SUPPLEMENTARY DATA

Supplementary Table 1. Characteristics of mothers and offspring of Thai, Afro-Caribbean and Mexican-American ancestry with maternal FPG value, genetic data and offspring birth weight in HAPO.

	Thai	Afro-Caribbean	Mexican-American
Total mothers, n	1168	1072	602
Age in years, mean (SD)	27.7 (5.5)	25.6 (5.6)	28.8 (5.6)
Primiparous, n (%)	630 (54.1%)	492 (45.9%)	160 (26.6%)
Pre-pregnancy BMI, mean (SD)	21.8 (3.5)	24.2 (5.6)	26.8 (5.6)
Smoker, n (%)	8 (0.007%)	5 (0.005%)	0 (0.0%)
Total offspring, n	1168	1072	602
Gestational age at delivery in weeks, mean (SD)	39 (1)	40 (1)	40 (1)
Female offspring, n (%)	599 (51.3%)	518 (48.3%)	309 (51.3%)
Offspring birth weight corrected for sex and gestational age in grams, mean (SD)	3092 (364)	3223 (427)	3436 (400)
Corrected birth weight cut-off for LGA (≥90th centile) in grams	3645	3730	3960

BMI, body mass index; FPG, fasting plasma glucose; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study; LGA, large for gestational age, SD, standard deviation

Supplementary Table 2. Pairwise correlations of effect allele frequencies of 59 SNPs in the HAPO study samples

	Eur	Thai	Afro-Carib	Mex-Amer
Eur	1.0000	-	-	-
Thai	0.8155	1.0000	-	-
Afro-Carib	0.7610	0.8009	1.0000	-
Mex-Amer	0.9263	0.8869	0.8218	1.0000

SUPPLEMENTARY DATA

Supplementary Table 3. SNPs shown to be associated with birth weight (Horikoshi et al. 2016, *Nature* 538:248-252) and included in the fetal genetic score for birth weight. Beta values were aligned to the birth weight-raising allele on the + strand.

SNP	Gene	Alleles (Effect/Other)	Beta
rs2473248	*WNT4-ZBTB40*	C/T	0.033
rs3753639	*ZBTB7B*	C/T	0.031
rs72480273	*FCGR2B*	C/A	0.031
rs61830764	near *DTL*	A/G	0.022
rs7575873	*ATAD2B*	A/G	0.038
rs1374204	*EPAS1*	T/C	0.047
rs2242116	*PTH1R*	A/G	0.022
rs11719201	*ADCY5*	T/C	0.046
rs10935733	*CPA3*	T/C	0.022
rs13322435	*CCNL1*	A/G	0.053
rs925098	*LCORL*	G/A	0.034
rs6537307	*HHIP*	G/A	0.025
rs854037	*5q11.2*	A/G	0.027
rs7729301	*EBF1*	A/G	0.024
rs35261542	*CDKAL1*	C/A	0.044
rs9379832	*HIST1H2BE*	A/G	0.023
rs7742369	*HMGA1*	G/A	0.028
rs1415701	*L3MBTL3*	G/A	0.025
rs1101081	*ESR1*	C/T	0.038
rs798489	*GNA12*	C/T	0.023
rs11765649	*IGF2BP3*	T/C	0.027
rs6959887	*TBX20*	A/G	0.023
rs138715366	*YKT6-GCK*	C/T	0.241
rs62466330	*BCL7B*	C/T	0.049
rs13266210	*ANK1-NKX6-3*	A/G	0.031
rs6989280	*TRIB1*	G/A	0.022
rs12543725	*SLC45A4*	G/A	0.023
rs28510415	*PTCH1*	G/A	0.056
rs2150052	*LPAR1*	T/A	0.021
rs7847628	*PHF19*	G/A	0.023
rs700059	*STRBP*	G/A	0.033
rs61862780	*HHEX-IDE*	T/C	0.028
rs74233809	*NT5C2*	C/T	0.037
rs7076938	*ADRB1*	T/C	0.036
rs2421016	*PLEKHA1*	T/C	0.021
rs72851023	*INS-IGF2*	T/C	0.048
rs10830963	*MTNR1B*	G/C	0.023
rs11055034	*APOLD1*	C/A	0.022
rs139975827	*ABCC9*	G/A	0.025

