

SUPPLEMENTARY DATA

**Supplementary Table 1. Characteristics of Mothers during HAPO Pregnancy OGTT and their Children at Follow-up**

<b>Characteristics – Mothers (n=4160)</b>	<b>Mean (SD)</b>
Age at OGTT (yrs)	29.9 (5.7)
Gestational Age at OGTT (wks)	27.6 (1.7)
Height (cm)	161.7 (6.8)
Weight (kg)	71.8 (14.1)
Body Mass Index (BMI) (kg/m <sup>2</sup> )	27.4 (4.9)
Mean Arterial Pressure (mmHg)	80.3 (7.9)
Fasting Plasma Glucose (mmol/l)	4.5 (0.4)
1-hr Plasma Glucose (mmol/l)	7.4 (1.7)
2-hr Plasma Glucose (mmol/l)	6.1 (1.3)
Sum of glucose z-scores	-0.1 (2.3)
	<b>N (%)</b>
<b>Race/Ethnicity</b>	
White, Non-Hispanic	1778 (42.7)
Hispanic	465 (11.2)
Black, Non-Hispanic	719 (17.3)
Asian	1125 (27.0)
Other	73 (1.8)
Any Prenatal Smoking	177 (4.3)
Any Prenatal Alcohol Use	283 (6.8)
Parity (any prior delivery ≥ 20 weeks)	2146 (51.6)
	<b>Mean (SD)</b>
<b>Characteristics – Children (n=4160)</b>	
<b>At Follow-up</b>	
Age (yrs)	11.4 (1.2)
Height (cm)	148.5 (10.4)
Weight (kg)	43.2 (13.6)
BMI (kg/m <sup>2</sup> )	19.3 (4.4)
BMI z-score	0.5 (1.3)
	<b>N (%)</b>
Sex – Female	2034 (48.9)
<b>Tanner Stage - Girls</b>	
1	340 (19.0)
2/3	761 (42.6)
4/5	686 (38.4)

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Tanner Stage - Boys	
1	523 (35.9)
2/3	673 (46.1)
4/5	263 (18.0)
Family History of Diabetes	1899 (45.7)

\*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)

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**Supplementary Table 2. 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-h Plasma Glucose (mmol/l)	7.4 (1.7)	7.5 (1.7)	7.5 (1.7)	7.5 (1.7)
2-h Plasma Glucose (mmol/l)	6.1 (1.3)	6.2 (1.3)	6.2 (1.3)	6.2 (1.3)
	<b>N (%)</b>	<b>N (%)</b>	<b>(%)</b>	<b>(%)</b>
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-h 10.0 mmol/l, 2-h 8.5 mmol/l)

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**Supplementary Table 3. Tanner Stage Specific Associations between Maternal Glucose Levels during Pregnancy and Continuous Child Metabolic Outcomes**

Child Continuous Metabolic Outcomes	Tanner Stage 1 Beta (95% CI), p	Tanner Stage 2/3 Beta (95% CI), p	Tanner Stage 4/5 Beta (95% CI), p
	<b>Maternal fasting glucose*</b>		
Fasting glucose (mmol/l)	0.05 (0.02-0.08), p<0.001	0.05 (0.03-0.07), p<0.001	0.05 (0.02-0.07), p<0.001
30 min glucose (mmol/l)	0.03 (-0.08-0.13), p=0.61	0.05 (-0.02-0.12), p=0.19	0.15 (0.06-0.24), p=0.002
1-h glucose (mmol/l)	-0.03 (-0.16-0.11), p=0.72	-0.01 (-0.11-0.09), p=0.86	0.08 (-0.04-0.2), p=0.19
2-h glucose (mmol/l)	0.07 (-0.01-0.16), p=0.10	0.02 (-0.05-0.08), p=0.62	0.04 (-0.04-0.12), p=0.31
Sum of glucose z-scores	0.13 (-0.09-0.35), p=0.25	0.2 (0.04-0.35), p=0.01	0.31 (0.11-0.51), p=0.002
A1c (%)	0.01 (-0.01-0.03), p=0.40	0.02 (0-0.04), p=0.02	0.02 (-0.01-0.04), p=0.16
Matsuda index	-43.92 (-95.15-7.31), p=0.09	-47.31 (-83.81- -10.8), p=0.01	-26.54 (-64.17-11.09), p=0.17
Insulinogenic index	0.04 (-0.01-0.09), p=0.16	0.03 (-0.01-0.06), p=0.12	-0.07 (-0.14-0), p=0.04
Disposition index	-0.01 (-0.05-0.04), p=0.83	0 (-0.04-0.04), p=0.99	-0.05 (-0.09-0), p=0.05
	<b>Maternal 1-h glucose*</b>		
Fasting glucose (mmol/l)	0.02 (-0.01-0.05), p=0.20	0.03 (0.01-0.05), p=0.002	0.02 (0-0.05), p=0.06
30 min glucose (mmol/l)	0.21 (0.11-0.32), p<0.001	0.2 (0.13-0.27), p<0.001	0.19 (0.1-0.28), p<0.001
1-h glucose (mmol/l)	0.2 (0.06-0.33), p=0.005	0.25 (0.16-0.35), p<0.001	0.26 (0.15-0.37), p<0.001
2-h glucose (mmol/l)	0.08 (-0.01-0.17), p=0.07	0.12 (0.06-0.18), p<0.001	0.13 (0.05-0.21), p=0.001
Sum of glucose z-scores	0.35 (0.13-0.57), p=0.002	0.5 (0.35-0.65), p<0.001	0.47 (0.28-0.66), p<0.001
A1c (%)	0 (-0.02-0.03), p=0.74	0.02 (0.01-0.04), p=0.007	0 (-0.02-0.02), p=0.73

