
Paternal			
Body Mass Index (kg/m ²)	Questionnaire – self reported	Continuous	NFBC1986 and Generation R – Height and weight was self reported through questionnaire and were then converted to BMI.
Smoking	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - Paternal smoking was assessed by asking whether they smoke and was classified as 'Yes' and otherwise 'No'.
Alcohol use	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - Paternal alcohol consumption was assessed by asking whether they consume alcohol and was classified as 'Yes' and otherwise 'No'.
Employment	Questionnaire – self reported	Categorical	NFBC1986 and Generation R - Paternal employment was categorized into 'employed' and 'unemployed'.
Offspring			
Gestational age (weeks)	Clinical measurement	Continuous	NFBC1986 and Generation R - Gestational age was established by last menstrual period of the mother and cross-evaluated through ultrasound examination.
Birth weight (grams)	Clinical measurement	Continuous	NFBC1986 - Birthweight of the offspring was measured by nurse in grams immediately after birth. Generation R - Medical records completed by obstetricians and community midwives were used to obtain birthweight.
Abbreviations: NFBC1986: Northern Finland Birth Cohort 1986.			

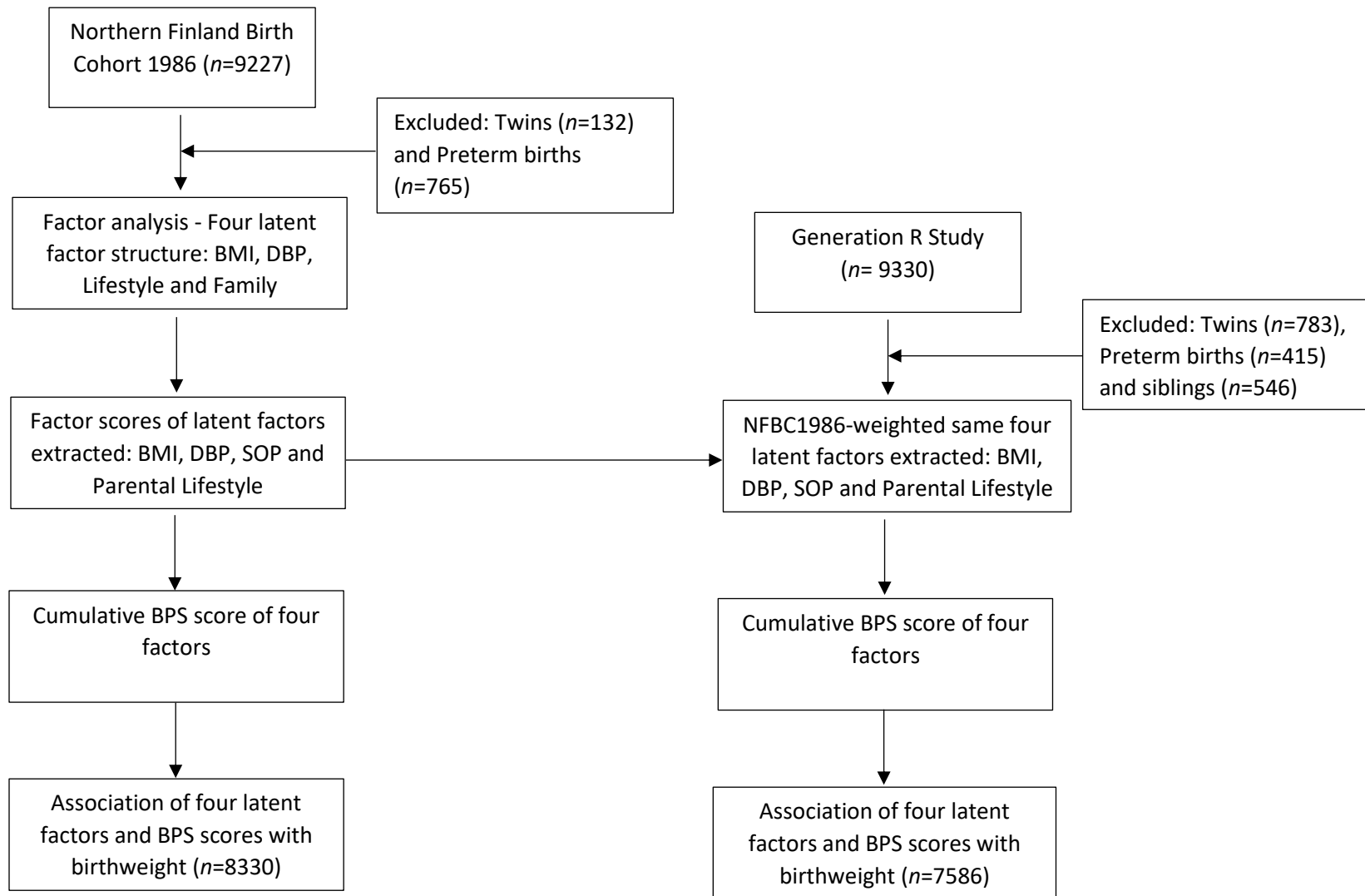


Figure S1 Flowchart of the study design

Note: BMI: Body Mass Index; BPS: Biopsychosocial; CI: Confidence Interval; DBP: Diastolic Blood Pressure; NFBC1986: Northern Finland Birth Cohort 1986; SOP: Socioeconomic-Obstetric Profile.