rs12823128	*ITPR2*	T/C	0.021
rs1351394	*HMGA2*	T/C	0.044
rs7964361	*IGF1*	A/G	0.039
rs2324499	*LINC00332*	G/C	0.022
rs2854355	*RB1*	G/A	0.023
rs1819436	*RNF219-AS1*	C/T	0.033
rs12906125	*FES*	G/A	0.023
rs7402982	*IGF1R*	A/G	0.023
rs1011939	*GPR139*	G/A	0.022
rs113086489	*CLDN7*	T/C	0.031
rs144843919	*SUZ12P1-CRLF3*	G/A	0.066
rs12942207	*SP6-SP2*	C/T	0.022
rs61154119	*ACTL9/LOC105372267*	T/G	0.028
rs10402712	*PEPD*	A/G	0.022
rs6040076	*JAG1*	C/G	0.023
rs28530618	*C20orf203*	A/G	0.026
rs6016377	*MAFB*	T/C	0.024
rs2229742	*NRIP1*	G/C	0.036
rs134594	*KREMEN1*	C/T	0.023
rs62240962	*SREBF2*	C/T	0.047
rs11096402	*PLAC1*	G/A	0.028

SUPPLEMENTARY DATA

Supplementary Table 4. Associations between maternal FPG, fetal genetic score for birth weight and corrected birth weight for participants of European ancestry in EFSOCH and HAPO. Range of maternal FPG for each tertile; lowest 3.2-4.3 mmol/L, middle 4.4-4.6 mmol/L, highest 4.6-6.7 mmol/L.

European ancestry (n=2,051)	Beta coefficient (β)	95% CI	*P* value	Adjusted R^2
Corrected birth weight and maternal FPG as continuous measure	301 grams per mmol/L	250-353 grams per mmol/L	5.0x10^{-31}*	0.07
Corrected birth weight and maternal FPG as ascending tertiles	112 grams per one FPG tertile higher	88-135 grams per one FPG tertile higher	1.8x10^{-10}*	0.04
Corrected birth weight and fetal GS as continuous measure	18 grams per one fetal GS unit	13-23 grams per one fetal GS unit	6.3x10^{-14}*	0.03
Corrected birth weight and fetal GS as ascending tertiles	87 grams per one fetal GS tertile higher	63-111 grams per one fetal GS tertile higher	9.5x10^{-13}*	0.02
Maternal FPG and fetal GS as continuous measures	0.002 mmol/L per one fetal GS unit	-0.002-0.007 mmol/L per one fetal GS unit	0.25	-0.001

CI, confidence interval; EFSOCH, Exeter Family Study of Childhood Health; FPG; fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study

SUPPLEMENTARY DATA

Supplementary Table 5. Associations between maternal FPG, fetal genetic score for birth weight and corrected birth weight for participants of Thai ancestry in HAPO. Range of maternal FPG for each tertile; lowest 3.2-4.3 mmol/L, middle 4.3-4.6 mmol/L, highest 4.7-5.7 mmol/L.

Thai ancestry (n=1,168)	Beta coefficient (β)	95% CI	P value	Adjusted R^2
Corrected birth weight and maternal FPG as continuous measure	191 grams per mmol/L	128-253 grams per mmol/L	$2.3 \times 10^{-09*}$	0.03
Corrected birth weight and maternal FPG as ascending tertiles	84 grams per one FPG tertile higher	58-111 grams per one FPG tertile higher	$5.3 \times 10^{-10*}$	0.03
Corrected birth weight and fetal GS as continuous measure	14 grams per one fetal GS unit	8-20 grams per one fetal GS unit	$5.7 \times 10^{-06*}$	0.02
Corrected birth weight and fetal GS as ascending tertiles	53 grams per one fetal GS tertile higher	27-80 grams per one fetal GS tertile higher	$8.8 \times 10^{-05*}$	0.01
Maternal FPG and fetal GS as continuous measures	-0.001 mmol/L per one fetal GS unit	-0.007-0.004 mmol/L per one fetal GS unit	0.60	-6.0×10^{-04}

*P<0.001

CI, confidence interval; EFSOCH, Exeter Family Study of Childhood Health; FPG; fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study

SUPPLEMENTARY DATA

Supplementary Table 6. Associations between maternal FPG, fetal genetic score for birth weight and corrected birth weight for participants of Afro-Caribbean ancestry in HAPO. Range of maternal FPG for each tertile; lowest 3.4-4.3 mmol/L, middle 4.4-4.6 mmol/L, highest 4.7-5.9 mmol/L.

