SUPPLEMENTARY DATA

Supplementary Table S1. Characteristics of HAPO FUS Participants and Non-Participants

HAPO Maternal Characteristics	Participants N=4832	Non-Participants N=10980	Participants N=4832	Non-Participants N=10980
	Unweighted Summaries		**Weighted Summaries***	
	Mean (SD)	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**
Age at OGTT(yrs)	29.9 (5.7)	29.1 (5.7)	30.0 (5.1)	29.1 (5.3)
Body Mass Index (BMI)	27.5 (4.9)	27.5 (5.1)	27.5 (4.6)	27.5 (4.7)
Height (cm)	161.8 (6.8)	160.7 (7.3)	161.1 (6.2)	160.9 (6.3)
Fasting Plasma Glucose (mmol/l)	4.5 (0.4)	4.5 (0.4)	4.5 (0.4)	4.5 (0.4)
1-hr Plasma Glucose (mmol/l)	7.4 (1.7)	7.5 (1.7)	7.5 (1.7)	7.5 (1.7)
2-hr Plasma Glucose (mmol/l)	6.1 (1.3)	6.2 (1.3)	6.2 (1.3)	6.2 (1.3)
	N (%)	**N (%)**	**(%)**	**(%)**
GDM	683 (14.1)	1879 (17.1)	(14.9)	(16.9)
Race/Ethnicity				
White, non-Hispanic	2287 (47.3)	4705 (42.9)	(44.5)	(44.1)
Hispanic	507 (10.5)	1047 (9.5)	(10.3)	(9.6)
Black, non-Hispanic	775 (16.0)	1551 (14.1)	(14.8)	(14.6)
Asian	1176 (24.3)	3424 (31.2)	(28.5)	(29.3)
Other	87 (1.8)	253 (2.3)	(1.8)	(2.3)

* Weighted summaries are weighted means and standard deviations or weighted percentages based on field-center-specific summary statistics with weights proportional to the total eligible population at the field center.

**GDM=gestational diabetes mellitus defined by IADPSG criteria (1 or more glucose values from a 75g OGTT equals or exceeds FPG 5.1 mmol/l, 1-hr 10.0 mmol/l, 2-hr 8.5 mmol/l)

Supplementary Table S2. Association of Maternal GDM Status during Pregnancy with Continuous Child Metabolic Outcomes

Continuous Child Glucose Outcome	Model 5 Beta (95% CI) p-value, R^2	Model 6 Beta (95% CI) p-value, R^2	Model 7 Beta (95% CI) p-value, R^2	Model 8 Beta (95% CI) p-value, R^2
Fasting glucose (mmol/l)	0.021 (-0.0096-0.052) p=0.18, 0.23	0.021 (-0.0095-0.053) p=0.17, 0.23	0.021 (-0.0096-0.052) p=0.18, 0.23	0.021 (-0.0096-0.052) p=0.18, 0.23
30 min glucose (mmol/l)	0.26 (0.15-0.38) p<0.0001, 0.12	0.28 (0.17-0.40) p<0.0001, 0.12	0.27 (0.15-0.38) p<0.0001, 0.12	0.28 (0.17-0.40) p<0.0001, 0.12
1-h glucose (mmol/l)	0.31 (0.16-0.46) p<0.0001, 0.079	0.33 (0.18-0.48) p<0.0001, 0.081	0.31 (0.16-0.45) p<0.0001, 0.079	0.33 (0.18-0.48) p<0.0001, 0.081
2-h glucose (mmol/l)	0.17 (0.067-0.26) p=0.0010, 0.11	0.18 (0.083-0.28) p=0.0003, 0.11	0.16 (0.064-0.26) p=0.0012, 0.11	0.18 (0.080-0.28) p=0.0004, 0.11
Sum of glucose z-scores	0.58 (0.35-0.82) p<0.001, 0.18	0.62 (0.39-0.86) p<0.001, 0.18	0.58 (0.35-0.82) p<0.001, 0.18	0.62 (0.39-0.86) p<0.001, 0.18
Matsuda index	-59.8 (-113.0- -6.6) p=0.028, 0.40	-60.9 (-114.5- -7.4) p=0.026, 0.40	-58.5 (-112.6- -4.4) p=0.034, 0.38	-58.4 (-112.8- -4.0) p=0.035, 0.38
Insulinogenic index	-0.055 (-0.12-0.0083) p=0.091, 0.076	-0.064 (-0.13- -0.0012) p=0.046, 0.078	-0.055 (-0.12-0.0077) p=0.087, 0.074	-0.065 (-0.13-0.0018) p=0.043, 0.077
Disposition index	-0.11 (-0.16- -0.05) p=0.0001, 0.78	-0.11 (-0.17- -0.06) p<0.0001, 0.79	-0.11 (-0.16- -0.05) p=0.0001, 0.77	-0.11 (-0.17- -0.06) p<0.0001, 0.78