Table S1 Association of 22 *a priori* based selected maternal bio-psychosocial observed variables with birthweight SD scores corrected for gestational age and sex in the NFBC 1986 and the Generation R Study

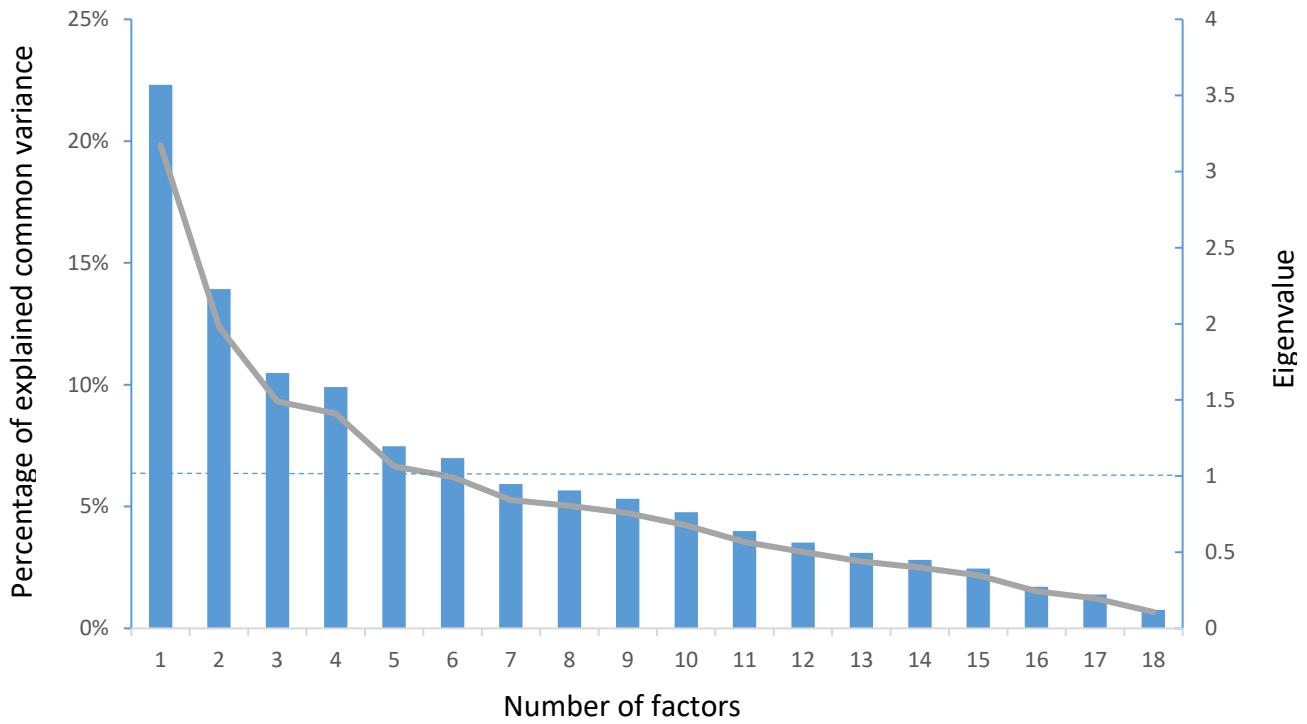
Observed variables	NFBC1986 (n = 8330)			Generation R (n = 7586)		
	Estimate	95% CI	P-value	Estimate	95% CI	P-value
Biological (units)						
Pre-pregnancy BMI (kg/m ²)	0.17	0.15, 0.19	<0.0001	0.16	0.12, 0.18	<0.0001
End-pregnancy BMI (kg/m ²)	0.22	0.20, 0.24	<0.0001	0.21	0.19, 0.23	<0.0001
DBP at 20 weeks (mm Hg)	0.04	0.02, 0.06	0.0006	0.004	-0.02, 0.03	0.75
SBP at 20 weeks (mm Hg)	0.01	-0.008, 0.04	0.21	0.06	0.04, 0.08	<0.0001
DBP at 30-36 weeks (mm Hg)	-0.03	-0.06, -0.01	0.003	-0.03	-0.05, -0.003	0.03
SBP at 30-36 weeks (mm Hg)	-0.01	-0.04, 0.008	0.21	0.06	0.04, 0.08	<0.0001
Haemoglobin at first antenatal visit (g/dl)	-0.003	-0.006, -0.001	0.002	0.004	0.003, 0.008	0.03
Paternal BMI (kg/m ²)	0.03	0.02, 0.04	<0.0001	0.05	0.02, 0.08	0.0003
Material, social and behavioural measures						
House ownership (No)	-0.14	-0.11, -0.18	<0.0001	-0.24	-0.29, -0.19	<0.0001
Marital status (Unmarried)	-0.31	-0.40, -0.23	<0.0001	-0.39	-0.46, -0.32	<0.0001
Maternal age (years)	0.11	0.09, 0.13	<0.0001	0.13	0.11, 0.16	<0.0001
Maternal alcohol use (Yes)	-0.17	-0.24, -0.11,	<0.0001	0.11	0.05, 0.16	<0.0001
Maternal education (Primary)	-0.12	-0.20, -0.04	<0.0001	-0.13	-0.17, -0.10	<0.0001
Maternal employment (Unemployed)	-0.09	-0.16, -0.02	<0.0001	-0.16	-0.21, -0.09	<0.0001
Maternal smoking (Yes)	-0.32	-0.37, -0.26	<0.0001	-0.47	-0.55, -0.39	<0.0001
Maternal working position (Standing/moving)	-0.02	-0.07, 0.04	0.34	-0.05	-0.08, -0.02	0.001
Parity (Multiparous)	0.40	0.28, 0.47	<0.0001	0.38	0.33, 0.42	<0.0001
Pregnancy desirability (No)	-0.10	-0.17, -0.03	0.001	0.002	-0.20, 0.21	0.98
Previous pregnancy complications (Yes)	0.09	0.04, 0.14	0.0005	-0.08	-0.14, -0.008	0.03
Paternal smoking (Yes)	-0.12	-0.16, -0.09	<0.0001	-0.36	-0.43, -0.30	<0.0001
Paternal alcohol use (Yes)	-0.13	-0.17, -0.08	<0.0001	0.13	0.05, 0.21	0.002

Paternal employment (Unemployed)	-0.02	-0.07, 0.02	0.41	-0.15	-0.26, - 0.04	0.008
Abbreviations: BMI: Body Mass Index; CI: Confidence Interval; DBP: Diastolic Blood Pressure; NFBC1986: Northern Finland Birth Cohort 1986; SD: Standard Deviation.						

