

Supplemental Tables:

Supplemental Table 1: Participant Characteristics by Physiologic Subtype of Gestational Glucose Intolerance, Including Uncategorized.

	Uncategorized	Insulin Resistant GGI	Insulin Deficient GGI	Mixed Pathophysiology GGI	Normal glucose tolerance (NGT)	p-value [^]
N (% of GGI)	11 (4.7%)	115 (48.7%)	70 (26.6%)	40 (17.0%)	1472	
Participant Characteristics:						
Age (years)	31.5 (29.4, 34.9)	32.4 (27.8, 35.9)	34.2 (30.1, 37.3)*	33.4 (31.2, 36.8)*	32.0 (28.4, 34.9)	0.003
Nulliparous	5 (45.5%)	60 (52.2%)	41 (58.6%)	17 (42.5%)	812 (55.2%)	0.46
Private insurance	9 (81.8%)	77 (67.0%)	56 (80.0%)	30 (75.0%)	1146 (77.9%)	0.02
Married/Partnered	8 (72.7%)	76 (66.1%)**	63 (90.0%)	35 (87.5%)	1174 (79.8%)	<0.001
Race/Ethnicity:	**	**				<0.001
<i>White</i>	5 (45.5%)	64 (55.7%)	54 (77.1%)	25 (62.5%)	1043 (70.9%)	
<i>Latina</i>	2 (18.2%)	34 (29.6%)	5 (7.1%)	3 (7.5%)	227 (15.4%)	
<i>Asian</i>	3 (27.3%)	7 (6.1%)	6 (8.6%)	4 (10.0%)	70 (4.8%)	
<i>Black</i>	1 (9.0%)	7 (6.1%)	1 (1.4%)	3 (7.5%)	65 (4.4%)	
<i>Other</i>	0 (0%)	3 (2.6%)	4 (5.7%)	5 (12.5%)	67 (4.6%)	
Maternal Characteristics at 1st Prenatal Visit:						
Systolic BP (mmHg)	110 (102, 110)	112 (110, 120)	110 (100, 120)	112 (104, 120)	110 (104, 120)	0.08
Diastolic BP (mmHg)	60 (60, 74)*	70 (65, 80)	70 (62, 72)	70 (66, 74)	70 (62, 74)	0.03
BMI (kg/m²)	21.6 (19.7, 26.6)*	28.7 (24.9, 32.6)*	22.8 (20.8, 24.9)*	24.8 (23.3, 28.6)*	24.1 (21.9, 27.4)	<0.001

BMI Categories		**	**			<0.001
<i>BMI</i> <25	8 (72.2%)	29 (25.2%)	53 (75.7%)	21 (52.5%)	868 (59.0%)	
<i>BMI</i> 25-<30	3 (27.3%)	37 (32.2%)	15 (21.4%)	13 (32.5%)	388 (26.4%)	
<i>BMI</i> ≥30	0 (0%)	48 (41.7%)	2 (2.9%)	6 (15.0%)	210 (14.3%)	
Laboratory data at 16-20 Weeks Gestation						
GA at HOMA assessment (wks)	17.3 (15.7, 18.1)	17.3 (16.3, 18.4)	16.7 (15.8, 17.9)	17.6 (16.2, 19.0)	17.1 (16.1, 18.4)	0.19
Fasting glucose (mg/dL)	70* (68, 72)	82 (78, 88)*	78 (75, 82)	88 (83, 94)*	78 (74, 82)	<0.001
Fasting insulin (uIU/mL)	24.4 (22.0, 25.8)*	52.4 (39.8, 77.2)*	16.9 (14.8, 20.5)*	28.8 (27.1, 35.0)	31.0 (20.3, 46.2)	<0.001
Additional Pregnancy data:						
Glucose loading test (mg/dL)	155* (144, 166)	152 (145, 164)*	155 (146, 165)*	155 (147, 170)*	108 (94, 120)	<0.001
GDM diagnosis	3 (27.3%)	16 (13.9%)	6 (8.6%)	3 (7.5%)	--	0.22
Gestational weight gain (lbs)	27 (18, 35)	28 (19, 36)	29 (22, 32)	28.5 (21, 35)	30 (23, 36)	0.12
GA at delivery (wks)	39.1 (38.4, 40.1)	39.3 (38.3, 40.3)	39.9 (38.9, 40.7)	39.5 (38.35, 40.15)	39.7 (38.9, 40.6)	0.06

