

SUPPLEMENTARY DATA

**Supplementary Table 1.** Univariate logistic regression for birthweight over the 90<sup>th</sup> centile with maternal, infant and cord blood .

Variable	Metformin		Insulin	
	Exp(B) (95%CI)	P	Exp(B) (95%CI)	P
<i>Maternal variables at baseline</i>				
Ethnicity (Caucasian vs non-Caucasian, Caucasian=1)	0.69 (0.35 – 1.35) [236]	0.27	0.61 (0.29 – 1.27) [242]	0.19
Parity (nulliparous vs multiparous) nulliparous = 1	0.56 (0.26 – 1.21) [235]	0.14	0.32 (0.012 – 0.85) [241]	0.02
Maternal age (years)	1.02 (0.96 – 1.08) [236]	0.59	0.97 (0.91 – 1.04) [424]	0.43
Smoking in pregnancy (yes=1)	1.80 (0.82 – 3.95) [236]	0.14	0.71 (0.23 – 2.14) [242]	0.54
BMI at baseline (kg/m <sup>2</sup> )	1.05 (1.01 – 1.09) [236]	0.03	1.04 (0.99 – 1.09) [241]	0.11
Triglycerides (mmol/L)	1.28 (0.90 – 1.81) [213]	0.17	1.83 (1.14 – 2.93) [188]	0.01
Fasting glucose (mmol/L)	1.31 (0.94 – 1.83) [215]	0.11	0.99 (0.61 – 1.61) [194]	0.96
HbA1c (%)	1.61 (0.98 – 2.64) [223]	0.06	2.04 (1.18 – 3.54) [211]	0.01
C-Peptide (µg/L)	1.81 (0.99 – 3032) [64]	0.05	0.87 (0.29 – 2.65) [61]	0.81
LDL cholesterol (mmol/L)	0.84 (0.57 – 1.25) [151]	0.40	1.99 (0.68 – 1.46) [141]	0.98
Cholesterol (mmol/L)	0.87 (0.61 – 1.24) [152]	0.43	1.11 (0.82 – 1.52) [139]	0.50
HDL cholesterol (mmol/L)	1.22 (0.34 – 4.31) [154]	0.76	0.36 (0.09 – 1.36) [143]	0.13
<i>Maternal variables at 36 weeks gestation</i>				
BMI (kg/m <sup>2</sup> )	1.05 (1.00 – 1.09) [203]	0.04	1.06 (1.00 – 1.12) [221]	0.02
Weight gain (kg)	1.07 (0.94 – 1.20) [203]	0.30	1.02 (0.92 – 1.14) [221]	0.70
Fasting glucose (mmol/L)	1.77 (1.03 – 3.04) [188]	0.04	2.06 (1.21 – 3.50) [205]	0.01
HbA1c (%)	3.22 (1.57 – 6.61) [196]	0.001	2.35 (1.31 – 4.24) [210]	0.004
Triglycerides (mmol/L)	1.37 (0.98 – 1.92) [168]	0.07	1.36 (0.86 – 2.15) [188]	0.20
C-peptide (µg/L)	1.57 (0.64 – 3.85) [51]	0.33	2.57 (0.75 – 8.77) [51]	0.13
HDL cholesterol (mmol/L)	0.73 (0.24 – 2.23) [130]	0.58	0.65 (0.19 – 2.22) [141]	0.49
Cholesterol (mmol/L)	0.77 (0.53 – 1.13) [127]	0.18	1.04 (0.71 – 1.52) [141]	0.85
LDL cholesterol (mmol/L)	0.68 (0.43 – 1.09) [125]	0.11	1.08 (0.69 – 1.70) [139]	0.73
<i>Infant and cord blood variables</i>				
Sex (female = 1)	1.03 (0.52 – 2.02)[236]	0.94	0.76 (0.37 – 1.6) [242]	0.45
Days from baseline to delivery	1.00 (0.97 – 1.00) [236]	0.07	0.98 (0.96 – 1.00) [242]	0.03
Triglycerides (mmol/L)	0.06 (0.005 – 0.65) [220]	0.02	0.40 (0.06 – 2.89) [233]	0.37
Glucose (mmol/L)	0.96 (0.75 – 1.22) [218]	0.72	0.77 (0.57 – 1.03) [233]	0.08
LDL cholesterol (mmol/L)	0.35 (0.03 – 5.04) [72]	0.44	4.31( 0.045 – 41.59) [71]	0.21
HDL cholesterol (mmol/L)	0.89 (0.12 – 6.82) [72]	0.91	2.45(0.18 – 33.72) [71]	0.51
Leptin (µg/L)	1.08 (1.02 – 1.15) [44]	0.01	1.09 (1.02 – 1.16) [43]	0.01
C-peptide (µg/L)	28.24 (1.00 – 799.20) [31]	0.05	16.81 (1.15 – 253.34) [30]	0.04