Afro-Caribbean ancestry (n=1,072)	Beta coefficient (β)	95% CI	P value	Adjusted R^2
Corrected birth weight and maternal FPG as continuous measure	166 grams per mmol/L	97-235 grams per mmol/L	2.7×10^{-06}*	0.02
Corrected birth weight and maternal FPG as ascending tertiles	77 grams per one FPG tertile higher	46-108 grams per one FPG tertile higher	1.4×10^{-06}*	0.02
Corrected birth weight and fetal GS as continuous measure	10 grams per one fetal GS unit	3-17 grams per one fetal GS unit	0.006†	0.006
Corrected birth weight and fetal GS as ascending tertiles	34 grams per one fetal GS tertile higher	2-66 grams per one fetal GS tertile higher	0.04†	0.003
Maternal FPG and fetal GS as continuous measures	-0.002 mmol/L per one fetal GS unit	-0.005-0.01 mmol/L per one fetal GS unit	0.33	-6.2×10^{-05}

*$P<0.001$ †$P<0.05$

CI, confidence interval; EFSOCH, Exeter Family Study of Childhood Health; FPG; fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study

Supplementary Table 7. Associations between maternal FPG, fetal genetic score for birth weight and corrected birth weight for participants of Mexican-American ancestry in HAPO. Range of maternal FPG for each tertile; lowest 3.8-4.4 mmol/L, middle 4.5-4.8 mmol/L, highest 4.9-5.9 mmol/L.

Mexican-American ancestry (n=602)	Beta coefficient (β)	95% CI	*P* value	Adjusted R^2
Corrected birth weight and maternal FPG as continuous measure	168 grams per mmol/L	85-251 grams per mmol/L	7.6x10^{-05}*	0.02
Corrected birth weight and maternal FPG as ascending tertiles	92 grams per one FPG tertile higher	52-132 grams per one FPG tertile higher	8.4x10^{-06}*	0.03
Corrected birth weight and fetal GS as continuous measure	10 grams per one fetal GS unit	2-18 grams per one fetal GS unit	0.02†	0.007
Corrected birth weight and fetal GS as ascending tertiles	69 grams per one fetal GS tertile higher	29-109 grams per one fetal GS tertile higher	8.4x10^{-04}*	0.02
Maternal FPG and fetal GS as continuous measures	-0.004 mmol/L per one fetal GS unit	-0.01-0.004 mmol/L per one fetal GS unit	0.30	1.5x10^{-04}

*$P<0.001$ †$P<0.05$

CI, confidence interval; EFSOCH, Exeter Family Study of Childhood Health; FPG; fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study

SUPPLEMENTARY DATA

Supplementary Table 8. Mean and SEM for birth weight corrected for sex and gestational age in grams, in combined maternal FPG and fetal genetic score for birth weight tertiles in participants of European ancestry in EFSOCH and HAPO. Mean birth weight for all subjects of European ancestry was 3,448 ± 10 g.

European ancestry	Fetal GS tertiles			
Maternal FPG tertiles	Lowest (n=679)	Middle (n=690)	Highest (n=682)	*P* value for linear trend across fetal GS tertiles
Lowest (n=696) Range FPG=3.2-4.3 mmol/L	3348 (29)	3345 (28)	3462 (28)	0.004*
Middle (n=645) Range FPG=4.3-4.6 mmol/L	3413 (30)	3495 (28)	3567 (32)	<0.001[†]
Highest (n=710) Range FPG=4.6-6.7 mmol/L	3494 (29)	3578 (33)	3727 (33)	<0.001[†]
P value for trend across maternal FPG tertiles	0.001[†]	<0.001[†]	<0.001[†]	

*$P <0.05$, †$P \leq 0.001$

EFSOCH, Exeter Family Study of Child Health; FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study; SEM, standard error of the mean

Supplementary Table 9. Mean and SEM for birth weight corrected for sex and gestational age in grams, in combined maternal FPG and fetal genetic score for birth weight tertiles in participants of Thai ancestry in HAPO.