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Matsuda index	-64.08 (-114.9--13.25), p=0.01	-82.07 (-117.57--46.58), p<0.001	-61.95 (-97.98--25.93), p<0.001
Insulinogenic index	-0.05 (-0.1-0.01), p=0.08	-0.03 (-0.06-0), p=0.06	-0.06 (-0.13-0), p=0.06
Disposition index	-0.09 (-0.14--0.05), p<0.001	-0.08 (-0.12--0.05), p<0.001	-0.08 (-0.13--0.04), p<0.001
	<b>Maternal 2-h glucose*</b>		
Fasting glucose (mmol/l)	0 (-0.02-0.03), p=0.77	0.03 (0.01-0.05), p=0.005	0 (-0.02-0.03), p=0.76
30 min glucose (mmol/l)	0.1 (0-0.2), p=0.05	0.12 (0.05-0.19), p<0.001	0.11 (0.03-0.2), p=0.008
1-h glucose (mmol/l)	0.11 (-0.02-0.24), p=0.11	0.17 (0.08-0.27), p<0.001	0.16 (0.05-0.26), p=0.005
2-h glucose (mmol/l)	0.03 (-0.05-0.12), p=0.42	0.06 (0-0.12), p=0.05	0.11 (0.03-0.18), p=0.005
Sum of glucose z-scores	0.18 (-0.03-0.39), p=0.10	0.34 (0.19-0.48), p<0.001	0.29 (0.1-0.47), p=0.003
A1c (%)	-0.01 (-0.03-0.01), p=0.49	0.01 (0-0.03), p=0.14	0 (-0.02-0.02), p=0.80
Matsuda index	-49.53 (-98.8--0.26), p=0.05	-45.93 (-80.26--11.59), p=0.009	-48.58 (-83.51--13.66), p=0.007
Insulinogenic index	-0.01 (-0.06-0.04), p=0.74	-0.03 (-0.06-0), p=0.05	-0.03 (-0.09-0.03), p=0.36
Disposition index	-0.04 (-0.08-0.01), p=0.11	-0.07 (-0.1--0.03), p<0.001	-0.05 (-0.09--0.01), p=0.02
	<b>Maternal sum of glucose z-scores</b>		
Fasting glucose (mmol/l)	0.01 (0-0.03), p=0.03	0.02 (0.01-0.03), p<0.001	0.01 (0-0.02), p=0.02
30 min glucose (mmol/l)	0.06 (0.02-0.11), p=0.005	0.07 (0.04-0.1), p<0.001	0.08 (0.05-0.12), p<0.001
1-h glucose (mmol/l)	0.05 (-0.01-0.11), p=0.08	0.08 (0.04-0.12), p<0.001	0.09 (0.05-0.14), p<0.001
2-h glucose (mmol/l)	0.03 (0-0.07), p=0.06	0.04 (0.01-0.07), p=0.006	0.05 (0.02-0.09), p=0.002
Sum of glucose z-scores	0.12 (0.03-0.22), p=0.009	0.2 (0.13-0.26), p<0.001	0.2 (0.12-0.28), p<0.001
A1c (%)	0 (-0.01-0.01), p=0.83	0.01 (0-0.02), p=0.005	0 (-0.01-0.01), p=0.58

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Matsuda index	-29.82 (-51.73--7.92), p=0.008	-33.18 (-48.57--17.79), p<0.001	-25.8 (-41.36--10.24), p=0.001
Insulinogenic index	0 (-0.03-0.02), p=0.77	-0.01 (-0.02-0.01), p=0.30	-0.03 (-0.06-0), p=0.04
Disposition index	-0.03 (-0.04--0.01), p=0.01	-0.03 (-0.04--0.01), p<0.001	-0.03 (-0.05--0.01), p<0.001

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)

\*Beta estimates reported for maternal glucose higher by 1 standard deviation

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.

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**Supplementary Table 4. Tanner Stage Specific Associations between Maternal Glucose Levels during Pregnancy and Dichotomous Child Glucose Outcomes**

Dichotomous Child Glucose Outcomes	Tanner Stage 1 OR (95% CI), p	Tanner Stage 2/3 OR (95% CI), p	Tanner Stage 4/5 OR (95% CI), p
	<b>Maternal fasting glucose*</b>		
IFG-ADA	1.19 (0.88-1.62), p=0.2612	1.47 (1.17-1.84), p=0.0009	1.14 (0.85-1.51), p=0.3855
IGT	1.02 (0.67-1.57), p=0.9254	1.12 (0.89-1.41), p=0.3214	1.37 (0.96-1.95), p=0.0821
	<b>Maternal 1-h glucose*</b>		
IFG-ADA	1.09 (0.8-1.47), p=0.6011	1.21 (0.97-1.51), p=0.0916	0.94 (0.7-1.26), p=0.6799
IGT	1.42 (0.93-2.18), p=0.1039	1.51 (1.2-1.89), p=0.0004	1.52 (1.08-2.15), p=0.0173
	<b>Maternal 2-h glucose*</b>		
IFG-ADA	0.92 (0.68-1.25), p=0.6017	1.24 (1-1.54), p=0.0509	0.88 (0.66-1.16), p=0.3677
IGT	1.18 (0.78-1.78), p=0.4304	1.15 (0.93-1.43), p=0.2043	1.21 (0.88-1.67), p=0.2462
	<b>Maternal sum of glucose z-scores</b>		
IFG-ADA	1.03 (0.91-1.18), p=0.6285	1.16 (1.05-1.28), p=0.0025	0.99 (0.87-1.12), p=0.8354
IGT	1.10 (0.92-1.32), p=0.2824	1.13 (1.03-1.24), p=0.0119	1.18 (1.02-1.36), p=0.0243

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)

\*ORs reported for maternal glucose higher by 1 standard deviation

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.