*GDM=gestational diabetes mellitus defined by IADPSG criteria (1 or more glucose values from a 75g OGTT equals or exceeds FPG 5.1 mmol/l, 1-hr 10.0 mmol/l, 2-hr 8.5 mmol/l). Disposition index was log transformed for analysis.

Model 1: Adjusted for field center + child age, sex, pubertal status (Tanner stage 1, 2/3, 4/5, sex x Tanner stage interaction) + maternal variables at pregnancy OGTT (age, height, mean arterial pressure, parity (0, 1+), smoking (yes/no), drinking (yes/no), gestational age), child's family history of diabetes in first degree relatives. Model 5: Model 1 + child's percent body fat. Model 6: Model 1 + maternal BMI at pregnancy OGTT + child's percent body fat. Model 7: Model 1 + child's sum of skinfolds. Model 8: Model 1 + maternal BMI at pregnancy OGTT + child's sum of skinfolds.

SUPPLEMENTARY DATA

Supplementary Table S3. Association of Maternal GDM Status during Pregnancy with Dichotomous Child Metabolic Outcomes

Dichotomous Child Glucose Outcome	Model 5		Model 6		Model 7		Model 8	
	OR (95% CI) p-value, C-statistic	Risk Difference (95% CI) p-value	OR (95% CI) p-value, C-statistic	Risk Difference (95% CI) p-value	OR (95% CI) p-value, C-statistic	Risk Difference (95% CI) p-value	OR (95% CI) p-value, C-statistic	Risk Difference (95% CI) p-value
IFG-ADA	1.09 (0.78-1.52) p=0.60 C=0.78	0.0057 (-0.019-0.031) p=0.66	1.09 (0.78-1.53) p=0.61 C=.78	0.0057 (-0.019-0.031) p=0.65	1.09 (0.78-1.52) p=0.60 C=.78	0.0057 (-0.019-0.031) p=0.65	1.09 (0.78-1.53) p=0.61 C=.78	0.0057 (-0.019-0.031) p=0.65
IGT	1.82 (1.31-2.52) p=0.0003 C=0.72	0.043 (0.017-0.068) p=0.0010	1.92 (1.38-2.67) p=0.0001 C=0.72	0.045 (0.020-0.071) p=0.0005	1.82 (1.31-2.52) p=0.0003 C=0.72	0.042 (0.017-0.067) p=0.0012	1.92 (1.38-2.68) p=0.0001 C=0.72	0.045 (0.019-0.070) p=0.0006

GDM=gestational diabetes mellitus defined by IADPSG criteria (1 or more glucose values from a 75g OGTT equals or exceeds FPG 5.1 mmol/l, 1-hr 10.0 mmol/l, 2-hr 8.5 mmol/l)

IFG-ADA=impaired fasting glucose defined by ADA criteria (FPG 5.6-6.9 mmol/l)

IGT=-impaired glucose tolerance (2-h PG 7.8-11.0 mmol/l)

Model 1: Adjusted for field center + child age, sex, pubertal status (Tanner stage 1, 2/3, 4/5, sex x Tanner stage interaction) + maternal variables at pregnancy OGTT (age, height, mean arterial pressure, parity (0, 1+), smoking (yes/no), drinking (yes/no), gestational age), child's family history of diabetes in first degree relatives. Model 5: Model 1 + child's percent body fat. Model 6: Model 1 + maternal BMI at pregnancy OGTT + child's percent body fat. Model 7: Model 1 + child's sum of skinfolds. Model 8: Model 1 + maternal BMI at pregnancy OGTT + child's sum of skinfolds.

