

SUPPLEMENTAL MATERIALS

Supplemental Table I. Comparison of Pre-pregnancy Characteristics for Parous Women with Post-baseline Births Excluded versus Included in the Analysis.

Pre-pregnancy Characteristics Mean (SD) † or N (%)	Excluded (N=259)	Included (N=1133)	p-value
Age at first post-baseline birth, years	28.9 (5.3)	30.1 (4.9)	<.001
Black race, n (%)	157 (61)	551 (49)	<.001
Education, n (%)			0.02
High school or less	86 (33)	289 (26)	
College education	133 (51)	610 (54)	
Graduate or professional degree	40 (15)	234 (21)	
BMI, kg/m ²	25.3 (6.6)	24.9 (5.6)	0.29
Waist circumference, cm	76.2 (13.5)	75.4 (11.8)	0.33
Systolic BP, mm Hg	104 (10)	104 (10)	0.77
Diastolic BP, mm Hg	65 (9)	66 (10)	0.20
Total cholesterol, mg/dL	175 (36)	180 (35)	0.07
LDL-cholesterol, mg/dL	104 (32)	107 (31)	0.10
HDL-cholesterol, mg/dL	57 (14)	58 (14)	0.42
Fasting Triglycerides, mg/dL †	62 (45, 86)	60 (44, 84)	0.27
Fasting glucose, mg/dL	81 (10)	81 (8)	0.31
Fasting insulin, µU/mL †	10.0 (7.2, 13.6)	9.5 (6.5, 13.6)	0.06
HOMA-IR †	2.0 (1.4, 2.8)	1.8 (1.3, 2.7)	0.03

Abbreviations: BMI, body mass index; BP, blood pressure; HDL-cholesterol, high-density lipoprotein cholesterol; HOMA-IR, homeostatic model assessment of insulin resistance; LDL-cholesterol, low-density lipoprotein cholesterol; SD, standard deviation.

Based on data from the pre-pregnancy measurements from closest exam preceding the first post-baseline birth, and Age at the first post-baseline birth.

† Median (25th, 75th percentiles)

Supplemental Table II. Number (%) of Women among Categories of CAC Scores at the End of Follow Up, and at Each CARDIA Exam Year (Years 15, 20 and 25).

CAC Measures N, women	At the End of Follow Up * 1,133	At Year 15 838	At Year 20 906	At Year 25 948	p-value †
Categories of CAC scores, n (%)					<.001
CAC = 0	950 (83.9)	805 (96.1)	818 (90.3)	806 (85.0)	
CAC >0 to 10	94 (8.3)	13 (1.6)	45 (5.0)	42 (4.4)	
CAC >10 to 50	50 (4.4)	10 (1.2)	23 (2.5)	42 (4.4)	
CAC >50 to 99	23 (2.0)	4 (0.5)	10 (1.1)	23 (2.4)	
CAC ≥ 100	16 (1.4)	6 (0.7)	10 (1.1)	35 (3.7)	
CAC score >0					
Frequency, n (%)	183 (16.2)	33 (3.9)	88 (9.7)	142 (15.0)	<.001
Geometric Mean (95%CI)	11.3 (9.0, 14.1)	19.3 (11.3, 33.0)	11.1 (7.7, 15.9)	28.7 (21.8, 37.7)	<.001

* The distribution of CAC scores is based on the CAC measure at the end of follow up (last exam with a CAC measurement, or the 1st exam with a CAC score >0).

CAC, coronary artery calcium;

† Compared the distribution of CAC at Years 15, 20, and 25, using chi-square test or Kruskal-Wallis test.

Supplemental Table III. Pre-pregnancy (1985-2006) and End of Follow Up Characteristics Associated with Coronary Artery Calcium (CAC) Status (2000-2011) among 1,133 CARDIA Women.