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**Supplementary Table 5. Means of child glucose levels and adjusted mean differences for Models 1-4 across maternal glucose categories**

<b>Maternal Glucose Levels</b>	<b>Mean (SD)</b>	<b>Model 1 Adjusted Mean Difference (95% CI)</b>	<b>Model 2 Adjusted Mean Difference (95% CI)</b>	<b>Model 3 Adjusted Mean Difference (95% CI)</b>	<b>Model 4 Adjusted Mean Difference (95% CI)</b>
<b>Child Fasting Glucose (mmol/l)</b>					
FPG (mmol/l)					
≤ 4.2	4.91 (0.37)	-	-	-	-
4.2-4.4	4.98 (0.40)	0.06 (0.03-0.09)	0.06 (0.03-0.09)	0.06 (0.03-0.09)	0.06 (0.03-0.09)
4.5-4.7	5.01 (0.38)	0.09 (0.06-0.12)	0.09 (0.06-0.12)	0.09 (0.05-0.12)	0.09 (0.06-0.12)
4.8-5.0	5.07 (0.36)	0.13 (0.10-0.17)	0.14 (0.10-0.18)	0.13 (0.09-0.17)	0.14 (0.10-0.18)
≥ 5.1	5.06 (0.42)	0.12 (0.07-0.16)	0.12 (0.07-0.17)	0.11 (0.06-0.16)	0.12 (0.07-0.17)
1-h PG (mmol/l)					
≤ 5.8	4.95 (0.40)	-	-	-	-
5.9-7.3	5.00 (0.38)	0.01 (-0.02-0.04)	0.01 (-0.02-0.04)	0.01 (-0.02-0.04)	0.01 (-0.02-0.04)
7.4-8.6	5.02 (0.39)	0.03 (-0.005-0.06)	0.03 (-0.01-0.06)	0.03 (-0.01-0.06)	0.03 (-0.01-0.06)
8.7-9.9	5.05 (0.37)	0.05 (0.01-0.09)	0.05 (0.01-0.09)	0.04 (0.01-0.08)	0.05 (0.01-0.08)
≥ 10.0	5.07 (0.41)	0.07 (0.02-0.12)	0.07 (0.02-0.12)	0.07 (0.02-0.11)	0.07 (0.02-0.12)
2-h PG (mmol/l)					
≤ 5.0	4.94 (0.40)	-	-	-	-
5.1-6.0	4.99 (0.39)	0.04 (0.01-0.07)	0.03 (0.004-0.07)	0.03 (0.001-0.06)	0.03 (0.002-0.06)
6.1-6.9	5.01 (0.37)	0.04 (0.01-0.07)	0.04 (0.004-0.07)	0.04 (0.003-0.07)	0.04 (0.004-0.07)



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7.0-8.4	5.04 (0.39)	0.05 (0.02-0.09)	0.05 (0.02-0.09)	0.05 (0.01-0.09)	0.05 (0.01-0.09)
≥ 8.5	5.04 (0.39)	0.04 (-0.01-0.10)	0.04 (-0.01-0.09)	0.03 (-0.01-0.09)	0.04 (-0.02-0.09)
<b>Child 30-minute Glucose (mmol/l)</b>					
FPG (mmol/l)					
≤ 4.2	7.63 (1.32)	-	-	-	-
4.2-4.4	7.72 (1.35)	-0.01 (-0.13-0.11)	-0.002 (-0.12-0.12)	-0.01 (-0.13-0.11)	-0.09 (-0.01-0.01)
4.5-4.7	7.82 (1.30)	0.08 (-0.05-0.20)	0.09 (-0.04-0.21)	0.07 (-0.05-0.20)	0.09 (-0.04-0.21)
4.8-5.0	8.01 (1.36)	0.17 (0.03-0.31)	0.19 (0.04-0.33)	0.16 (0.02-0.30)	0.19 (0.04-0.33)
≥ 5.1	7.94 (1.29)	0.09 (-0.09-0.28)	0.06 (-0.06-0.31)	0.08 (-0.10-0.27)	0.12 (-0.06-0.31)
1-h PG (mmol/l)					
≤ 5.8	7.53 (1.44)	-	-	-	-
5.9-7.3	7.65 (1.25)	0.07 (-0.04-0.18)	0.08 (-0.04-0.19)	0.07 (-0.04-0.18)	0.08 (-0.04-0.19)
7.4-8.6	7.91 (1.29)	0.25 (0.13-0.37)	0.26 (0.14-0.38)	0.25 (0.13-0.37)	0.26 (0.14-0.38)
8.7-9.9	8.00 (1.24)	0.33 (0.19-0.47)	0.34 (0.20-0.48)	0.32 (0.18-0.46)	0.34 (0.20-0.48)
≥ 10.0	8.36 (1.41)	0.61 (0.43-0.78)	0.62 (0.44-0.80)	0.60 (0.43-0.78)	0.62 (0.44-0.79)
2-h PG (mmol/l)					
≤ 5.0	7.63 (1.43)	-	-	-	-
5.1-6.0	7.72 (1.29)	0.05 (-0.06-0.17)	0.06 (-0.06-0.17)	0.05 (-0.07-0.16)	0.06 (-0.06-0.17)
6.1-6.9	7.79 (1.26)	0.06 (-0.06-0.18)	0.06 (-0.06-0.19)	0.05 (-0.07-0.18)	0.06 (-0.06-0.19)
7.0-8.4	8.01 (1.35)	0.23 (0.09-0.36)	0.23 (0.10-0.37)	0.22 (0.09-0.36)	0.23 (0.10-0.36)
≥ 8.5	8.17 (1.40)	0.33 (0.13-0.53)	0.34 (0.14-0.54)	0.32 (0.12-0.52)	0.33 (0.13-0.53)