Data in N (%) or median (IQR). ^P values were determined by Fisher's exact test or Pearson chi-square tests for categorical variables or Kruskal-Wallis tests for continuous variables. Bold and * indicates Dunn test results $p < 0.05$ when compared to Normal Glucose Tolerance (NGT). For race/ethnicity, marital status, and BMI categories: bold and ** indicates post-hoc Chi-square results $p < 0.017$ (adjusting for three comparisons) when group compared to NGT. Abbreviations: GGI, gestational glucose intolerance defined as glucose loading test (GLT) ≥ 140 mg/dl. GA, gestational age. Glucose and GLT result measured in mg/dl. BP, blood pressure. BMI, body mass index. GDM, gestational diabetes diagnosis by National Diabetes Data Group (NDDG) criteria. Gestational weight gain measured by subtracting weight at first prenatal visit from weight at last prenatal visit.

Supplemental Table 2: Risk of Adverse Pregnancy Outcomes by Alternative Gestational Glucose Intolerance Physiologic Subtype.

Outcomes	Model	Insulin Resistant GGI OR (95% CI) or β (95% CI) N = 86	p-value	Insulin Deficient GGI OR (95% CI) or β (95% CI) N = 52	p-value	Mixed Pathophysiology GGI OR (95% CI) or β (95% CI) N = 1	p-value	Normal Glucose Tolerance (NGT) N = 1472
Primary Outcome								
Large for Gestational Age (LGA)	Unadjusted	3.27 (1.96, 5.48)	<0.001	1.55 (0.68, 3.51)	0.30	--	--	Ref
	Adjusted*	2.38 (1.35, 4.19)	0.003	1.65 (0.71, 3.81)	0.24	--	--	Ref
Secondary Infant Outcomes								
Birthweight percentile (BW%)	Unadjusted	β = 9.45 (3.33, 15.57)	0.003	β = 1.33 (-6.48, 9.14)	0.74	β = 48.3 (-6.50, 103.0)	0.08	Ref
	Adjusted*	β = 6.54 (0.36, 12.72)	0.04	β = 1.15 (-6.51, 8.81)	0.76	β = 49.9 (-3.62, 103.5)	0.07	Ref
Neonatal Intensive Care Unit (NICU) admission	Unadjusted	1.79 (0.74, 4.32)	0.20	0.53 (0.07, 3.96)	0.54	--	--	Ref
	Adjusted	1.22 (0.47, 3.22)	0.68	0.48 (0.06, 3.62)	0.47	--	--	Ref
Secondary Maternal Outcomes								
Pregnancy-related Hypertension	Unadjusted	1.99 (1.15, 3.46)	0.02	1.85 (0.94, 3.64)	0.08	--	--	Ref
	Adjusted	1.39 (0.78, 2.54)	0.30	2.03 (1.01, 4.05)	0.046	--	--	Ref
Cesarean delivery rate among nulliparous women	Unadjusted	0.90 (0.45, 1.80)	0.77	1.11 (0.51, 2.42)	0.80	--	--	Ref
	Adjusted	0.61 (0.29, 1.26)	0.18	1.09 (0.49, 2.43)	0.83	--	--	Ref