Thai ancestry	Fetal GS tertiles			
Maternal FPG tertiles	Lowest (n=386)	Middle (n=396)	Highest (n=386)	*P* value for linear trend across GS tertiles
Lowest (n=527) Range FPG=3.2-4.3 mmol/L	2943 (28)	3101 (27)	3067 (28)	0.002*
Middle (n=353) Range FPG=4.4-4.6 mmol/L	3042 (34)	3132 (34)	3168 (33)	0.008*
Highest (n=288) Range FPG=4.7-5.7 mmol/L	3187 (37)	3191 (39)	3255 (39)	0.09
P value for trend across maternal FPG tertiles	<0.001[†]	0.06	<0.001[†]	

*$P<0.05$, †$P<0.001$

FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study; SEM, standard error of the mean

SUPPLEMENTARY DATA

Supplementary Table 10. Mean and SEM for birth weight corrected for sex and gestational age in grams, in combined maternal FPG and fetal genetic score for birth weight tertiles in participants of Afro-Caribbean ancestry in HAPO.

Afro-Caribbean ancestry	Fetal GS tertiles			
Maternal FPG tertiles	Lowest (n=354)	Middle (n=364)	Highest (n=354)	*P* value for linear trend across GS tertiles
Lowest (n=452) Range FPG=3.4-4.3 mmol/L	3048 (34)	3102 (34)	3132 (35)	0.07
Middle (n=318) Range FPG=4.4-4.6 mmol/L	3126 (43)	3186 (41)	3188 (40)	0.29
Highest (n=302) Range FPG=4.7-5.9 mmol/L	3224 (42)	3247 (42)	3275 (44)	0.45
P value for trend across maternal FPG tertiles	0.001*	0.01*	0.01*	

*$P<0.05$

FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study; SEM, standard error of the mean

SUPPLEMENTARY DATA

Supplementary Table 11. Mean and SEM for birth weight corrected for sex and gestational age in grams, in combined maternal FPG and fetal genetic score tertiles in subjects of Mexican-American ancestry in HAPO.

Mexican-American ancestry	Fetal GS tertiles			
Maternal FPG tertiles	Lowest (n=199)	Middle (n=204)	Highest (n=199)	*P* value for linear trend across GS tertiles
Lowest (n=216) Range FPG =3.8-4.4 mmol/L	3366 (47)	3392 (44)	3492 (49)	0.05
Middle (n=205) Range FPG =4.5-4.8 mmol/L	3409 (48)	3396 (51)	3554 (44)	0.03*
Highest (n=181) Range FPG=4.9-5.9 mmol/L	3528 (51)	3600 (51)	3685 (55)	0.05
P value for trend across maternal FPG tertiles	0.02*	0.003*	0.02*	

*$P<0.05$

FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study; SEM, standard error of the mean

SUPPLEMENTARY DATA

Supplementary Table 12. Contingency table for participants of European ancestry showing the number and % of LGA in combined maternal FPG and fetal genetic score for birth weight tertiles, and odds ratios for LGA in the highest genetic score tertile relative to the lowest genetic score tertile, and highest FPG tertile relative to the lowest FPG tertile

	Fetal GS tertiles			OR for LGA highest vs lowest GS tertile (95% CI)
Maternal FPG tertiles	Lowest (n=679)	Middle (n=690)	Highest (n=682)	
Lowest (n=696) Range FPG = 3.2-4.3 mmol/L	19/230 (8.3%)	13/233 (5.6%)	31/233 (13.3%)	1.70 (0.93-3.11)
Middle (n=645) Range FPG = 4.3-4.6 mmol/L	13/228 (5.7%)	31/219 (14.2%)	36/198 (18.1%)	3.68 (1.89-7.15)*
Highest (n=710) Range FPG = 4.6-6.7 mmol/L	31/221 (14.0%)	45/238 (18.9%)	78/251 (31.1%)	2.76 (1.74-4.40)*
OR for LGA highest vs lowest FPG tertile (95% CI)	1.81 (0.99-3.31)	3.95 (2.07-7.53)*	2.94 (1.85-4.67)*	

*P value <0.001

CI, confidence interval; EFSOCH, Exeter Family Study of Childhood Health; FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study; LGA, large for gestational age; OR, odds ratio

SUPPLEMENTARY DATA

Supplementary Table 13. Contingency table for participants of Thai ancestry in HAPO showing the number and % of LGA in combined maternal FPG and fetal genetic score for birth weight tertiles, and odds ratios for LGA in the highest genetic score tertile relative to the lowest genetic score tertile, and highest FPG tertile relative to the lowest FPG tertile.