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	<b>Child 1-h Glucose (mmol/l)</b>				
FPG (mmol/l)					
≤ 4.2	6.72 (1.61)	-	-	-	-
4.2-4.4	6.79 (1.69)	-0.03 (-0.18-0.13)	-0.02 (-0.17-0.13)	-0.03 (-0.18-0.12)	-0.02 (-0.17-0.13)
4.5-4.7	6.86 (1.72)	-0.02 (-0.18-0.14)	-0.67 (-0.17-0.15)	-0.02 (-0.18-0.14)	-0.01 (-0.17-0.15)
4.8-5.0	6.88 (1.67)	-0.06 (-0.24-0.12)	-0.04 (-0.23-0.14)	-0.07 (-0.25-0.12)	-0.04 (-0.23-0.15)
≥ 5.1	7.09 (1.69)	0.09 (-0.15-0.32)	0.12 (-0.12-0.36)	0.08 (-0.16-0.31)	0.12 (-0.12-0.36)
1-h PG (mmol/l)					
≤ 5.8	6.48 (1.57)	-	-	-	-
5.9-7.3	6.73 (1.61)	0.21 (0.07-0.36)	0.22 (0.08-0.37)	0.21 (0.07-0.36)	0.22 (0.08-0.37)
7.4-8.6	6.95 (1.65)	0.37 (0.21-0.52)	0.38 (0.23-0.54)	0.37 (0.21-0.52)	0.38 (0.23-0.54)
8.7-9.9	6.97 (1.76)	0.38 (0.20-0.56)	0.40 (0.22-0.58)	0.37 (0.19-0.55)	0.40 (0.22-0.58)
≥ 10.0	7.51 (1.92)	0.80 (0.58-1.03)	0.82 (0.60-1.05)	0.80 (0.57-1.02)	0.82 (0.59-1.05)
2-h PG (mmol/l)					
≤ 5.0	6.56 (1.67)	-	-	-	-
5.1-6.0	6.75 (1.67)	0.11 (-0.04-0.26)	0.12 (-0.03-0.27)	0.11 (-0.04-0.25)	0.12 (-0.03-0.27)
6.1-6.9	6.88 (1.64)	0.18 (0.02-0.34)	0.19 (0.03-0.35)	0.17 (0.02-0.33)	0.19 (0.03-0.35)
7.0-8.4	7.03 (1.67)	0.28 (0.11-0.45)	0.29 (0.12-0.46)	0.27 (0.10-0.45)	0.29 (0.11-0.46)
≥ 8.5	7.32 (1.87)	0.50 (0.25-0.76)	0.52 (0.26-0.78)	0.49 (0.24-0.75)	0.51 (0.25-0.77)
	<b>Child 2-h Glucose (mmol/l)</b>				
FPG (mmol/l)					

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≤ 4.2	5.83 (1.07)	-	-	-	-
4.2-4.4	5.97 (1.24)	0.06 (-0.04-1.16)	0.06 (-0.04-0.16)	0.05 (-0.06-0.15)	0.06 (-0.05-0.16)
4.5-4.7	5.96 (1.10)	0.02 (-0.09-0.13)	0.02 (-0.09-0.13)	0.01 (-0.10-0.11)	0.02 (-0.08-0.13)
4.8-5.0	6.06 (1.08)	0.07 (-0.06-0.19)	0.07 (-0.05-0.20)	0.05 (-0.08-0.17)	0.07 (-0.05-0.20)
≥ 5.1	6.18 (1.19)	0.15 (-0.01-0.31)	0.16 (-0.003-0.32)	0.11 (-0.05-0.27)	0.15 (-0.01-0.31)
1-h PG (mmol/l)					
≤ 5.8	5.81 (1.20)	-	-	-	-
5.9-7.3	5.93 (1.09)	0.10 (0.002-0.20)	0.10 (0.003-0.20)	0.09 (-0.003-0.19)	0.10 (0.01-0.20)
7.4-8.6	6.02 (1.10)	0.18 (0.08-0.29)	0.19 (0.08-0.29)	0.17 (0.07-0.28)	0.19 (0.08-0.29)
8.7-9.9	6.00 (1.16)	0.16 (0.04-0.28)	0.16 (0.04-0.29)	0.14 (0.01-0.26)	0.15 (0.03-0.28)
≥ 10.0	6.36 (1.34)	0.44 (0.29-0.60)	0.45 (0.29-0.60)	0.42 (0.27-0.58)	0.44 (0.29-0.59)
2-h PG (mmol/l)					
≤ 5.0	5.86 (1.23)	-	-	-	-
5.1-6.0	5.93 (1.10)	0.06 (-0.05-0.16)	0.06 (-0.04-0.16)	0.04 (-0.06-0.14)	0.05 (-0.05-0.15)
6.1-6.9	5.98 (1.09)	0.08 (-0.03-0.19)	0.08 (-0.03-0.19)	0.06 (-0.04-0.17)	0.08 (-0.03-0.18)
7.0-8.4	6.05 (1.15)	0.11 (-0.01-0.23)	0.11 (-0.004-0.23)	0.09 (-0.02-0.21)	0.11 (-0.01-0.22)
≥ 8.5	6.28 (1.35)	0.30 (0.13-0.47)	0.30 (0.13-0.47)	0.26 (0.09-0.43)	0.27 (0.10-0.45)
	<b>Child Sum of Glucose Z-scores</b>				
FPG (mmol/l)					
≤ 4.2	-0.52 (2.73)	-	-	-	-
4.2-4.4	-0.13 (2.91)	0.19 (-0.05-0.43)	0.20 (-0.04-0.44)	0.17 (-0.07-0.41)	0.19 (-0.05-0.43)