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**Supplementary Table 2.** Univariate logistic regression for birthweight less than the 10<sup>th</sup> centile with maternal, infant and cord blood variables.

Variable	Metformin		Insulin	
	Exp(B) (95%CI) [n]	P	Exp(B) (95%CI)	P
<i>Maternal variables at baseline</i>				
Ethnicity (Caucasian vs non-Caucasian, Caucasian=1)	0.84 (0.36 – 1.99 ) [236]	0.70	0.41 (0.18 – 0.92) [242]	0.03
Parity (nulliparous vs multiparous) nulliparous = 1	0.88 (0.34 – 2.25) [235]	0.78	1.44 (0.66 – 3.14) [241]	0.36
Maternal age (years)	1.03 (0.95 – 1.12) [236]	0.49	1.06 (0.98 – 1.14) [242]	0.14
Smoking in pregnancy (yes=1)	0.92 (0.86 – 0.99) [236]	0.02	0.96 (0.91 – 1.02) [241]	0.20
BMI at baseline (kg/m <sup>2</sup> )	1.24 (0.43 – 3.54) [236]	0.69	1.12 (0.40 – 3.13) [242]	0.83
Triglycerides (mmol/L)	0.90 (0.56 – 1.46) [213]	0.68	0.59 (0.32 – 1.11) [188]	0.10
Fasting glucose (mmol/L)	0.82 (0.50 – 1.35) [215]	0.44	0.96 (0.59 – 1.55) [194]	0.86
HbA1c (%)	0.59 (0.27 – 1.31) [223]	0.20	1.45 (0.83 – 2.54) [211]	0.20
C-Peptide (µg/L)	0.38 (0.12 – 1.16) [64]	0.09	1.93 (0.59 – 6.29) [61]	0.27
LDL cholesterol (mmol/L)	1.04 (0.75 – 1.45) [151]	0.82	0.61 (0.37 – 0.99) [141]	0.04
Cholesterol (mmol/L)	1.05 (0.77 – 1.44) [152]	0.74	0.74 (0.51 – 1.06) [139]	0.10
HDL cholesterol (mmol/L)	1.35 (0.39 – 4.64) [154]	0.63	2.61 (0.81 – 8.39) [143]	0.11
<i>Maternal variables at 36 weeks gestation</i>				
BMI (kg/m <sup>2</sup> )	0.91 (0.85 – 0.99) [203]	0.02	0.96 (0.90 – 1.02) [221]	0.16
Weight gain (kg)	0.94 (0.79 – 1.11) [203]	0.46	1.07 (0.97 – 1.19) [221]	0.19
Fasting glucose (mmol/L)	0.77 (0.36 – 1.64) [188]	0.50	0.90 (0.50 – 1.62) [205]	0.73
HbA1c (%)	0.40 (0.16 – 1.01) [196]	0.05	1.04 (0.57 – 1.89) [210]	0.90
Triglycerides (mmol/L)	0.52 (0.27 – 1.00) [168]	0.05	0.67 (0.39 – 1.17) [188]	0.16
C-peptide (µg/L)	0.15 (0.023 – 1.29)[51]	0.08	4.51 (0.56 – 36.32) [51]	0.16
HDL cholesterol (mmol/L)	1.02 (0.29 – 3.58) [130]	0.97	5.66 (1.61 – 19.93) [141]	0.01
Cholesterol (mmol/L)	0.97 (0.72 – 1.32) [127]	0.85	0.82 (0.51 – 1.30) [141]	0.40
LDL cholesterol (mmol/L)	1.00 (0.74 – 1.34) [125]	0.98	0.61 (0.34 – 1.11) [139]	0.11
<i>Infant and cord blood variables</i>				
Sex (female = 1)	1.10 (0.46 – 2.59) [236]	0.83	0.85 (0.40 – 1.81) [242]	0.67
Days from baseline to delivery	1.01 (0.99 – 1.02) [236]	0.48	1.02 (1.00 – 1.03)[242]	0.05
Triglycerides (mmol/L)	16.17 (2.55 – 102.51) [220]	0.003	4.50 (1.02 – 19.92) [233]	0.05
Glucose (mmol/L)	1.13 (0.84 – 1.52) [218]	0.42	1.27 (1.01 – 1.60) [233]	0.04
LDL cholesterol (mmol/L)	1.22 (0.10 – 15.51) [72]	0.88	0.06 (0 - 19.81) [71]	0.35
HDL cholesterol (mmol/L)	1.25 (0.10 – 15.39) [72]	0.86	0.08 (0 – 7.20) [71]	0.28
Leptin (µg/L)	0.85 (0.70 – 1.02) [44]	0.08	0.91 (0.84 – 1.00) [43]	3.95
C-peptide (µg/L)	0.05 (0 – 2.78) [31]	0.14	0.03 (0 – 107.72) [31]	0.41