Supplementary Table S4. Tanner Stage Specific Associations between Maternal GDM during pregnancy and Child Metabolic Outcomes

	Tanner Stage 1	Tanner Stage 2/3	Tanner Stage 4/5
Child Dichotomous Outcomes	OR* (95% CI), p		
IFG-ADA	1.22 (0.57-2.62), p=0.61	1.54 (0.90-2.62), p=0.11	0.41 (0.16-1.02), p=0.06
IGT	2.17 (0.85-5.58), p=0.11	1.60 (0.93-2.77), p=0.09	3.02 (1.45-6.31), p=0.003
Child Continuous Outcomes	Adjusted Mean Difference* (95% CI), p		
Fasting glucose (mmol/l)	0.015 (-0.061-0.091), p=0.70	0.020 (-0.031-0.072), p=0.44	-0.0080 (-0.073-0.057), p=0.81
30 min glucose (mmol/l)	0.11 (-0.17-0.39), p=0.44	0.34 (0.15-0.52), p=0.0005	0.41 (0.18-0.63), p=0.0005
1-h glucose (mmol/l)	0.16 (-0.20-0.53), p=0.37	0.46 (0.21-0.72), p=0.0004	0.49 (0.19-0.78), p=0.0013
2-h glucose (mmol/l)	0.10 (-0.12-0.33), p=-.38	0.13 (-0.032-0.30), p=0.12	0.28 (0.081-0.49), p=0.0062
Sum of glucose z-scores	0.16 (-0.42-0.74), p=0.59	0.75 (0.35-1.15), p=0.0002	0.89 (0.38-1.39), p=0.0006
Matsuda index	-67.3 (-204.1-69.5), p=0.34	-102.0 (-196.3- -7.7), p=0.034	-50.4 (-145.7-45.0), p=0.30
Insulinogenic index	-0.04 (-0.18-0.10), p=0.60	-0.03 (-0.12-0.06), p=0.47	-0.23 (-0.40- -0.06), p=0.010
Disposition index	-0.07 (-.19-0.05), p=0.28	-0.13 (-0.23- -0.05), p=0.003	-0.20 (-0.31- -0.09), p=0.0005

GDM=gestational diabetes mellitus defined by IADPSG criteria (1 or more glucose values from a 75g OGTT equals or exceeds FPG 5.1 mmol/l, 1-hr 10.0 mmol/l, 2-hr 8.5 mmol/l)

*Association results use fully adjusted Model 4: Adjusted for field center + child age, sex, pubertal status (Tanner stage 1, 2/3, 4/5, sex x Tanner stage interaction) + maternal variables at pregnancy OGTT (age, height, mean arterial pressure, parity (0, 1+), smoking (yes/no), drinking (yes/no), gestational age), child's family history of diabetes in first degree relatives + maternal BMI at pregnancy OGTT + child's BMI *z*-score.

Supplementary Table S5. Child Metabolic Outcomes for Maternal GDM during Pregnancy by Carpenter-Coustan Criteria, GDM by IADPSG/WHO Criteria only, and No GDM