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4.5-4.7	0.06 (2.8)	0.29 (0.04-0.54)	0.31 (0.06-0.57)	0.27 (0.01-0.52)	0.31 (0.06-0.57)
4.8-5.0	0.45 (2.74)	0.50 (0.21-0.79)	0.53 (0.23-0.82)	0.46 (0.17-0.745)	0.53 (0.24-0.83)
≥ 5.1	0.54 (2.79)	0.55 (0.18-0.93)	0.61 (0.23-0.99)	0.48 (0.11-0.85)	0.60 (0.22-0.98)
1-h PG (mmol/l)					
≤ 5.8	-0.67 (2.87)	-	-	-	-
5.9-7.3	-0.29 (2.68)	0.29 (0.06-0.52)	0.30 (0.07-0.54)	0.28 (0.06-0.51)	0.31 (0.08-0.54)
7.4-8.6	0.23 (2.73)	0.64 (0.39-0.88)	0.65 (0.41-0.90)	0.62 (0.38-0.86)	0.65 (0.41-0.90)
8.7-9.9	0.38 (2.8)	0.74 (0.45-1.02)	0.76 (0.47-1.05)	0.69 (0.41-0.98)	0.74 (0.46-1.03)
≥ 10.0	1.31 (3.14)	1.50 (1.14-1.86)	1.52 (1.16-1.88)	1.47 (1.11-1.82)	1.51 (1.15-1.87)
2-h PG (mmol/l)					
≤ 5.0	-0.55 (2.91)	-	-	-	-
5.1-6.0	-0.18 (2.73)	0.24 (0.01-0.48)	0.25 (0.02-0.49)	0.21 (-0.02-0.45)	0.24 (0.004-0.47)
6.1-6.9	0.05 (2.67)	0.32 (0.07-0.57)	0.33 (0.08-0.58)	0.29 (0.04-0.54)	0.32 (0.07-0.57)
7.0-8.4	0.45 (2.94)	0.57 (0.29-0.84)	0.58 (0.30-0.85)	0.54 (0.27-0.81)	0.56 (0.29-0.84)
≥ 8.5	0.99 (3.01)	0.91 (0.51-1.32)	0.93 (0.52-1.34)	0.85 (0.44-1.25)	0.88 (0.48-1.29)
	<b>Child A1c (%)</b>				
FPG (mmol/l)					
≤ 4.2	5.20 (0.29)	-	-	-	-
4.2-4.4	5.21 (0.29)	0.007 (-0.019-0.033)	0.006 (-0.020-0.032)	0.005 (-0.021-0.031)	0.006 (-0.021-0.032)
4.5-4.7	5.22 (0.28)	0.015 (-0.012-0.043)	0.013 (-0.015-0.041)	0.013 (-0.015-0.040)	0.014 (-0.014-0.041)
4.8-5.0	5.21 (0.29)	0.016 (-0.015-0.047)	0.013 (-0.019-0.044)	0.011 (-0.020-0.042)	0.013 (-0.018-0.045)

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≥ 5.1	5.24 (0.28)	0.052 (0.013-0.092)	0.047 (0.007-0.088)	0.043 (0.004-0.083)	0.046 (0.006-0.086)
1-h PG (mmol/l)					
≤ 5.8	5.19 (0.28)	-	-	-	-
5.9-7.3	5.21 (0.29)	0.010 (-0.015-0.035)	0.009 (-0.016-0.034)	0.009 (-0.016-0.034)	0.009 (-0.016-0.034)
7.4-8.6	5.21 (0.30)	0.026 (0.000-0.053)	0.025 (-0.002-0.051)	0.024 (-0.002-0.050)	0.025 (-0.002-0.051)
8.7-9.9	5.25 (0.28)	0.056 (0.025-0.087)	0.054 (0.023-0.085)	0.051 (0.020-0.082)	0.052 (0.021-0.083)
≥ 10.0	5.24 (0.29)	0.046 (0.008-0.085)	0.045 (0.006-0.083)	0.042 (0.004-0.081)	0.043 (0.005-0.082)
2-h PG (mmol/l)					
≤ 5.0	5.19 (0.27)	-	-	-	-
5.1-6.0	5.19 (0.29)	-0.006 (-0.032-0.019)	-0.008 (-0.034-0.017)	-0.011 (-0.036-0.015)	-0.010 (-0.036-0.015)
6.1-6.9	5.22 (0.29)	0.010 (-0.017-0.037)	0.008 (-0.019-0.035)	0.007 (-0.020-0.034)	0.007 (-0.020-0.034)
7.0-8.4	5.25 (0.29)	0.026 (-0.003-0.06)	0.024 (-0.006-0.054)	0.022 (-0.007-0.051)	0.022 (-0.007-0.052)
≥ 8.5	5.24 (0.30)	0.027 (-0.016-0.071)	0.024 (-0.019-0.068)	0.019 (-0.024-0.063)	0.020 (-0.024-0.063)

The lowest three categories for FPG, 1-h PG and 2-h PG were used for analyses of glucose levels during the original HAPO Study; the fourth category includes values up to the fifth category for each measure that correspond to IADPSG diagnostic thresholds for GDM.

Adjusted mean differences for the continuous outcomes are for each category relative to the lowest category. 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 2: Model 1 + maternal BMI at pregnancy OGTT. Model 3: Model 1 + child's BMI z-score. Model 4: Model 1 + maternal BMI at pregnancy OGTT + child's BMI z-score.

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**Supplementary Table 6. Means of child calculated indices and adjusted mean differences for Models 1-4 across maternal glucose categories**