In contrast to Table 2 in the main text of the manuscript where women were categorized based on a 50th percentile cut-off (with percentiles defined in women with glucose loading test [GLT] results <130 mg/dl), in this table, women were categorized based on the 25th percentile cut-off, which results in more uncategorized women and less informative gestational glucose intolerance (GGI) subtyping. Bold odds ratios (OR) and p values indicate statistical significance with $p < 0.05$. LGA: large for gestational age. BW%: birthweight percentile - beta coefficient from linear regression model shown. NICU: neonatal intensive care unit. Ref: referent group. OR's shown from logistic regression models or beta coefficient from linear regression models (BW%). Regression models were adjusted for the following covariates including age, race/ethnicity, marital status, and BMI at <20 weeks gestation. For LGA and BW% models (*), infant sex was added as a covariate.

Supplemental Table 3: Risk of Adverse Pregnancy Outcomes by Gestational Glucose Intolerance Physiologic Subtype Compared to Women with Glucose Loading Test Results Less than 130 mg/dl.

Outcomes	Model	Insulin Resistant GGI OR (95% CI) or β (95% CI) N = 115	p-value	Insulin Deficient GGI OR (95% CI) or β (95% CI) N = 70	p-value	Mixed Pathophysiology GGI OR (95% CI) or β (95% CI) N = 40	p-value	GLT<130 mg/dl N = 1311
Primary Outcome								
Large for Gestational Age (LGA)	Unadjusted	2.57 (1.57, 4.23)	<0.001	1.74 (0.87, 3.50)	0.12	1.87 (0.77, 4.56)	0.17	Ref
	Adjusted*	1.87 (1.09, 3.19)	0.02	2.19 (1.07, 4.49)	0.03	1.80 (0.71, 4.53)	0.21	Ref
Secondary Infant Outcomes								
Birthweight percentile (BW%)	Unadjusted	β = 6.87 (1.48, 12.25)	0.01	β = 1.11 (-5.70, 7.90)	0.75	β = 9.36 (0.48, 18.2)	0.04	Ref
	Adjusted*	β = 3.81 (-1.64, 9.25)	0.17	β = 2.44 (-4.24, 9.11)	0.47	β = 7.90 (-0.80, 16.6)	0.08	Ref
Neonatal Intensive Care Unit (NICU) admission	Unadjusted	2.24 (1.06, 4.74)	0.04	0.42 (0.06, 3.14)	0.40	1.60 (0.37, 6.95)	0.53	Ref
	Adjusted	1.96 (0.87, 4.43)	0.11	0.37 (0.05, 2.77)	0.33	1.18 (0.27, 5.19)	0.83	Ref
Secondary Maternal Outcomes								
Pregnancy-related Hypertension	Unadjusted	2.20 (1.38, 3.52)	0.001	0.93 (0.45, 1.93)	0.85	1.25 (0.54, 2.90)	0.60	Ref
	Adjusted	1.81 (1.09, 3.00)	0.02	1.06 (0.51, 2.21)	0.89	1.12 (0.47, 2.65)	0.80	Ref
Cesarean delivery rate among nulliparous women	Unadjusted	1.14 (0.66, 1.99)	0.64	1.02 (0.52, 2.01)	0.95	1.16 (0.42, 3.17)	0.78	Ref
	Adjusted	0.80 (0.44, 1.45)	0.96	1.02 (0.51, 2.05)	0.80	1.14 (0.41, 3.18)	0.80	Ref

In contrast to Table 2 in the main text of the manuscript, the reference group in this table contains women with a glucose loading test (GLT) result of $< 130\text{mg/dL}$. Bold odds ratios (OR) and p values indicate statistical significance with $p < 0.05$. GGI: gestational glucose intolerance. LGA: large for gestational age. BW%: birthweight percentile - beta coefficient from linear regression model shown. NICU: neonatal intensive care unit. Ref: referent group. OR's shown from logistic regression models or beta coefficient from linear regression models (BW%). Regression models were adjusted for the following covariates including age, race/ethnicity, marital status, and BMI at <20 weeks gestation. For LGA and BW% models (*), infant sex was added as a covariate.