Table S2 Exploratory factor analysis of 18 maternal biopsychosocial measures that were associated with birthweight SD scores corrected for gestational age and sex in the NFBC1986 (n=8330)

Observed variables	Factor 1	Factor 2	Factor 3	Factor 4
Pre-pregnancy BMI	0.977	0.013	0.029	
End pregnancy BMI	0.857	0.038		
DBP at 20 th week	0.094	0.637	0.084	
DBP at 36 th week	0.042	0.730	-0.061	-0.031
Haemoglobin at first visit	0.111	0.200	-0.091	
House ownership (no)			-0.546	0.057
Marital status (unmarried)			-0.513	0.295
Maternal age		0.066	0.829	0.073
Maternal alcohol use (yes)	-0.048		0.091	0.696
Maternal education (primary)	0.190	-0.087	-0.058	0.097
Maternal employment (unemployed)	0.091	-0.099	-0.247	-0.083
Maternal smoking (yes)	0.063	-0.187	-0.102	0.606
Multi-parity	0.108	-0.250	0.572	-0.060
Paternal alcohol use (yes)	-0.078	0.042	0.024	0.829
Paternal BMI	0.139		0.262	0.106
Paternal smoking (yes)	0.066	-0.115	-0.133	0.415
Pregnancy desirability (no)	0.067		-0.280	0.216
Previous pregnancy complications (yes)	0.037	-0.058	-0.382	
Factor correlations				
Factor 2	0.232	-		
Factor 3	0.256	-0.214	-	
Factor 4	-0.007	-0.060	-0.273	-
<p>Model fit indices: RMSEA: 0.049 (95% CI 0.046-0.052); CFI: 0.905; TLI: 0.832; χ^2: 9194.31 [153], $P < 0.0001$</p> <p>Values are factor loadings for exploratory factor analysis using geomin rotations. Results are shown for full dataset</p> <p>Empty square represent loading with $P > 0.05$. All shaded and bold font represent factor loading greater than 0.3.</p> <p>Five observed variables with low factor loadings (< 0.3) were excluded from the subsequent analysis. Based on univariate associations (Table S1), categorical variables were coded as 0/1, where 1 represents higher risk of reduced birthweight</p> <p>Abbreviations: BMI: Body Mass Index; CI: Confidence Interval; DBP: Diastolic Blood Pressure; NFBC1986: Northern Finland Birth Cohort 1986; SD: Standard Deviation.</p>				

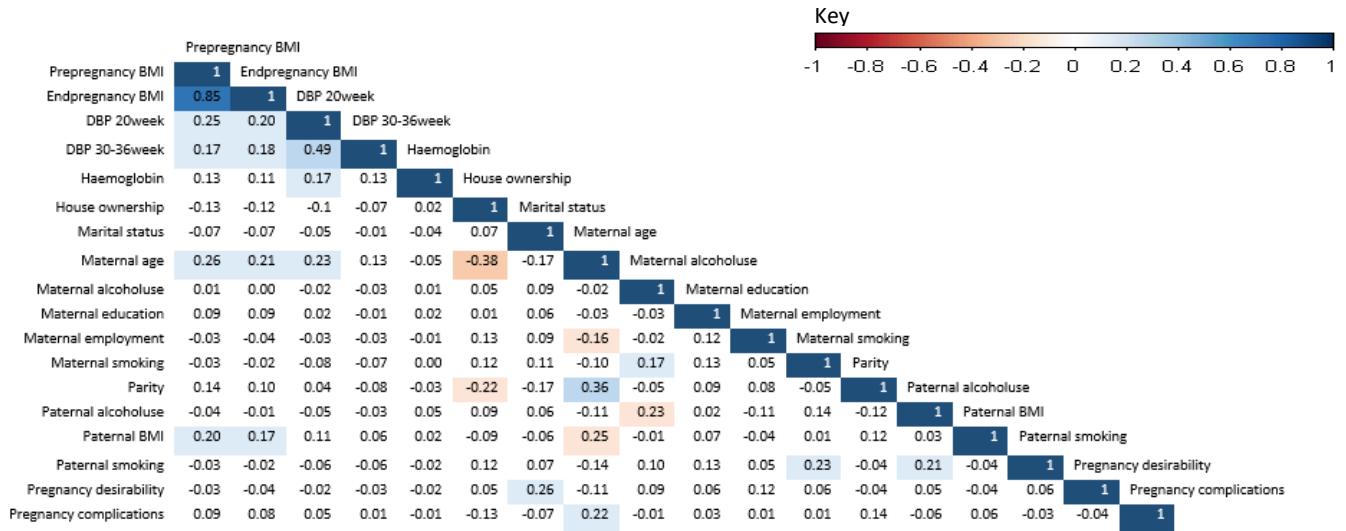
Figure S2 Scree plot for exploratory factor analysis of 18 maternal bio-psychosocial measures in the NFBC1986