Maternal Glucose Levels	Mean (SD)	Model 1 Adjusted Mean Difference (95% CI)	Model 2 Adjusted Mean Difference (95% CI)	Model 3 Adjusted Mean Difference (95% CI)	Model 4 Adjusted Mean Difference (95% CI)
<b>Child Matsuda Index</b>					
FPG (mmol/l)					
≤ 4.2	1932.5 (790.9)	-	-	-	-
4.2-4.4	1858.9 (740.7)	-50.2 (-111.8-11.5)	-37.1 (-98.2-24.5)	-25.6 (-80.7-28.9)	-30.5 (-85.6-24.5)
4.5-4.7	1784.2 (771.8)	-77.5 (-142.4- -12.5)	-53.5 (-118.4-11.5)	-49.1 (-106.9-8.2)	-57.8 (-116.2-0.5)
4.8-5.0	1694.7 (656.2)	-158.2 (-231.8- -84.0)	-119.5 (-194.2- -44.7)	-111.3 (-177.3- -45.3)	-124.9 (-192.0- -58.4)
≥ 5.1	1615.6 (747.3)	-184.9 (-279.8- -90.0)	-124.9 (-221.5- -28.4)	-92.2 (-176.7- -7.6)	-113.5 (-200.2- -27.3)
1-h PG (mmol/l)					
≤ 5.8	1942.4 (766.4)	-	-	-	-
5.9-7.3	1874.2 (787.1)	-51.8 (-110.2-7.1)	-39.3 (-98.2-19.6)	-39.3 (-91.6-13.6)	-43.1 (-95.5-9.8)
7.4-8.6	1764.5 (710.2)	-114.5 (-177.3- -51.8)	-97.1 (-159.3- -34.4)	-92.2 (-147.8- -36.0)	-97.6 (-153.3- -41.5)
8.7-9.9	1677.3 (677.5)	-169.6 (-242.7- -96.5)	-142.9 (-216.0- -69.8)	-116.7 (-181.6- -51.8)	-124.4 (-189.3- -58.9)
≥ 10.0	1595.5 (684.5)	-215.5 (-307.1- -123.8)	-190.9 (-282.5- -99.3)	-173.5 (-255.3- -92.2)	-181.6 (-262.4- -99.3)
2-h PG (mmol/l)					
≤ 5.0	1959.8 (828.5)	-	-	-	-
5.1-6.0	1810.4 (733.1)	-100.9 (-160.9- -40.4)	-80.7 (-140.7- -20.7)	-58.9 (-112.4- -5.5)	-63.8 (-117.3- -9.8)
6.1-6.9	1804.9 (726.0)	-82.9 (-146.7- -18.5)	-61.6 (-126.0- -2.2)	-50.7 (-108.0-6.0)	-56.2 (-112.9- 1.1)

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7.0-8.4	1719.3 (706.4)	-141.3 (-211.6- -71.5)	-123.3 (-193.1- -53.5)	-103.6 (-166.4- -41.5)	-108.0 (-170.7- -45.8)
≥ 8.5	1608.0 (691.1)	-196.4 (-299.5- -92.7)	-168.5 (-271.6- -64.9)	-114.5 (-206.7- -22.4)	-120.5 (-212.7- -28.4)
<b>Child Insulinogenic Index</b>					
FPG (mmol/l)					
≤ 4.2	0.78 (0.75)	-	-	-	-
4.2-4.4	0.81 (0.70)	0.05 (-0.01-0.11)	0.04 (-0.03-0.10)	0.04 (-0.02-0.10)	0.04 (-0.03-0.10)
4.5-4.7	0.83 (0.65)	0.06 (-0.01-0.13)	0.04 (-0.03-0.11)	0.05 (-0.02-0.11)	0.04 (-0.03-0.11)
4.8-5.0	0.83 (0.65)	0.08 (0.00-0.16)	0.05 (-0.03-0.12)	0.06 (-0.02-0.14)	0.05 (-0.03-0.13)
≥ 5.1	0.87 (0.69)	0.11 (0.01-0.21)	0.06 (-0.05-0.16)	0.07 (-0.03-0.17)	0.05 (-0.05-0.15)
1-h PG (mmol/l)					
≤ 5.8	0.88 (0.76)	-	-	-	-
5.9-7.3	0.83 (0.77)	-0.03 (-0.10-0.03)	-0.04 (-0.11-0.02)	-0.04 (-0.10-0.02)	-0.04 (-0.10-0.02)
7.4-8.6	0.78 (0.62)	-0.07 (-0.14- -0.01)	-0.09 (-0.16- -0.02)	-0.08 (-0.15- -0.02)	-0.09 (-0.16- -0.02)
8.7-9.9	0.81 (0.63)	-0.05 (-0.13-0.02)	-0.08 (-0.16-0.001)	-0.07 (-0.15-0.004)	-0.08 (-0.16- -0.01)
≥ 10.0	0.72 (0.46)	-0.14 (-0.23- -0.04)	-0.16 (-0.26- -0.06)	-0.16 (-0.25- -0.06)	-0.17 (-0.26- -0.07)
2-h PG (mmol/l)					
≤ 5.0	0.84 (0.71)	-	-	-	-
5.1-6.0	0.84 (0.72)	0.02 (-0.05-0.08)	0.001 (-0.06-0.06)	-0.001 (-0.06-0.06)	-0.01 (-0.06-0.06)
6.1-6.9	0.81 (0.77)	-0.0001 (-0.07-0.07)	-0.02 (-0.09-0.05)	-0.014 (-0.08-0.05)	-0.02 (-0.09-0.05)
7.0-8.4	0.78 (0.56)	-0.03 (-0.10-0.05)	-0.04 (-0.12-0.03)	-0.04 (-0.12-0.03)	-0.05 (-0.12-0.02)
≥ 8.5	0.77 (0.55)	-0.04 (-0.15,0.07)	-0.06 (-0.17-0.04)	-0.08 (-0.18-0.03)	-0.08 (-0.19-0.02)