Thai ancestry	Fetal GS tertiles			OR for LGA highest vs lowest GS tertile (95% CI)
Maternal FPG tertiles	Lowest (n=386)	Middle (n=396)	Highest (n=386)	
Lowest (n=527) Range FPG=3.2-4.3 mmol/L	5/170 (2.9%)	17/187 (9.1%)	13/180 (7.2%)	2.57 (0.90-7.37)
Middle (n=353) Range FPG=4.4-4.6 mmol/L	6/113 (5.3%)	9/116 (7.8%)	10/124 (8.1%)	1.56 (0.55-4.45)
Highest (n=288) Range FPG=4.7-5.7 mmol/L	9/103 (8.7%)	9/93 (9.7%)	12/92 (13.0%)	1.57 (0.63-3.91)
OR for LGA highest vs lowest FPG tertile (95% CI)	3.16 (1.03-9.70)*	1.07 (0.46-2.50)	1.93 (0.84-4.41)	

*$P < 0.05$

CI, confidence interval; FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Pregnancy Outcome Study; LGA, large for gestational age; OR, odds ratio

SUPPLEMENTARY DATA

Supplementary Table 14. Contingency table for participants of Afro-Caribbean ancestry in HAPO showing the number and % of LGA in combined maternal FPG and fetal genetic score for birth weight tertiles, and odds ratios for LGA in the highest genetic score tertile relative to the lowest genetic score tertile, and highest FPG tertile relative to the lowest FPG tertile.

Afro-Caribbean ancestry	Fetal GS tertiles			OR for LGA highest vs lowest GS tertile (95% CI)
Maternal FPG tertiles	Lowest (n=354)	Middle (n=364)	Highest (n=354)	
Lowest (n=452) Range FPG=3.4-4.3 mmol/L	7/153 (4.6%)	9/153 (5.9%)	13/146 (8.9%)	2.04 (0.79-5.26)
Middle (n=318) Range FPG=4.4-4.6 mmol/L	4/98 (4.1%)	12/107 (11.2%)	9/113 (8.0%)	2.03 (0.61-6.82)
Highest (n=302) Range FPG=4.7-5.9 mmol/L	13/103 (12.6%)	11/104 (10.6%)	13/95 (13.7%)	1.10 (0.48-2.50)
OR for LGA highest vs lowest FPG tertile (95% CI)	3.01 (1.16-7.83)*	1.89 (0.76-4.74)	0.62 (0.27-1.39)	

***P*<0.05

CI, confidence interval; FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Pregnancy Outcome Study; LGA, large for gestational age; OR, odds ratio

Supplementary Table 15. Contingency table for participants of Mexican-American ancestry in HAPO showing the number and % of LGA in combined maternal FPG and fetal genetic score for birth weight tertiles, and odds ratios for LGA in the highest fetal genetic score tertile relative to the lowest fetal genetic score tertile, and highest FPG tertile relative to the lowest FPG tertile.

Mexican-American ancestry tertiles			Fetal GS	OR for LGA highest vs lowest GS tertile (95% CI)
Maternal FPG tertiles	Lowest (n=199)	Middle (n=204)	Highest (n=199)	
Lowest (n=216) Range FPG=3.8-4.4 mmol/L	3/70 (4.3%)	6/81 (7.4%)	7/65 (10.8%)	2.70 (0.67-10.90)
Middle (n=205) Range FPG=4.5-4.8 mmol/L	4/66 (6.1%)	7/59 (11.9%)	13/80 (16.3%)	3.00 (0.93-9.72)
Highest (n=181) Range FPG=4.9-5.9 mmol/L	9/63 (14.3%)	15/64 (23.4%)	13/54 (24.1%)	1.90 (0.74-4.88)
OR for LGA highest vs lowest FPG tertile (95% CI)	3.72 (0.96-14.43)	3.47 (1.27-9.53)*	2.62 (0.96-7.16)	