Variables	Pre-pregnancy Characteristics			End of Follow Up Characteristics		
	Any CAC (N=183)	No CAC (N=950)	p-value	Any CAC (N=183)	No CAC (N=950)	p-value
Mean (SD) † or N (%)						
Age, years *	30.4 (5.0)	30.0 (4.9)	0.36	46.4 (5.2)	47.9 (4.7)	<.001
Black, n (%)	95 (52)	456 (48)	0.33	95 (52)	456 (48)	0.33
Education, n (%)			0.96			0.70
High school or less	48 (26)	241 (25)		28 (15)	126 (13)	
College education	97 (53)	513 (54)		101 (55)	523 (55)	
Graduate or professional	38 (21)	196 (21)		54 (30)	301 (32)	
Weight Status, n (%)			<.001			0.01
Normal (BMI <25)	88 (48)	630 (66)		43 (24)	306 (32)	
Overweight (BMI: 25-29.9)	42 (23)	179 (19)		44 (24)	254 (27)	
Obese (BMI ≥30)	53 (29)	141 (15)		96 (52)	390 (41)	
BMI, kg/m ²	26.9 (7.0)	24.5 (5.2)	<.001	31.7 (8.5)	29.5 (7.2)	<.001
Waist circumference, cm	80.1 (15.2)	74.5 (10.8)	<.001	93.9 (18.7)	88.0 (15.0)	<.001
Systolic BP, mm Hg	107 (11)	104 (9)	<.001	118 (17)	116 (17)	0.08
Diastolic BP, mm Hg	68 (10)	65 (10)	0.003	75 (11)	73 (12)	0.06
Total cholesterol, mg/dL	187 (42)	178 (34)	0.002	193 (35)	191 (35)	0.43
LDL-cholesterol, mg/dL	115 (37)	106 (30)	<.001	114 (31)	109 (30)	0.04
HDL-cholesterol, mg/dL	55 (13)	59 (14)	0.004	57 (18)	62 (18)	<.001
Fasting Triglycerides, mg/dL †	64 (49, 97)	59 (43, 80)	<.001	94 (64, 134)	79 (61, 114)	0.01
Fasting serum glucose, mg/dL	82 (9)	80 (8)	0.02	96 (27)	94 (21)	0.18
Fasting insulin, μU/mL †	11.0 (7.0, 15.7)	9.2 (6.4, 13.0)	0.001	12.0 (8.0, 19.0)	9.0 (5.7, 14.1)	<.001
HOMA-IR †	2.1 (1.3, 3.1)	1.8 (1.2, 2.6)	0.004	2.7 (1.7, 4.4)	2.0 (1.2, 3.3)	<.001
Metabolic Syndrome, n (%)	13 (7)	18 (2)	<.001	73 (40)	245 (26)	<.001
hs-CRP, μg/mL †	--	--	--	2.1 (0.8, 5.4)	1.5 (0.5, 4.2)	0.007
hs-CRP (>3 μg/mL), n (%)	--	--	--	71 (40)	308 (33)	0.08
Hypertension, n (%)	15 (8)	21 (2)	<.001	79 (43)	248 (26)	<.001
Lipid-lowering medication, n (%)	0	1 (0.1)	1.00	25 (14)	86 (9)	0.055
Glucose tolerance status, n (%)			0.30			0.004
Normoglycemic	176 (96)	928 (98)		87 (48)	523 (55)	
Prediabetes	7 (4)	22 (2)		63 (34)	335 (35)	
Incident diabetes	0	0		33 (18)	92 (10)	
Physical activity score †	261 (154, 434)	253 (122, 436)	0.31	210 (98, 418)	224 (101, 426)	0.65
Smoking, lifetime pack-years	3.3 (5.4)	1.9 (4.2)	<.001	5.7 (8.4)	3.3 (7.4)	<.001
A priori diet quality score ‡	65 (13)	64 (14)	0.44	67 (11)	67 (12)	0.89
Family history of diabetes, n (%)	26 (14)	141 (15)	0.86	81 (45)	424 (45)	0.97
Family history heart disease, n (%)	39 (22)	153 (16)	0.07	106 (58)	508 (54)	0.24
Oral contraceptive use, n (%)	164 (90)	841 (89)	0.67	177 (97)	896 (94)	0.21
Menopausal hormone therapy, n (%)	--	--	--	63 (7)	10 (5)	0.56
Parity, n (%)			0.49			0.49
Nulliparous	122 (67)	660 (69)		--	--	
One	42 (23)	182 (19)		39 (21)	225 (24)	
Two or more	19 (10)	108 (11)		144 (79)	725 (76)	

Variables	Pre-pregnancy Characteristics			End of Follow Up Characteristics		
	Any CAC (N=183)	No CAC (N=950)	p- value	Any CAC (N=183)	No CAC (N=950)	p- value
Mean (SD) † or N (%)						
GD Pregnancy, n (%)	0 (0)	3 (0.3)	1.00	34 (19)	105 (11)	0.005
Hypertensive disorder of pregnancy, n (%)	--	--	--	49 (27)	193 (20)	0.051
Preterm birth, n (%)	--	--	--	51 (28)	234 (25)	0.36
Time since last birth, years	--	--	--	13.1 (5.9)	15.0 (5.8)	<.001
Post-menopausal status, n (%)	--	--	--	63 (34)	327 (34)	1.00
Weight change, kg	--	--	--	13.2 (15.4)	13.5 (13.3)	0.76

Abbreviations: BMI, body mass index; BP, blood pressure; CAC, coronary artery calcium; GD, gestational diabetes; HDL-cholesterol, high-density lipoprotein cholesterol; HOMA-IR, homeostatic model assessment of insulin resistance; hs-CRP, high sensitivity C-reactive protein; LDL-cholesterol, low-density lipoprotein cholesterol; SD, standard deviation.