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	Child Disposition Index*				
FPG (mmol/l)					
≤ 4.2	7.07 (6.32)	-	-	-	-
4.2-4.4	7.04 (6.39)	0.017 (-0.036-0.070)	0.014 (-0.039-0.067)	0.019 (-0.034-0.072)	0.015 (-0.038-0.061)
4.5-4.7	7.02 (6.33)	0.012 (-0.044-0.068)	0.0075 (-0.049-0.064)	0.015 (-0.041-0.070)	0.0072 (-0.049-0.063)
4.8-5.0	6.97 (6.34)	-0.0050 (-0.069-0.059)	-0.012 (-0.077-0.053)	-0.00080 (-0.065-0.063)	-0.013 (-0.078-0.052)
≥ 5.1	6.97 (6.39)	-0.0011 (-0.083-0.081)	-0.012 (-0.096-0.072)	0.0072 (-0.075-0.089)	-0.01 (-0.095-0.073)
1-h PG (mmol/l)					
≤ 5.8	7.15 (6.41)	-	-	-	-
5.9-7.3	7.07 (6.34)	-0.060 (-0.11--0.0093)	-0.064 (-0.11--0.013)	-0.059 (-0.11--0.0084)	-0.064 (-0.11--0.013)
7.4-8.6	6.97 (6.31)	-0.13 (-0.18--0.075)	-0.13 (-0.19--0.079)	-0.13 (-0.18--0.073)	-0.13 (-0.19--0.080)
8.7-9.9	6.95 (6.34)	-0.14 (-0.21--0.079)	-0.15 (-0.22--0.085)	-0.14 (-0.20--0.074)	-0.15 (-0.21--0.084)
≥ 10.0	6.80 (6.38)	-0.27 (-0.35--0.19)	-0.27 (-0.35--0.19)	-0.26 (-0.34--0.18)	-0.27 (-0.35--0.19)
2-h PG (mmol/l)					
≤ 5.0	7.11 (6.36)	-	-	-	-
5.1-6.0	7.04 (6.37)	-0.025 (-0.077-0.027)	-0.029 (-0.081-0.024)	-0.022 (-0.074-0.031)	-0.027 (-0.080-0.025)
6.1-6.9	7.02 (6.33)	-0.039 (-0.094-0.016)	-0.043 (-0.099-0.012)	-0.037 (-0.092-0.019)	-0.043 (-0.098-0.013)
7.0-8.4	6.95 (6.36)	-0.10 (-0.16--0.042)	-0.11 (-0.17--0.045)	-0.099 (-0.16--0.038)	-0.11 (-0.16--0.043)
≥ 8.5	6.85 (6.36)	-0.17 (-0.26--0.078)	-0.17 (-0.26--0.083)	-0.16 (-0.25--0.070)	-0.167 (-0.26--0.077)



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\*Child disposition index is reported on a log scale.

The lowest three categories for FPG, 1-h PG and 2-h PG were used for analyses of glucose levels during the original HAPO Study; the fourth category includes values up to the fifth category for each measure that correspond to IADPSG diagnostic thresholds for GDM.

Adjusted mean differences for the continuous outcomes are for each category relative to the lowest category. 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 2: Model 1 + maternal BMI at pregnancy OGTT. Model 3: Model 1 + child's BMI z-score. Model 4: Model 1 + maternal BMI at pregnancy OGTT + child's BMI z-score.

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**Supplementary Table 7. Frequencies of child dichotomous outcomes and odds ratios (95% CI) for Models 1-4 across maternal glucose categories**

<b>Maternal Glucose Levels</b>	<b>n/Total N (%)</b>	<b>Model 1 OR (95% CI)</b>	<b>Model 2 OR (95% CI)</b>	<b>Model 3 OR (95% CI)</b>	<b>Model 4 OR (95% CI)</b>
<b>Child IFG</b>					
FPG (mmol/l)					
≤ 4.2	34/701 (4.85%)	-	-	-	-
4.2-4.4	106/1344 (7.89%)	1.73 (1.14-2.62)	1.73 (1.14-2.62)	1.73 (1.14-2.62)	1.74 (1.15-2.64)
4.5-4.7	82/1136 (7.22%)	1.55 (1.00-2.39)	1.55 (1.00-2.40)	1.54 (1.00-2.38)	1.56 (1.01-2.42)
4.8-5.0	63/675 (9.33%)	2.17 (1.35-3.46)	2.18 (1.36-3.51)	2.16 (1.35-3.45)	2.20 (1.37-3.54)
≥ 5.1	31/294 (10.54%)	2.19 (1.25-3.81)	2.22 (1.26-3.90)	2.15 (1.23-3.74)	2.22 (1.26-3.90)
1-h PG (mmol/l)					
≤ 5.8	51/780 (6.54%)	-	-	-	-
5.9-7.3	82/1352 (6.07%)	0.86 (0.59-1.25)	0.86 (0.59-1.25)	0.86 (0.59-1.25)	0.86 (0.59-1.26)
7.4-8.6	96/1094 (8.78%)	1.21 (0.83-1.76)	1.20 (0.82-1.76)	1.20 (0.82-1.75)	1.20 (0.83-1.76)
8.7-9.9	57/622 (9.16%)	1.16 (0.76-1.77)	1.15 (0.75-1.77)	1.14 (0.74-1.74)	1.15 (0.75-1.76)
≥ 10.0	30/302 (9.93%)	1.31 (0.79-2.19)	1.31 (0.78-2.19)	1.29 (0.77-2.15)	1.30 (0.78-2.17)
2-h PG (mmol/l)					
≤ 5.0	36/756 (4.76%)	-	-	-	-
5.1-6.0	104/1333 (7.80%)	1.64 (1.09-2.46)	1.64 (1.09-2.46)	1.61 (1.07-2.41)	1.62 (1.07-2.43)
6.1-6.9	88/1075 (8.19%)	1.60 (1.05-2.43)	1.59 (1.04-2.44)	1.57 (1.03-2.40)	1.58 (1.03-2.42)
7.0-8.4	70/765 (9.15%)	1.60 (1.02-2.50)	1.60 (1.02-2.50)	1.56 (1.00-2.45)	1.57 (1.00-2.46)