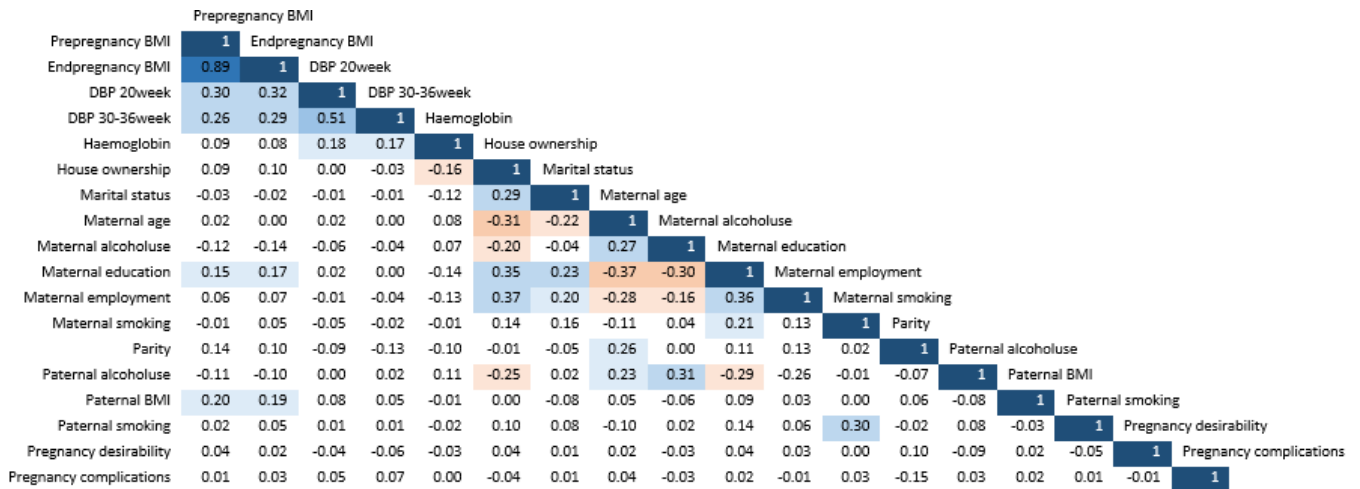
Note: Dashed line demonstrating six factors with an eigenvalue above one.

Figure S3 Correlation matrix between 18 maternal bio-psychosocial measures in the NFBC1986 and the Generation R study

NFBC1986



Generation R



Note: Values are Pearson correlation coefficients between factors. BMI: Body Mass Index, DBP: Diastolic Blood Pressure, NFBC1986: Northern Finland Birth Cohort 1986

Table S3 Stepwise association of four latent factors: ‘Factor1-BMI’, ‘Factor2-DBP’, ‘Factor3-Socioeconomic-Obstetric Profile (SOP)’ and ‘Factor4-Parental-Lifestyle’ with birthweight SD score corrected for gestational age and sex and sequentially adjusted for other latent factors in the NFBC1986 and the Generation R Study

Latent factors	NFBC1986			Generation R		
	Estimate (SD) ^a	95% CI	P value	Estimate (SD) ^a	95% CI	P value
Factor1-BMI (Model 1)	0.24	0.22, 0.26	<0.0001	0.19	0.17, 0.21	<0.0001
+F2-DBP	0.25	0.23, 0.28	<0.0001	0.25	0.22, 0.28	<0.0001
+F3-SOP	0.16	0.13, 0.18	<0.0001	0.18	0.16, 0.20	<0.0001
+F4-Lifestyle	0.19	0.17, 0.22	<0.0001	0.19	0.17, 0.22	<0.0001
+F2-DBP+F3-SOP	0.19	0.16, 0.21	<0.0001	0.23	0.20, 0.26	<0.0001
+F2-DBP+ F4Lifestyle	0.23	0.20, 0.25	<0.0001	0.25	0.22, 0.28	<0.0001
+F4-Lifestyle+F3-SOP	0.17	0.14, 0.19	<0.0001	0.16	0.14, 0.19	<0.0001
+Adjusted for all latent factors (Model 2)	0.20	0.17, 0.22	<0.0001	0.21	0.19, 0.24	<0.0001
+Ethnicity	-	-	-	0.21	0.18, 0.23	<0.0001
+Fully adjusted with ethnicity (Model 3)	-	-	-	0.23	0.20, 0.26	<0.0001
Factor2-DBP (Model 1)	0.07	0.05, 0.11	<0.0001	0.03	0.002, 0.06	0.03
+F1-BMI	-0.03	-0.06, -0.005	0.02	-0.12	-0.15, -0.09	<0.0001
+F3-SOP	-0.01	-0.04, 0.02	0.41	0.03	0.006, 0.06	0.02
+F4-Lifestyle	0.03	0.001, 0.06	0.04	0.02	-0.004, 0.05	0.1
+F2-BMI+F3-SOP	-0.12	-0.16, -0.08	<0.0001	-0.11	-0.14, -0.08	<0.0001
+F1-BMI+F4-Lifestyle	-0.13	-0.17, -0.10	<0.0001	-0.12	-0.15, -0.09	<0.0001
+F3-SOP+F4-Lifestyle	-0.04	-0.07, -0.003	0.03	0.01	-0.01, 0.04	0.33
+Adjusted for all latent factors (Model 2)	-0.14	-0.18, -0.10	<0.0001	-0.11	-0.14, -0.08	<0.0001
+Ethnicity	-	-	-	0.03	0.002, 0.06	0.03
+Fully adjusted with ethnicity (Model 3)	-	-	-	-0.13	-0.16, -0.10	<0.0001
Factor3-SOP (Model 1)	-0.37	-0.41, -0.33	<0.0001	-0.33	-0.37, -0.29	<0.0001
+F1-BMI	-0.26	-0.31, -0.21	<0.0001	-0.31	-0.35, -0.27	<0.0001
+F2-DBP	-0.38	-0.42, -0.33	<0.0001	-0.33	-0.37, -0.29	<0.0001
+F4-SOP	-0.30	-0.34, -0.25	<0.0001	-0.39	-0.43, -0.35	<0.0001
+F1-BMI+F2-DBP	-0.28	-0.32, -0.23	<0.0001	-0.30	-0.34, -0.27	0.007
+F1-BMI+F4-Lifestyle	-0.16	-0.21, -0.11	<0.0001	-0.35	-0.39, -0.31	<0.0001
+F2-DBP+F4Lifestyle	-0.30	-0.35, -0.25	<0.0001	-0.39	-0.43, -0.35	<0.0001
+Adjusted for all latent factors (Model 2)	-0.17	-0.22, -0.12	<0.0001	-0.34	-0.38, -0.30	<0.0001
+Ethnicity	-	-	-	-0.30	-0.34, -0.26	<0.0001
+Fully adjusted with ethnicity (Model 3)	-	-	-	-0.29	-0.33, -0.25	<0.0001