*$P<0.05$

CI, confidence interval; FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Pregnancy Outcome Study; LGA, large for gestational age; OR, odds ratio

Supplementary Table 16. Frequency of LGA by fetal genetic score for birth weight tertile in mothers with FPG ≥5.1 mmol/L. Odds ratio for LGA is relative to the lowest fetal genetic score for birth weight tertile.

Fetal GS tertiles	LGA, n (%)	OR for LGA	95% CI	*P* value
Lowest GS (n=47)	10 (21.3%)	1.00		
Middle GS (n=61)	18 (29.5%)	1.55	0.64-3.77	0.96
Highest GS (n=54)	23 (42.6%)	2.75	1.14-6.64	0.02*

*$P<0.05$

CI, confidence interval; EFSOCH, Exeter Family Study for Childhood Health; FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Adverse Pregnancy Outcome Study; LGA, large for gestational age; OR, odds ratio

Supplementary Table 17. The effect of fetal genetic score for birth weight on LGA in Thai, Afro-Caribbean and Mexican-American mothers in HAPO with a FPG ≥5.1 mmol/L. Odds ratio for LGA is relative to the lowest fetal genetic score for birth weight tertile.

Thai ancestry				
Fetal GS tertiles	LGA, n (%)	OR for LGA	95% CI	*P* value
Lowest GS (n=20)	5 (25.0%)	1.00		
Middle GS (n=13)	5 (38.5%)	1.88	0.42-8.47	0.41
Highest GS (n=16)	2 (12.5%)	0.43	0.07-2.58	0.35
Afro-Caribbean ancestry				
Fetal GS tertiles	LGA, n (%)	OR for LGA	95% CI	*P* value
Lowest GS (n=23)	4 (17.4%)	1.00		
Middle GS (n=25)	3 (12.0%)	0.65	0.13-3.27	0.60
Highest GS (n=21)	5 (23.8%)	1.48	0.34-6.48	0.60
Mexican-American ancestry				
Fetal GS tertiles	LGA, n (%)	OR for LGA	95% CI	*P* value
Lowest GS (n=37)	5 (13.5%)	1.00		
Middle GS (n=34)	5 (14.7%)	1.10	0.29-4.20	0.89
Highest GS (n=27)	8 (29.6%)	2.69	0.77-9.44	0.12

CI, confidence interval; FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Pregnancy Outcomes; LGA, large for gestational age; OR, odds ratio

SUPPLEMENTARY DATA

Supplementary Table 18. Associations of maternal glucose and fetal genetic score for birth weight with birth weight and skin fold thickness in EFSOCH and HAPO. Birth weight and skin fold thickness have been converted into Z-scores (standard deviation units) to enable comparison. Data is for participants of European ancestry.

Exposure trait	Outcome	Effect (standard deviation [SD] change per 1 tertile higher exposure trait)	95% CI	*P* value
Glucose tertiles (n=2,051)	Birth weight	0.240	0.189-0.292	<0.001
Fetal GS tertiles (n=2,051)	Birth weight	0.188	0.136-0.240	<0.001
Glucose tertiles (n=1,996)	Skin fold thickness	0.274	0.222-0.325	<0.001
Fetal GS tertiles (n=1,996)	Skin fold thickness	0.177	0.125-0.229	<0.001

CI, confidence interval; EFSOCH; Exeter Family Study for Childhood Health; FPG, fasting plasma glucose; GS, genetic score for birth weight; HAPO, Hyperglycemia and Pregnancy Outcome

SUPPLEMENTARY DATA

Supplementary Figure 1. Formula showing how a weighted genetic score (GS) is calculated. The number of alleles for each single-nucleotide polymorphism (SNP) included in the score is multiplied by its weight, or beta, and divided by a sum of all beta values multiplied by the total number of SNPs.