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≥ 8.5	18/221 (8.14%)	1.42 (0.76-2.66)	1.42 (0.76-2.66)	1.38 (0.74-2.59)	1.39 (0.74-2.61)
<b>Child IGT</b>					
FPG (mmol/l)					
≤ 4.2	29/692 (4.19%)	-	-	-	-
4.2-4.4	82/1325 (6.19%)	1.35 (0.87-2.10)	1.37 (0.88-2.13)	1.32 (0.85-2.06)	1.36 (0.87-2.11)
4.5-4.7	57/1124 (5.07%)	1.05 (0.65-1.68)	1.08 (0.67-1.73)	1.03 (0.64-1.65)	1.08 (0.67-1.74)
4.8-5.0	40/664 (6.02%)	1.18 (0.71-1.97)	1.23 (0.74-2.07)	1.14 (0.68-1.90)	1.24 (0.74-2.08)
≥ 5.1	30/289 (10.38%)	1.93 (1.10-3.40)	2.07 (1.16-3.70)	1.82 (1.03-3.21)	2.07 (1.16-3.70)
1-h PG (mmol/l)					
≤ 5.8	29/773 (3.75%)	-	-	-	-
5.9-7.3	65/1329 (4.89%)	1.31 (0.83-2.06)	1.32 (0.84-2.08)	1.30 (0.83-2.05)	1.34 (0.84-2.11)
7.4-8.6	63/1080 (5.83%)	1.58 (0.99-2.51)	1.62 (1.01-2.58)	1.55 (0.97-2.47)	1.61 (1.01-2.57)
8.7-9.9	39/615 (6.34%)	1.69 (1.01-2.83)	1.75 (1.04-2.94)	1.65 (0.98-2.76)	1.75 (1.04-2.94)
≥ 10.0	42/297 (14.14%)	3.62 (2.14-6.13)	3.74 (2.20-6.35)	3.56 (2.10-6.02)	3.77 (2.22-6.40)
2-h PG (mmol/l)					
≤ 5.0	35/749 (4.67%)	-	-	-	-
5.1-6.0	76/1312 (5.79%)	1.26 (0.83-1.92)	1.28 (0.84-1.96)	1.22 (0.80-1.86)	1.26 (0.83-1.93)
6.1-6.9	54/1058 (5.10%)	1.06 (0.68-1.67)	1.08 (0.69-1.71)	1.04 (0.66-1.64)	1.08 (0.69-1.71)
7.0-8.4	48/760 (6.32%)	1.25 (0.78-1.99)	1.27 (0.79-2.03)	1.22 (0.76-1.96)	1.27 (0.79-2.04)
≥ 8.5	25/215 (11.63%)	2.12 (1.20-3.76)	2.17 (1.22-3.86)	2.01 (1.14-3.57)	2.11 (1.18-3.74)

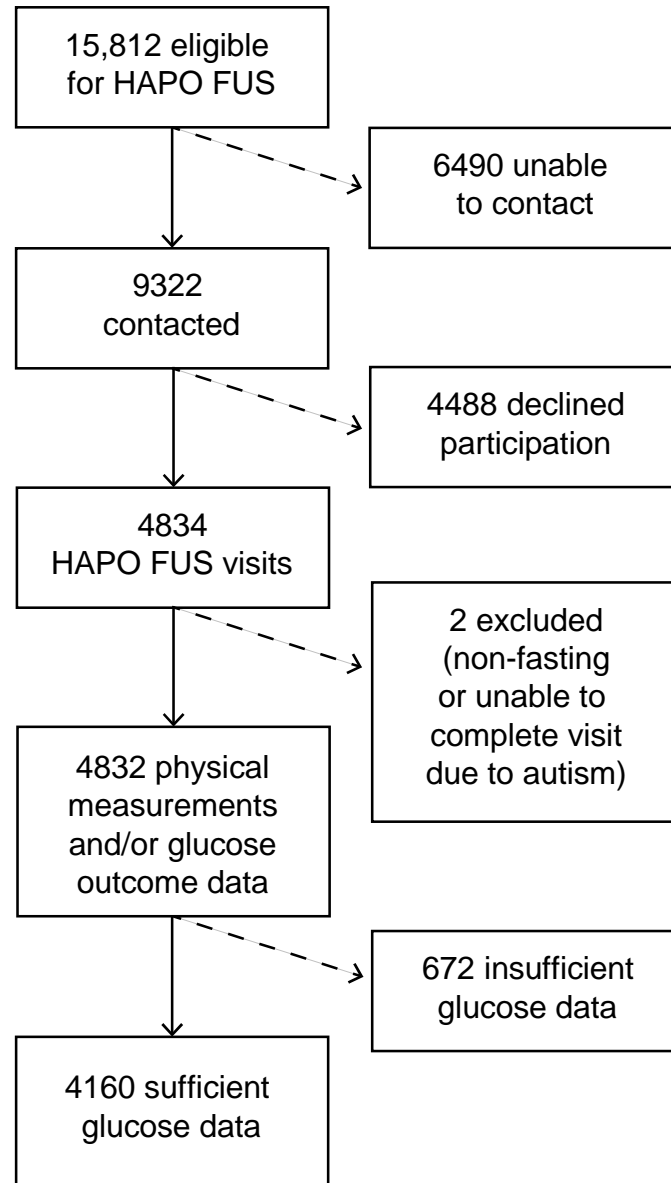
## SUPPLEMENTARY DATA

The lowest three categories for FPG, 1-h PG and 2-h PG were used for analyses of glucose levels during the original HAPO Study; the fourth category includes values up to the fifth category for each measure that correspond to IADPSG diagnostic thresholds for GDM.

Adjusted mean differences for the continuous outcomes are for each category relative to the lowest category. 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 2: Model 1 + maternal BMI at pregnancy OGTT. Model 3: Model 1 + child's BMI z-score. Model 4: Model 1 + maternal BMI at pregnancy OGTT + child's BMI z-score.

SUPPLEMENTARY DATA

**Supplementary Figure 1. Flowchart describing enrollment for children participating in the HAPO Follow-up Study (FUS).**



## SUPPLEMENTARY DATA

### **APPENDIX HAPO - Follow-up Study Cooperative Research Group**

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