|	Carpenter-Coustan GDM	IADPSG/WHO Only GDM	No GDM	IADPSG/WHO Only GDM v. No GDM*	
Child Dichotomous Outcomes	**N/N Total (%)**			**OR (95% CI)**	**p-value**
IFG-ADA	15/143 (10.5)	39/444 (8.8)	262/3563 (7.4)	0.99 (0.65-1.52)	0.97
IGT	25/140 (17.9)	36/436 (8.3)	177/3518 (5.0)	1.64 (1.04-2.58)	0.033
Child Continuous Outcomes	**Mean (SD)**			**Adjusted Mean Difference (95% CI)**	**p-value**
Fasting glucose (mmol/l)	5.1 (0.4)	5.0 (0.4)	5.0 (0.4)	-0.0028 (-0.042-0.036)	0.89
30 min glucose (mmol/l)	8.3 (1.5)	8.1 (1.3)	7.7 (1.3)	0.28 (0.14-0.43)	0.0001
1-h glucose (mmol/l)	7.5 (2.0)	7.2 (1.7)	6.8 (1.7)	0.34 (0.15-0.53)	0.0004
2-h glucose (mmol/l)	6.4 (1.3)	6.2 (1.2)	5.9 (1.1)	0.13 (0.0068-0.25)	0.039
Sum of glucose z-scores	1.3 (3.3)	0.7 (2.8)	-0.2 (2.8)	0.54 (0.23-0.84)	0.0005
Matsuda index	1542.3 (703.7)	1645.8 (673.3)	1838.4 (753.3)	-52.3 (-121.3-16.7)	0.14
Insulinogenic index	0.81 (0.57)	0.78 (0.66)	0.82 (0.70)	-0.10 (-0.18- -0.020)	0.015
Disposition index	6.85 (0.62)	6.89 (0.58)	7.05 (0.57)	-0.13 (-0.20- -0.063)	0.0002

Carpenter-Coustan GDM=gestational diabetes mellitus defined by Carpenter-Coustan criteria (2 or more glucose values from a 75g OGTT equals or exceeds FPG 5.3 mmol/l, 1-hr 10.0 mmol/l, 2-hr 8.6 mmol/l)

IADPSG/WHO Only GDM=gestational diabetes mellitus defined by IADPSG/WHO criteria (1 or more glucose values from a 75g OGTT equals or exceeds FPG 5.1 mmol/l, 1-hr 10.0 mmol/l, 2-hr 8.5 mmol/l) but not meeting Carpenter-Coustan Criteria

*Association results remove Carpenter-Coustan GDM mothers from analysis and use fully adjusted Model 4: Adjusted for field center + child age, sex, pubertal status (Tanner stage 1, 2/3, 4/5, sex x Tanner stage interaction) + maternal variables at pregnancy OGTT (age, height, mean arterial pressure, parity (0, 1+), smoking (yes/no), drinking (yes/no), gestational age), child's family history of diabetes in first degree relatives + maternal BMI at pregnancy OGTT + child's BMI *z*-score.

SUPPLEMENTARY DATA

Supplementary Figure 1. Flow chart describing enrollment for HAPO FUS.
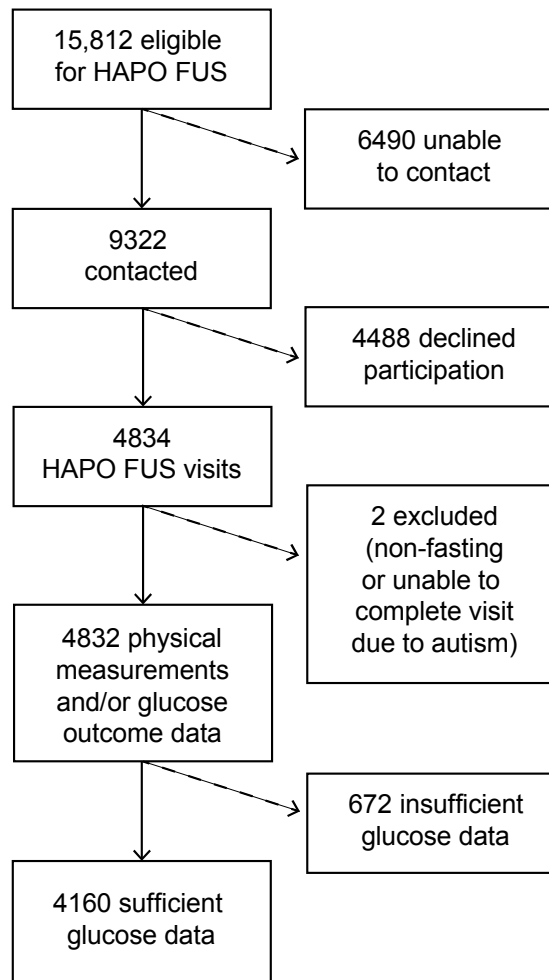
SUPPLEMENTARY DATA

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HAPO Follow-Up Study Cooperative Research Group

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