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**Supplementary Table 3.** Univariate logistic regression for birthweight less than the 10<sup>th</sup> centile with maternal, infant and cord blood variables. All adjusted for maternal age, ethnicity, parity, maternal smoking, infant sex, time from baseline to delivery and maternal BMI at baseline\*

Variable	Metformin		Insulin	
	Exp(B) (95%CI) [n]	P	Exp(B) (95%CI) [n]	P
<i>Maternal plasma variables at baseline</i>				
C-peptide (µg/L)	0.22 (0.04 – 1.20) [64]	0.08	4.01 (0.41 – 39.13) [61]	0.23
HbA1c (%)	0.50 (0.20 – 1.23) [223]	0.13	1.34 (0.69 – 2.59) [210]	0.40
Triglycerides (mmol/L)	0.89 (0.55 – 1.43) [213]	0.63	0.56 (0.29 – 1.09) [187]	0.09
Fasting glucose (mmol/L)	0.84 (0.52 – 1.37) [215]	0.49	0.94 (0.54 – 1.61) [193]	0.81
HDL cholesterol (mmol/L)	0.99 (0.27 – 3.70)[154]	0.99	1.55 (0.40 – 6.06) [143]	0.53
LDL cholesterol (mmol/L)	1.18(0.80 – 1.75)[151]	0.41	0.80 (0.46 – 1.38) [141]	0.42
Cholesterol (mmol/L)	1.17 (0.81 – 1.68) [152]	0.41	0.85 (0.56 – 1.31) [139]	0.47
<i>Maternal plasma variables at 36 weeks gestation</i>				
Fasting glucose (mmol/L)	0.99 (0.45 – 2.22) [187]	0.99	0.93 (0.50 – 1.74) [204]	0.82
HbA1c (%)	0.41 (0.15 – 1.15) [195]	0.09	0.79 (0.38 – 1.63) [209]	0.53
Triglycerides (mmol/L)	0.53 (0.28 – 1.01) [167]	0.06	0.60 (0.33 – 1.09) [187]	0.09
HDL cholesterol (mmol/L)	0.72 (0.19 – 2.81) [130]	0.64	4.38 (0.97 – 19.92) [141]	0.06
Cholesterol (mmol/L)	0.99 (0.72 – 1.35) [127]	0.93	1.06 (0.62 – 1.80) [141]	0.84
LDL cholesterol (mmol/L)	1.1 (0.74 – 1.38) [125]	0.94	0.92 (0.47 – 1.83) [139]	0.82
<i>Cord plasma variables</i>				
Triglycerides (mmol/L)	27.61 (2.97 – 256.98) [219]	0.004	8.53 (1.55 – 46.84) [231]	0.01
Glucose (mmol/L)	1.04 (0.75 – 1.45) [217]	0.80	1.29 (1.00 – 1.66) [231]	0.05
LDL cholesterol (mmol/L)	1.47 (0.07 – 28.90) [72]	0.80	0.04 (0 – 65.92) [71]	0.39
HDL cholesterol (mmol/L)	0.73 (0.04 – 11.91) [72]	0.82	0 (0 – 7.00) [71]	0.10
Leptin (µg/L)	0.65 (0.42 – 1.00) [44]	0.05	0.92 (0.83 – 1.03) [43]	0.15

\* C-peptide at 36 weeks and in cord plasma were not able to be analyzed due to small numbers