Factor4-Lifestyle (Model 1)	-0.31	-0.35, -0.26	<0.0001	-0.09	-0.14, -0.04	0.0008
+F1-BMI	-0.27	-0.32, -0.23	<0.0001	0.01	-0.04, 0.06	0.68
+F2-DBP	-0.29	-0.34, -0.25	<0.0001	-0.08	-0.13, -0.03	0.002
+F3-SOP	-0.17	-0.22, -0.12	<0.0001	-0.24	-0.29, -0.19	<0.0001
+F1-BMI+F2-DBP	-0.30	-0.34, -0.25	<0.0001	0.004	-0.05, 0.05	0.89
+F1-BMI+F3-SOP	-0.20	-0.25, -0.15	<0.0001	-0.14	-0.20, -0.09	<0.0001
+F2-DBP+F3-SOP	-0.17	-0.22, -0.12	<0.0001	-0.24	-0.29, -0.19	<0.0001
+Adjusted for all latent factors (Model 2)	-0.22	-0.27, -0.17	<0.0001	-0.15	-0.20, -0.10	<0.0001
+Ethnicity	-	-	-	-0.17	-0.22, -0.12	<0.0001
+Fully adjusted with ethnicity (Model 3)	-	-	-	-0.19	-0.24, -0.14	<0.0001

^aEstimates can be interpreted as SD change in birthweight by one unit increase in factor score.

Birthweight was transformed into standard deviation (SD) scores corrected for gestational duration and sex using North European growth standards in the study.

Abbreviations: BMI: Body Mass Index; CI: Confidence Interval; DBP: Diastolic Blood Pressure; F1: Factor1; F2: Factor 2; F3: Factor 3; F4: Factor4; NFBC1986: Northern Finland Birth Cohort 1986; SD: Standard Deviation; SOP: Socioeconomic-Obstetric-Profile.

Table S4 Association between cumulative BPS score with birthweight SD scores corrected for gestational age and sex in the NFBC1986 and the Generation R Study

BPS score ^a	NFBC1986			Generation R		
	Estimates (SD) ^b	95% CI	P-value	Estimates (SD) ^b	95% CI	P-value
0	Reference			Reference		
1	-0.15	-0.41, 0.11	0.26	-0.11	-0.43, 0.22	0.52
2	-0.19	-0.44, 0.05	0.12	-0.03	-0.33, 0.27	0.84
3	-0.33	-0.58, -0.09	0.007	-0.28	-0.57, 0.02	0.07
4	-0.53	-0.77, -0.29	<0.0001	-0.42	-0.71, -0.13	0.005
5	-0.71	-0.95, -0.46	<0.0001	-0.61	-0.91, -0.32	<0.0001
6	-0.82	-1.06, -0.57	<0.0001	-0.78	-1.07, -0.48	<0.0001
7	-0.88	-1.14, -0.62	<0.0001	-0.95	-1.27, -0.62	<0.0001
8	-1.26	-1.58, -0.94	<0.0001	-0.74	-1.18, -0.31	0.0008

^aBPS score is cumulative score of four factors ranging from 0 to 8; 'Factor1-BMI' (graded 0-2 in descending order), 'Factor2-DBP' (graded 0-2 in ascending order), 'Factor3-Socioeconomic Obstetric Profile' (graded 0-2 in ascending order), and 'Factor4-Parental Lifestyle' (graded 0-2 in ascending order). The increasing grade indicating less optimal 'DBP', 'Socioeconomic Obstetric Profile' and 'Parental Lifestyle' factors. The reference category is BPS score of 0.

^bEstimates represents the SD decrease in birthweight by one unit increase in BPS score.

Birthweight was transformed into standard deviation (SD) scores corrected for gestational age and sex using North European growth standards in the study.

Abbreviations: BPS: Biopsychosocial; CI: Confidence Interval; NFBC1986: Northern Finland Birth Cohort 1986; SD: Standard Deviation.

Table S5 Frequency of maternal smoking and alcohol use during pregnancy in different ethnicities in the Generation R Study

	N	Smoking	Alcohol use
European	4013	689 (18.5%)	1772 (47.9%)
Non-European	3159	529 (18.4%)	591 (20.8%)
Non-European sub-categories			
African	150	14 (10.5%)	36 (27.3%)
Dutch Antillean	249	47 (20.1%)	69 (29.9%)
Asian	227	7 (3.5%)	42 (20.9%)
Cape Verdean	319	59 (21.4%)	80 (29.1%)
Indonesian	204	34 (17.3%)	96 (49.2%)
Moroccan	527	23 (5.0%)	14 (3.0 %)
Surinamese	647	126 (20.9%)	158 (26.8%)
Turkish	687	201 (31.8%)	42 (6.9%)
		Missing = 989	Missing = 1052

Table S6 Association of different ethnicities with birthweight SD scores corrected for gestational age and sex in the Generation R Study

	Estimate (SD)	Lower 95% CI	Upper 95% CI	P value
European	0.00 (Reference)			
Non-European sub-categories				
African	0.16	-0.20	0.51	0.39
Dutch Antillean	-0.30	-0.43	-0.17	<0.0001
Asian	-0.03	-0.16	0.11	0.72
Cape Verdean	-0.41	-0.52	-0.29	<0.0001
Indonesian	0.17	0.02	0.31	0.02
Moroccan	0.13	0.04	0.22	0.00
Surinamese	-0.45	-0.53	-0.37	<0.0001
Turkish	-0.02	-0.10	0.06	0.62
Abbreviations: CI: Confidence Interval; NFBFC1986: Northern Finland Birth Cohort 1986; SD: Standard Deviation. Birthweight was transformed into standard deviation (SD) scores corrected for gestational duration and sex using North European growth standards in the study.				

