

Supplementary Table 1. Additional maternal and fetal characteristics of the study population

Characteristics of Study Participants	Mean \pm SD or n (%)		
	Female offspring (n=149)	Male offspring (n=152)	Combined (n=301)
Married, n (%)	116 (77.9)	110 (72.4)	226 (75.1)
≤ 12 years of education, n (%)	48 (32.2)	45 (29.7)	93 (30.9)
Medically Insured, n (%)	90 (60.4)	94 (61.8)	184 (61.1)
Private Insurance Holder vs Medicaid, n (%)	79 (56.0)	71 (50.4)	150 (53.2)
Smoked cigarettes in the past 6 mo, n (%)	0 (0)	0 (0)	0 (0)
Consumed alcoholic beverage in the past week, n (%)	1 (0.7)	1 (0.7)	2 (0.7)
Gravidity, n (%)			
1	49 (32.9)	54 (35.5)	103 (34.2)
2	48 (32.2)	48 (31.6)	92 (32.0)
≥ 3	52 (34.9)	50 (32.9)	102 (34.0)
Nulliparous, n (%)	68 (45.6)	72 (47.4)	140 (46.5)
Mode of Onset of Labor, n (%)			
C-section (no labor)	29 (19.5)	30 (19.7)	59 (19.6)
Spontaneous	80 (53.7)	66 (43.4)	146 (48.5)
Induced	40 (26.9)	56 (36.8)	96 (31.9)
Preeclamptic, n (%)	4 (2.7)	4 (2.6)	8 (2.7)
Maternal Ancestry Proportions			
East Asian among Asian/Pacific Islander	0.81 \pm 0.29	0.77 \pm 0.31	0.78 \pm 0.30
European among White/non-Hispanic	0.94 \pm 0.12	0.94 \pm 0.12	0.94 \pm 0.12
European among Black/non-Hispanic	0.15 \pm 0.12	0.22 \pm 0.14	0.18 \pm 0.13
European among Hispanic	0.49 \pm 0.21	0.47 \pm 0.18	0.48 \pm 0.19
African among Black/non-Hispanic	0.82 \pm 0.12	0.75 \pm 0.15	0.79 \pm 0.14
African among Hispanic	0.19 \pm 0.17	0.20 \pm 0.17	0.19 \pm 0.17
Native American among Hispanic	0.30 \pm 0.27	0.31 \pm 0.21	0.30 \pm 0.24
Fetal Ancestry Proportions	-	-	-
East Asian among Asian/Pacific Islander	0.76 \pm 0.30	0.71 \pm 0.33	0.74 \pm 0.32
European among White/non-Hispanic	0.92 \pm 0.15	0.89 \pm 0.17	0.91 \pm 0.16
European among Black/non-Hispanic	0.16 \pm 0.11	0.23 \pm 0.15	0.19 \pm 0.13
European among Hispanic	0.48 \pm 0.19	0.49 \pm 0.18	0.48 \pm 0.19
African among Black/non-Hispanic	0.81 \pm 0.13	0.73 \pm 0.17	0.78 \pm 0.15
African among Hispanic	0.22 \pm 0.19	0.19 \pm 0.17	0.21 \pm 0.18
Native American among Hispanic	0.28 \pm 0.25	0.29 \pm 0.22	0.28 \pm 0.23
Placental DNA methylation age, wk	35.7 \pm 1.6	35.6 \pm 1.4	35.7 \pm 1.5
Placental DNA methylation age acceleration, wk	-3.9 \pm 1.8	-3.8 \pm 1.6	-3.8 \pm 1.7

Supplementary Table 2. Correlation estimates between maternal/offspring factors and placental age acceleration

