

**Supplementary table S1.** The autocorrelations between covariates.

r	Age	Education	BMI	Household income	First pregnancy	Complications	GWG	Insulin injection
Age	1.0000	0.0006	0.0108	0.0332	-0.2457	0.0614	0.0136	0.0061
Education	0.0006	1.0000	-0.0910	0.2689	0.1144	-0.0188	-0.0744	0.0061
BMI	0.0108	-0.0910	1.0000	-0.0555	-0.0143	0.0354	0.1808	0.0345
Household income	0.0332	0.2689	-0.0555	1.0000	-0.0454	0.0243	-0.0316	-0.0043
First pregnancy	-0.2457	0.1144	-0.0143	-0.0454	1.0000	-0.2490	-0.0257	-0.0054
Complications	0.0614	-0.0188	0.0354	0.0243	-0.2490	1.0000	0.0158	0.0190
GWG	0.0136	-0.0744	0.1808	-0.0316	-0.0257	0.0158	1.0000	-0.0010
Insulin injection	0.0061	0.0061	0.0345	-0.0043	-0.0054	0.0190	-0.0010	1.0000

**Supplementary table S2.** Association between pregnancy hyperglycemia and birth weight and macrosomia in different subgroups.

	Birth weight		Macrosomia	
	<i>Adjusted <math>\beta</math> (95%CI)<sup>a</sup></i>	<i>P</i>	<i>Adjusted OR (95%CI)<sup>a</sup></i>	<i>P</i>
Age				
< 35	65.62 (46.26, 84.98)	<0.001	1.58 (1.28, 1.94)	<0.001
$\geq 35$	17.85 (-37.23, 72.94)	0.525	1.39 (0.72, 2.71)	0.324
Education				
Senior high school or lower	62.93 (10.50, 115.36)	0.019	1.51 (0.89, 2.56)	0.128
Junior or regular college	69.11 (47.66, 90.55)	<0.001	1.56 (1.24, 1.97)	<0.001
Graduate or above	4.91 (-41.91, 51.73)	0.837	1.59 (0.89, 2.85)	0.120
BMI before pregnancy (kg/m <sup>2</sup> )				
Underweight (< 18.5)	13.80 (-41.06, 68.66)	0.622	1.25 (0.57, 2.76)	0.571
Normal (18.5 ~ 23.9)	51.13 (29.37, 72.89)	<0.001	1.51 (1.17, 1.96)	0.002
Overweight (24.0 ~ 27.9)	110.50 (64.80, 156.19)	<0.001	1.88 (1.26, 2.80)	0.002
Obesity ( $\geq 28.0$ )	94.24 (-19.35, 207.83)	0.104	1.06 (0.48, 2.33)	0.881
Household income				

Low	93.59 (42.08, 145.09)	<0.001	2.02 (1.17, 3.48)	0.012
Medium	62.89 (40.73, 85.04)	<0.001	1.52 (1.19, 1.93)	<0.001
High	31.59 (-9.71, 72.88)	0.134	1.42 (0.89, 2.25)	0.140
Gestational weight gain /kg				
Appropriate	72.65 (45.99, 99.31)	<0.001	1.72 (1.26, 2.34)	<0.001
Insufficient	3.86 (-29.86, 37.58)	0.823	1.08 (0.63, 1.94)	0.792
Excessive	95.44 (58.98, 131.89)	<0.001	1.55 (1.16, 2.06)	0.003
First pregnancy				
No	56.03 (28.91, 83.14)	<0.001	1.48 (1.21, 1.96)	0.006
Yes	64.35 (39.62, 89.09)	<0.001	1.62 (1.22, 2.06)	<0.001

<sup>a</sup> Adjusted for: maternal age, education, household income, BMI before pregnancy, gestational weight gain, first pregnancy, complications from previous pregnancy, insulin injection and gestational week, respectively.