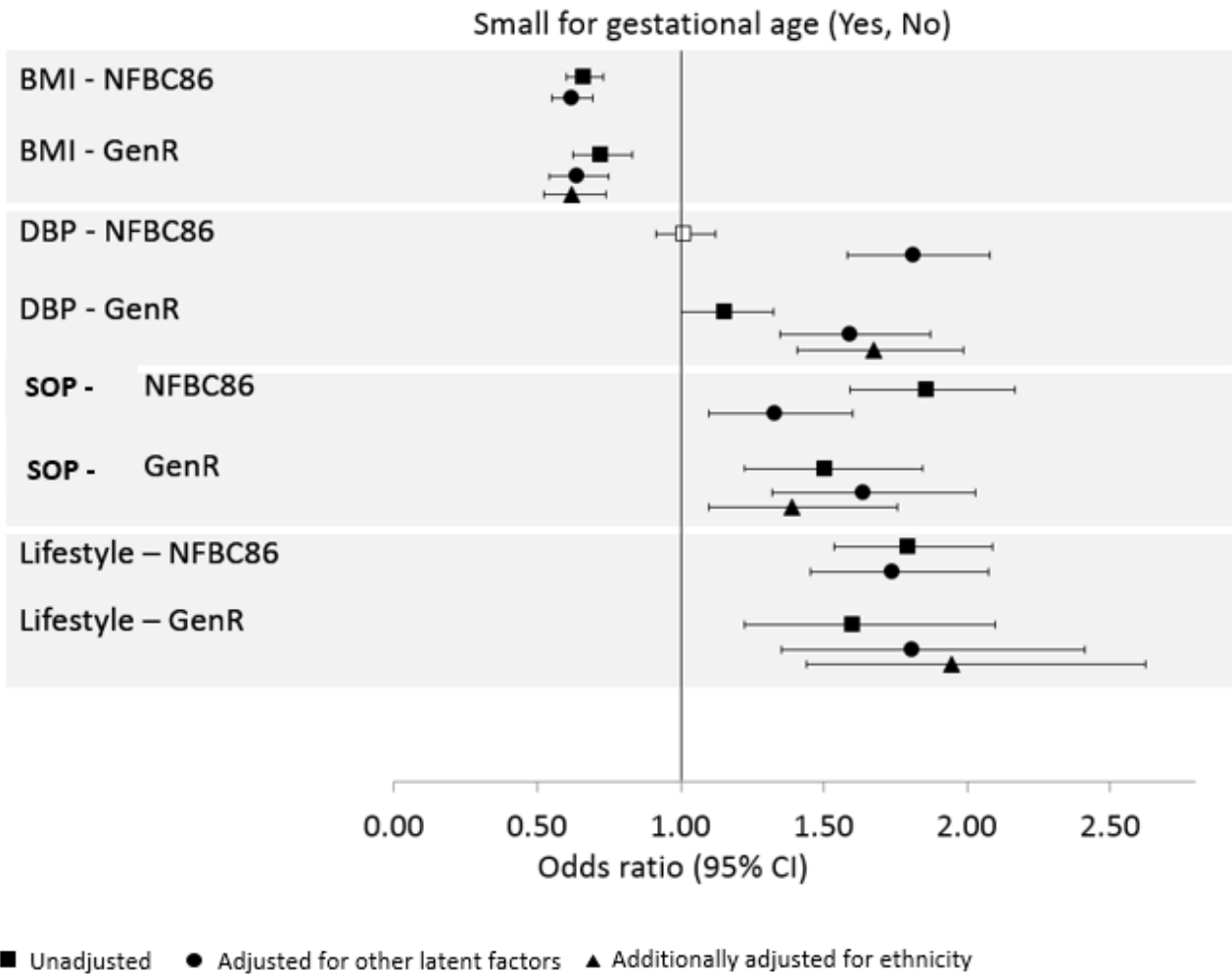


Figure S4. Sensitivity analysis showing forest plot of association of four latent factors with small for gestational age in the NFBC1986 and the Generation R Study

Note: Open symbol $P > 0.05$ and closed symbol $P < 0.05$. Estimates = change in odds for SGA by one unit change in factor score

Abbreviations: BMI: Body Mass Index, CI: Confidence Interval, DBP: Diastolic Blood Pressure, NFBC86: Northern Finland Birth Cohort 1986; SOP: Socioeconomic Obstetric Profile.