Maternal and offspring factors	Female offspring		Male offspring		Combined	
	Pearson correlation (95% CI)	P-value	Pearson correlation (95% CI)	P-value	Pearson correlation (95% CI)	P-value
Maternal age	0.12 (-0.04, 0.28)	0.14	0.14 (-0.02, 0.29)	0.09	0.13 (0.02, 0.24)	0.03
1st trimester systolic blood pressure	0.09 (-0.08, 0.26)	0.31	-0.28 (-0.43, -0.12)	0.001	-0.08 (-0.20, 0.04)	0.24
1st trimester diastolic blood pressure	0.09 (-0.08, 0.26)	0.31	-0.20 (-0.36, -0.04)	0.01	-0.04 (-0.16, 0.08)	0.27
2nd trimester systolic blood pressure	0.07 (-0.09, 0.23)	0.58	-0.23 (-0.38, -0.06)	0.01	-0.05 (-0.17, 0.07)	0.22
2nd trimester diastolic blood pressure	0.03 (-0.13, 0.19)	0.51	-0.15 (-0.31, 0.01)	0.21	-0.05 (-0.17, 0.07)	0.22
3rd trimester systolic blood pressure	-0.01 (-0.17, 0.16)	0.45	-0.25 (-0.40, -0.09)	0.001	-0.12 (-0.23, 0.00)	0.04
3rd trimester diastolic blood pressure	-0.02 (-0.19, 0.14)	0.44	-0.27 (-0.41, -0.11)	0.001	-0.13 (-0.24, -0.01)	0.01
pre-pregnancy BMI	0.03 (-0.14, 0.19)	0.74	-0.19 (-0.34, -0.03)	0.02	-0.08 (-0.19, 0.04)	0.18
1st Trimester Gestational Weight Gain	-0.08 (-0.23, 0.08)	0.34	-0.17 (-0.32, -0.01)	0.04	-0.11 (-0.22, -0.002)	0.05
2nd Trimester Gestational Weight Gain	-0.12 (-0.27, 0.04)	0.15	-0.21 (-0.36, -0.05)	0.01	-0.16 (-0.27, -0.05)	0.004
3rd Trimester Gestational Weight Gain	-0.17 (-0.32, -0.01)	0.04	-0.18 (-0.33, -0.02)	0.03	-0.17 (-0.28, -0.06)	0.003

Supplementary Table 3. Change in placental epigenetic age acceleration with each unit increase in a maternal cardiometabolic factor