**Supplementary table S3.** Multivariate analysis of abnormal blood glucose levels during pregnancy and birth outcomes.

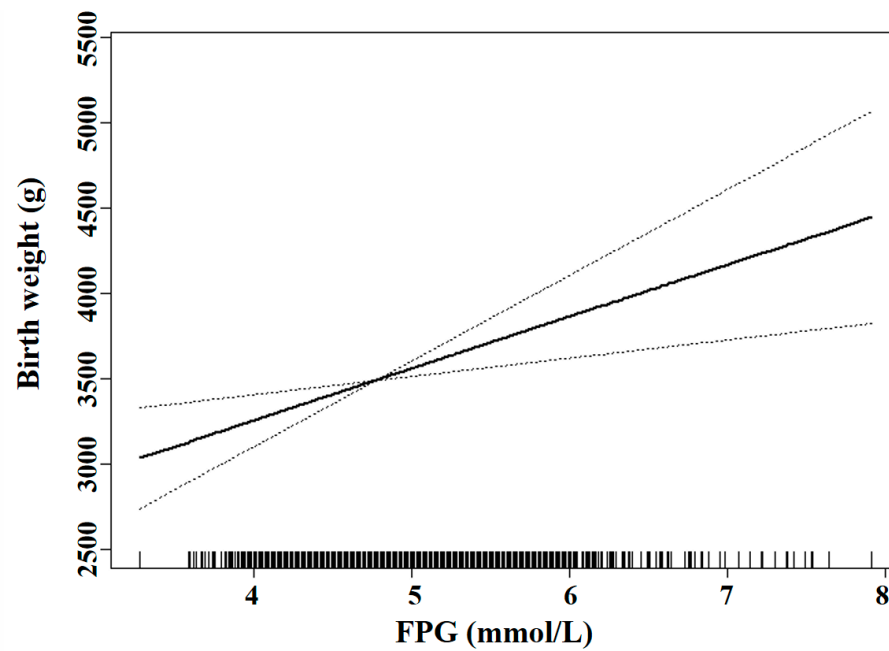
Blood glucose during pregnancy (normal vs abnormal)	FPG <sup>c</sup>		1-h PG <sup>c</sup>		2-h PG <sup>c</sup>	
	<i>Adjusted</i>		<i>Adjusted</i>		<i>Adjusted</i>	
	<i>β/OR (95%CI)</i>	<i>P</i>	<i>β/OR (95%CI)</i>	<i>P</i>	<i>β/OR (95%CI)</i>	<i>P</i>
Birth weight						
Birth weight/g <sup>a</sup>	76.64 (56.32, 96.96)	<0.001	21.87 (-7.23, 50.97)	0.141	32.79 (3.25, 62.33)	0.030
Birth weight Z score <sup>b</sup>	0.17 (0.12, 0.21)	<0.001	0.04 (-0.02, 0.11)	0.189	0.07 (-0.01, 0.13)	0.055
Birth weight Z centile <sup>b</sup>	5.02 (3.67, 6.37)	<0.001	1.61 (-0.32, 3.54)	0.101	1.80 (-0.16, 3.76)	0.072
LBW <sup>a</sup>	1.00 (0.67, 1.49)	0.985	1.27 (0.76, 2.12)	0.357	0.74 (0.41, 1.35)	0.332
Macrosomia <sup>a</sup>	1.66 (1.34, 2.04)	<0.001	1.35 (0.97, 1.86)	0.072	1.61 (1.17, 2.21)	0.003
Gestational age						
Gestational age/week <sup>b</sup>	-0.08 (-0.15, -0.01)	0.033	-0.14 (-0.24, -0.04)	0.007	-0.11 (-0.21, -0.01)	0.044
Premature birth <sup>b</sup>	1.23 (0.97, 1.56)	0.091	1.07 (0.77, 1.49)	0.693	0.86 (0.60, 1.23)	0.407
SGA and LGA						
SGA <sup>b</sup>	0.86 (0.66, 1.13)	0.282	1.21 (0.87, 1.69)	0.263	1.23 (0.88, 1.72)	0.218
LGA <sup>b</sup>	1.52 (1.31, 1.78)	<0.001	1.09 (0.86, 1.38)	0.477	1.36 (1.08, 1.72)	0.009

<sup>a</sup> Adjusted for: maternal age, education, household income, BMI before pregnancy, gestational weight gain, first pregnancy, complications from previous pregnancy, insulin injection and gestational week; <sup>b</sup> Adjusted for: maternal age, education, household income, BMI before pregnancy, gestational weight gain, first pregnancy, complications from previous pregnancy and insulin injection; <sup>c</sup> After evaluating Pearson Chi-Square and C statistics, multivariate regression models showed an appropriate goodness of fit.

**Supplementary table S4.** Association of blood glucose levels and maternal weight before delivery (N=10010).

	Univariate analysis		Multivariate analysis <sup>a</sup>	
	$\beta$ (95%CI)	<i>P</i>	Adjusted $\beta$ (95%CI)	<i>P</i>
FPG	3.51 (2.24, 4.77)	<0.001	1.83 (0.56, 3.10)	0.005
1-h PG	0.55 (0.22, 0.88)	0.001	0.42 (0.09, 0.75)	0.012
2-h PG	-0.27 (-0.70, 0.17)	0.235	-0.28 (-0.72, 1.63)	0.202

<sup>a</sup> Adjusted for: maternal age, education, household income, BMI before pregnancy, gestational weight gain, first pregnancy, complications from previous pregnancy, insulin injection and gestational week.



**Supplementary figure S1.** Association of FPG with birth weight by smoothing spline. Adjusted for: squared FPG.