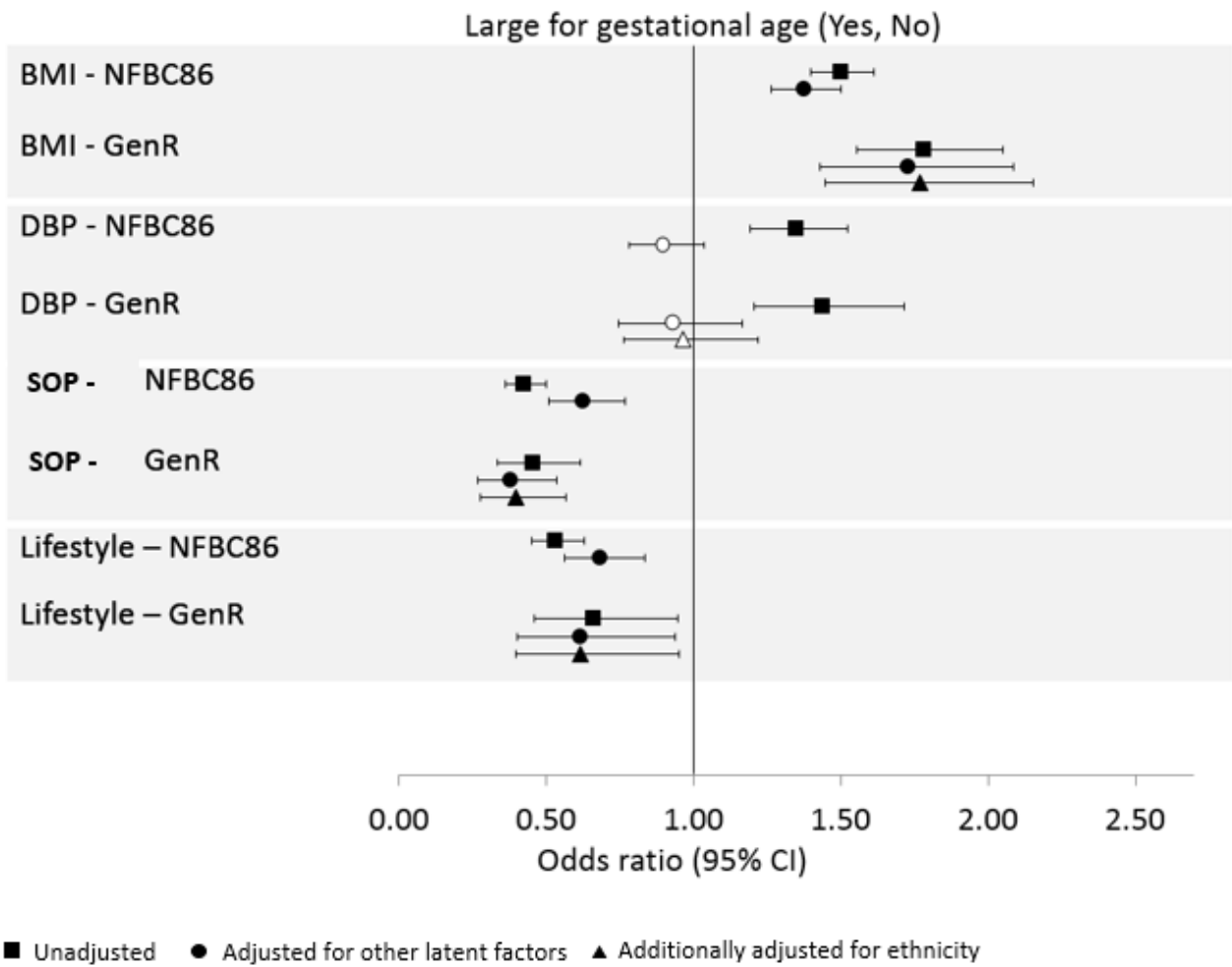


Figure S5. Sensitivity analysis showing forest plot of association of four latent factors with large for gestational age in the NFBC1986 and the Generation R Study

Note: Open symbol $P > 0.05$ and closed symbol $P < 0.05$. Estimates = change in odds for LGA by one unit change in factor score

Abbreviations: BMI: Body Mass Index, CI: Confidence Interval, DBP: Diastolic Blood Pressure, NFBC86: Northern Finland Birth Cohort 1986; SOP: Socioeconomic Obstetric Profile.

Table S7. Sensitivity analysis of association of four latent factors: ‘Factor1-BMI’, ‘Factor2-DBP’, ‘Factor3-Socioeconomic-Obstetric Profile (SOP)’ and ‘Factor4-Parental-Lifestyle’ with SGA and LGA sequentially adjusted for other latent factors in the NFBC1986 and the Generation R study

Latent factors	NFBC 1986						Generation R					
	SGA			LGA			SGA			LGA		
	OR	95% CI	P value	OR	95% CI	P value	OR	95% CI	P value	OR	95% CI	P value
Factor1-BMI (Model 1)	0.66	0.60, 0.73	<0.0001	1.50	1.40, 1.61	<0.0001	0.72	0.63, 0.83	<0.0001	1.78	1.55, 2.05	<0.0001
+F2-DBP	0.58	0.52, 0.64	<0.0001	1.50	1.38, 1.62	<0.0001	0.58	0.49, 0.68	<0.0001	1.85	1.55, 2.21	<0.0001
+F3-SOP	0.72	0.65, 0.80	<0.0001	1.35	1.25, 1.46	<0.0001	0.73	0.63, 0.84	<0.0001	1.80	1.56, 2.07	<0.0001
+F4-Lifestyle	0.68	0.62, 0.75	<0.0001	1.47	1.37, 1.58	<0.0001	0.74	0.64, 0.85	0.0002	1.77	1.53, 2.05	<0.0001
+F2-DBP+F3-SOP	0.64	0.57, 0.71	<0.0001	1.37	1.26, 1.49	<0.0001	0.59	0.51, 0.70	<0.0001	1.84	1.54, 2.21	<0.0001
+F2-DBP+ F4Lifestyle	0.58	0.53, 0.65	<0.0001	1.49	1.38, 1.61	<0.0001	0.60	0.51, 0.70	<0.0001	1.84	1.54, 2.21	<0.0001
+F4-Lifestyle+F3-SOP	0.71	0.64, 0.78	<0.0001	1.37	1.27, 1.48	<0.0001	0.78	0.67, 0.90	<0.0001	1.71	1.47, 1.99	<0.0001
+Adjusted for all latent factors (Model 2)	0.61	0.55, 0.68	<0.0001	1.40	1.29, 1.52	<0.0001	0.63	0.54, 0.74	<0.0001	1.75	1.45, 2.11	<0.0001
+Fully adjusted with ethnicity (Model 3)	-	-	-	-	-	-	0.63	0.53, 0.75	<0.0001	1.77	1.45, 2.16	<0.0001
Factor2-DBP (Model 1)	1.01	0.91, 1.12	0.84	1.35	1.19, 1.52	<0.0001	1.15	1.00, 1.33	0.05	1.44	1.21, 1.72	<0.0001
+F1-BMI	1.25	1.12, 1.83	<0.0001	1.02	0.89, 1.16	0.82	1.56	1.33, 1.84	<0.0001	0.93	0.74, 1.16	0.5
+F3-SOP	1.40	1.23, 1.58	<0.0001	1.13	0.99, 1.28	0.06	1.15	1.00, 1.33	0.05	1.46	1.22, 1.74	<0.0001
+F4-Lifestyle	1.33	1.17, 1.50	<0.0001	1.24	1.09, 1.40	0.0007	1.20	1.04, 1.38	0.01	1.40	1.17, 1.68	0.0002
+F2-BMI+F3-SOP	1.69	1.48, 1.93	<0.0001	0.94	0.82, 1.08	0.41	1.55	1.31, 1.82	<0.0001	0.95	0.77, 1.19	0.68
+F1-BMI+F4-Lifestyle	1.76	1.54, 2.02	<0.0001	0.94	0.82, 1.08	0.38	1.58	1.34, 1.85	<0.0001	0.93	0.74, 1.16	0.49
+F3-SOP+F4-Lifestyle	1.43	1.26, 1.63	<0.0001	1.12	0.98, 1.27	0.09	1.22	1.06, 1.41	0.006	1.37	1.15, 1.64	0.0005
+Adjusted for all latent factors (Model 2)	1.78	1.56, 2.04	<0.0001	0.92	0.80, 1.06	0.23	1.56	1.33, 1.84	<0.0001	0.95	0.76, 1.19	0.67
+Fully adjusted with ethnicity (Model 3)	-	-	-	-	-	-	1.67	1.40, 1.98	<0.0001	0.97	0.77, 1.22	0.78