$$\text{Weighted GS} = \frac{\text{sum (number of alleles for each SNP (0, 1 or 2) * Beta)}}{\text{sum of Beta * total number of SNPs}}$$
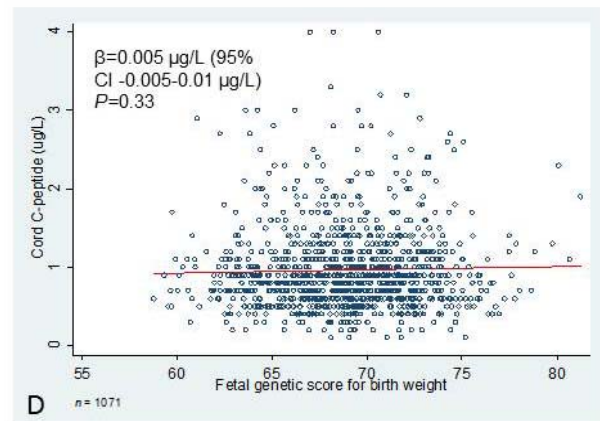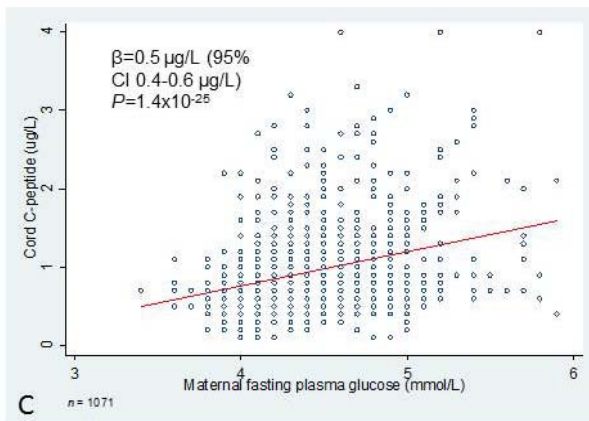
SUPPLEMENTARY DATA

Supplementary Figure 2. Scatter plots with linear regression lines (red line) showing associations for maternal FPG and fetal genetic score for birth weight with cord C-peptide in participants of Thai ancestry (A and B respectively, n = 1167), Afro-Caribbean ancestry (C and D respectively, n = 1071) and Mexican-American ancestry (E and F respectively, n = 602). Cord C-peptide levels ≥4 µg/L are truncated at 4 µg/L. CI, confidence interval; FPG, fasting plasma glucose.

Thai ancestry
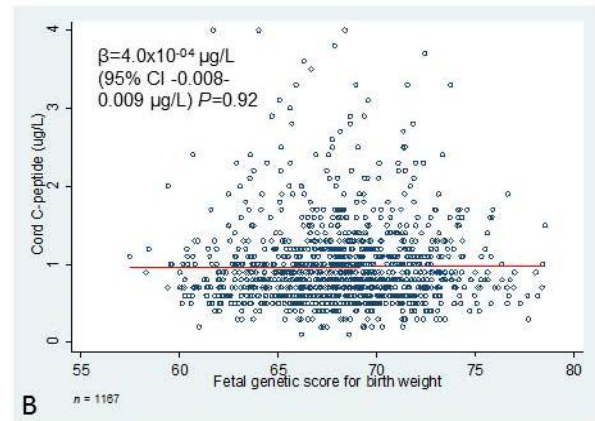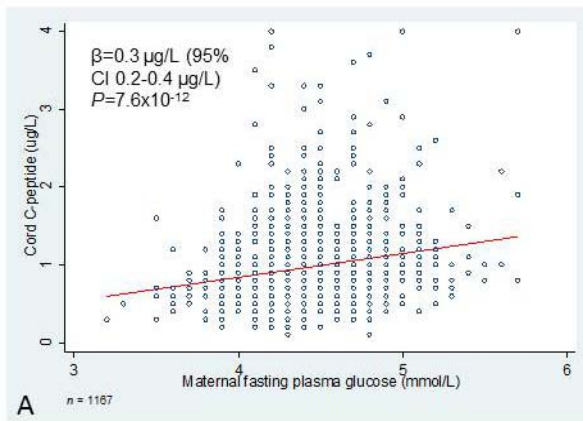
Afro-Caribbean ancestry

Mexican-American ancestry