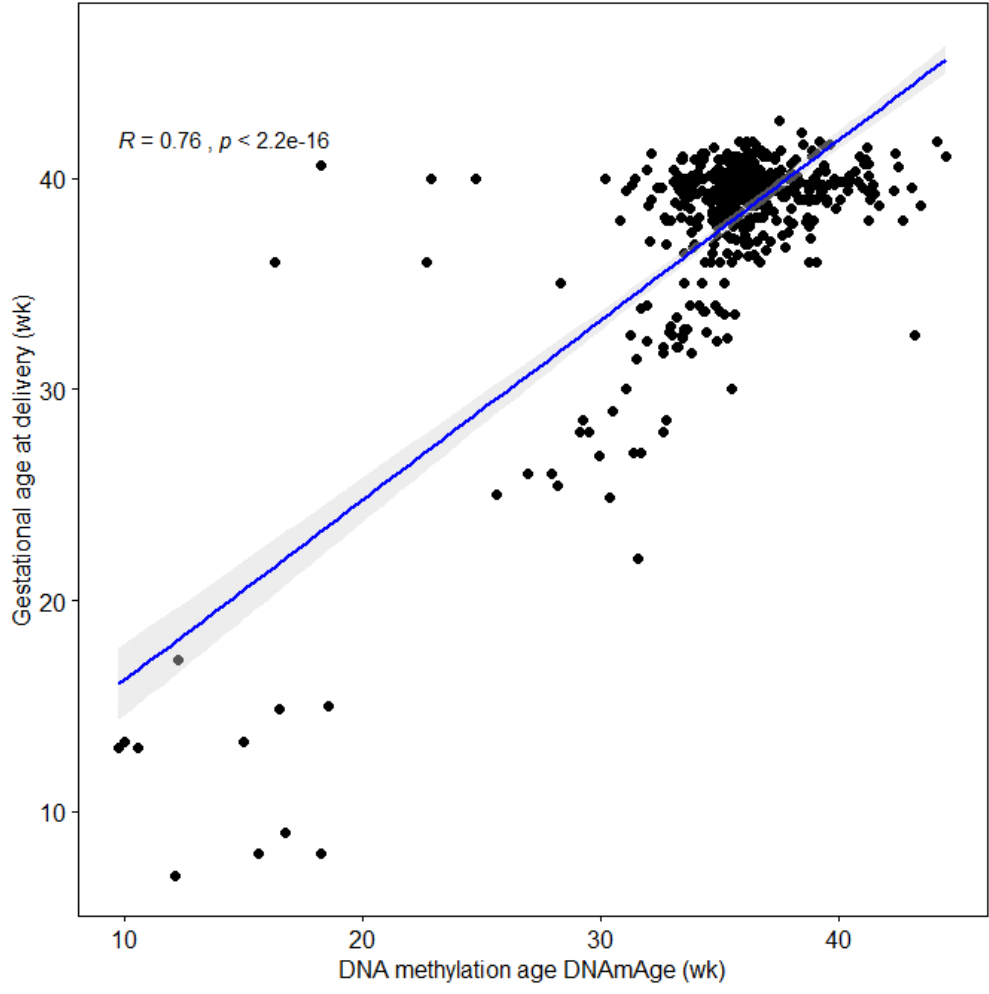
Maternal and offspring cardiometabolic factors	Female offspring		Male offspring		Combined	
	Mean PAA change (95% CI) in weeks ¹	P-value	Mean PAA change (95% CI) in weeks ¹	P-value	Mean PAA change (95% CI) in weeks ¹	P-value
² Trimester specific SBP, mmHG						
1st Trimester	0.10 (-0.28, 0.48)	0.61	-0.31 (-0.59, -0.04)	0.03	-0.11 (-0.34, 0.11)	0.32
2nd Trimester	0.08 (-0.29, 0.45)	0.66	-0.21 (-0.60, 0.18)	0.29	0.01 (-0.25, 0.27)	0.97
3rd Trimester	-0.04 (-0.43, 0.35)	0.83	-0.30 (-0.66, 0.06)	0.06	-0.13 (-0.39, 0.13)	0.33
² Trimester specific DBP, mmHG						
1st Trimester	0.21 (-0.29, 0.71)	0.40	-0.43 (-0.82, -0.04)	0.03	-0.09 (-0.39, 0.22)	0.57
2nd Trimester	-0.03 (-0.64, 0.57)	0.92	-0.20 (-0.75, 0.35)	0.47	-0.03 (-0.42, 0.37)	0.89
3rd Trimester	0.01 (-0.57, 0.59)	0.97	-0.57 (-1.09, -0.05)	0.03	-0.21 (-0.59, 0.17)	0.27
Pre-pregnancy BMI, kg/m ²						
Obese (≥30.0)	0.22 (-0.90, 1.33)	0.70	-1.24 (-2.24, -0.25)	0.01	-0.60 (-1.31, 0.12)	0.10
Overweight (25.0-30.0)	-0.10 (-0.81, 0.61)	0.78	-0.40 (-1.07, 0.26)	0.23	-0.28 (-0.75, 0.19)	0.25
Normal (<25)	Ref	-	Ref	-	Ref	-
GWG (kg/week)						
1st Trimester	-1.51 (-3.54, 0.52)	0.14	-1.40 (-2.82, 0.02)	0.05	-1.46 (-2.61, -0.31)	0.01
2nd Trimester	-1.57 (-3.65, 0.52)	0.14	-1.19 (-2.91, 0.52)	0.17	-1.70 (-3.00, -0.40)	0.01
3rd Trimester	-1.53 (-3.64, 0.59)	0.16	-0.90 (-2.81, 1.01)	0.35	-1.71 (-3.11, -0.32)	0.02
Maternal age, yr	0.05 (-0.02, 0.12)	0.16	0.03 (-0.03, 0.09)	0.27	0.04 (-0.01, 0.09)	0.09
Maternal age group						
≥30 years	0.54 (-0.52, 1.61)	0.31	0.46 (-0.54, 1.46)	0.37	0.39 (-0.32, 1.01)	0.28
30-35 years	-0.40 (-1.17, 0.36)	0.30	0.36 (-0.27, 0.99)	0.26	-0.01 (-0.49, 0.48)	0.98
<30 years	Ref	-	Ref	-	Ref	-
Fetal sex						
Male	NA		NA		0.20 (-0.21, 0.60)	0.34
Female	NA		NA		Ref	-

¹Models included parity, health insurance, mode of onset of labor, marital status, educational status, preeclampsia status, and offspring sex as adjustment variables.

² per 10mmHG increase in DBP and SBP

Statistically significant estimates (P<0.05) are highlighted in bold

Abbreviation: GWG, gestational weight gain; SBP, Systolic blood pressure; DBP, Diastolic blood pressure; PAA, placental epigenetic age acceleration



Supplementary Fig 1. Correlations between estimated placental DNA methylation age and gestational age at birth.

177x177mm (96 x 96 DPI)