Factor3-SOP (Model 1)	1.86	1.59, 2.17	<0.0001	0.43	0.36, 0.50	<0.0001	1.50	1.22, 1.84	<0.0001	0.45	0.33, 0.61	<0.0001
+F1-BMI	1.54	1.31, 1.82	<0.0001	0.55	0.46, 0.65	<0.0001	1.44	1.17, 1.76	0.0005	0.45	0.33, 0.61	<0.0001
+F2-DBP	2.05	1.75, 2.40	<0.0001	0.45	0.38, 0.53	<0.0001	1.50	1.23, 1.85	<0.0001	0.44	0.33, 0.60	<0.0001
+F4-SOP	1.57	1.32, 1.86	<0.0001	0.48	0.40, 0.58	<0.0001	1.74	1.41, 2.14	<0.0001	0.35	0.25, 0.49	<0.0001
+F1-BMI+F2-DBP	1.67	1.41, 1.97	<0.0001	0.54	0.46, 0.65	<0.0001	1.41	1.15, 1.73	0.001	0.45	0.33, 0.61	<0.0001
+F1-BMI+F4-Lifestyle	1.25	1.04, 1.51	0.02	0.65	0.53, 0.79	<0.0001	1.63	1.32, 2.02	<0.0001	0.40	0.28, 0.55	<0.0001
+F2-DBP+F4Lifestyle	1.72	1.44, 2.05	<0.0001	0.50	0.41, 0.60	<0.0001	1.76	1.43, 2.18	<0.0001	0.36	0.26, 0.50	<0.0001
+Adjusted for all latent factors (Model 2)	1.31	1.08, 1.58	0.005	0.65	0.53, 0.79	<0.0001	1.61	1.30, 1.99	<0.0001	0.40	0.29, 0.55	<0.0001
+Fully adjusted with ethnicity (Model 3)	-	-	-	-	-	-	1.39	1.10, 1.75	0.006	0.40	0.28, 0.57	<0.0001
Factor4-Parental Lifestyle (Model 1)	1.79	1.54, 2.09	<0.0001	0.53	0.45, 0.63	<0.0001	1.60	1.22, 2.10	0.0006	0.66	0.46, 0.95	0.02
+F1-BMI	1.71	1.46, 2.00	<0.0001	0.58	0.49, 0.69	<0.0001	1.41	1.07, 1.86	0.01	0.95	0.65, 1.37	0.77
+F2-DBP	1.92	1.64, 2.24	<0.0001	0.56	0.47, 0.67	<0.0001	1.69	1.29, 2.22	0.0002	0.73	0.51, 1.06	0.1
+F3-SOP	1.46	1.23, 1.74	<0.0001	0.77	0.63, 0.93	0.006	1.96	1.49, 2.59	<0.0001	0.42	0.28, 0.62	<0.0001
+F1-BMI+F2-DBP	1.91	1.63, 2.24	<0.0001	0.57	0.48, 0.68	<0.0001	1.46	1.10, 1.92	0.008	0.94	0.65, 1.37	0.76
+F1-BMI+F3-SOP	1.55	1.30, 1.85	<0.0001	0.71	0.59, 0.87	0.0006	1.74	1.30, 2.31	0.0002	0.64	0.42, 0.96	0.03
+F2-DBP+F3-SOP	1.52	1.28, 1.81	<0.0001	0.78	0.64, 0.94	0.009	2.08	1.58, 2.75	<0.0001	0.47	0.31, 0.70	0.0002
+Adjusted for all latent factors (Model 2)	1.71	1.43, 2.04	<0.0001	0.70	0.58, 0.86	0.0004	1.78	1.33, 2.37	0.0004	0.64	0.42, 0.96	0.04
+Fully adjusted with ethnicity (Model 3)	-	-	-	-	-	-	1.93	1.44, 2.60	<0.0001	0.62	0.40, 0.95	0.03

Birthweight was transformed into standard deviation (SD) scores corrected for gestational duration and sex using North European growth standards in the study. SGA was defined as birth weight ≤ -2 SD score and LGA as ≥ 2 SD score.

Abbreviations: BMI: Body Mass Index; CI: Confidence Interval; DBP: Diastolic Blood Pressure; F1: Factor1; F2: Factor 2; F3: Factor 3; F4: Factor4; LGA: Large for Gestational Age; NFBC1986: Northern Finland Birth Cohort 1986; SD: Standard Deviation; SGA: Small for Gestational Age; SOP: Socioeconomic-Obstetric-Profile.