† Median (25th, 75th percentiles)

* For beginning of follow up: Age at the first post-baseline birth; and At follow up: Age at the end of follow up.

‡ Prior to first post-baseline birth: based on baseline *a priori* diet quality score (Year 0); At follow up: based on the average of *a priori* diet quality scores from exams (Years 0, 7, and 20).

Of 1133 women, 15 women were missing a hs-CRP measurement at the end of follow up.

Supplemental Table IV. Adjusted Hazard Ratios (HR) and (95%CI) of Any CAC (score>0) Associated with GD Status and Subsequent Glucose Tolerance Groups After Pregnancy (normoglycemia, prediabetes or incident diabetes) in Women with Adjustment for HDP, or Exclusion of Women with HDP (No HDP).

Exposure Groups	Entire sample (N=1133)					Samples with No HDP (N=891)		
	% Any CAC (n/N)†	HR (95%CI)		Adjusted for HDP		% Any CAC (n/N)†	HR (95%CI)	
GD Status								
No GD	15.0 (149/994)	1	Referent	1	Referent	14.1 (112/793)	1	Referent
GD	24.5 (34/139)	1.66	(1.13, 2.43)	1.67	(1.14, 2.44)	22.5 (22/98)	1.71	(1.08, 2.73)
Incident Diabetes by GD Status								
Incident diabetes								
No GD	27.0 (24/89)	1	Referent	1	Referent	26.2 (16/61)	1	Referent
GD	25.0 (9/36)	1.03	(0.45, 2.33)	1.08	(0.46, 2.49)	22.7 (5/22)	1.18	(0.36, 3.90)
No diabetes								
No GD	13.8 (125/905)	1	Referent	1	Referent	13.1 (96/732)	1	Referent
GD	24.3 (25/103)	1.95	(1.27, 3.01)	1.95	(1.27, 3.01)	22.4 (17/76)	1.83	(1.09, 3.08)
GD and Transitions in Glucose Tolerance Groups								
No GD/Normoglycemia	12.9 (72/557)	1	Referent	1	Referent	12.4 (57/459)	1	Referent
No GD/Prediabetes	15.2 (53/348)	1.5	(1.03, 2.17)	1.49	(1.03, 2.17)	14.3 (39/273)	1.41	(0.92, 2.18)
No GD/Incident diabetes	27.0 (24/89)	1.79	(1.06, 3.01)	1.78	(1.06, 3.01)	26.2 (16/61)	1.92	(1.02, 3.63)
GD/Normoglycemia	28.3 (15/53)	2.24	(1.28, 3.92)	2.25	(1.28, 3.93)	25.6 (10/39)	2.04	(1.04, 4.00)
GD/Prediabetes	20.0 (10/50)	2.08	(1.06, 4.07)	2.08	(1.06, 4.08)	18.9 (7/37)	2.06	(0.92, 4.60)
GD/Incident diabetes	25.0 (9/36)	1.76	(0.85, 3.67)	1.77	(0.85, 3.70)	22.7 (5/22)	2.09	(0.81, 5.41)

All models adjusted for race, age at the first birth and pre-pregnancy systolic blood pressure (BP) and Body Mass Index (BMI), and time-varying lifetime smoking exposure (pack-years) and time-varying hypertension status during follow up. Additional adjustment for a history of hypertensive disorders of pregnancy (HDP) (ever/never).

Abbreviations: BMI, body mass index; BP, blood pressure; CAC, coronary artery calcium; GD, gestational diabetes; 95%CI, 95% Confidence Interval; HDP, hypertensive disorders of pregnancy.

The sensitivity analysis excludes women with self-report of hypertensive disorders of pregnancy (HDP).

†At the end of follow up

Supplemental Table V. Sensitivity Analysis among Nulliparas: Adjusted Hazard Ratios (HR) and 95% Confidence Interval (95%CI) of Any CAC Associated with GD Status and Subsequent Glucose Tolerance Groups (normoglycemia, prediabetes or incident diabetes) in Women. Additional adjustment for hypertensive disorders of pregnancy (HDP) (ever/never); and Analysis of the sample of Nulliparas with No HDP.

Exposure Groups	Nulliparas at baseline (N=782)					Nulliparas with No HDP (N=612)		
	% Any CAC (n/N)†	HR (95%CI)		Adjusted for HDP		% Any CAC (n/N)†	HR (95%CI)	
<u>GD Status</u>								
No GD	14.4 (99/689)	1	Referent	1	Referent	13.7 (75/546)	1	Referent
GD	24.7 (23/93)	1.72	(1.08, 2.73)	1.74	(1.09, 2.78)	24.2 (16/66)	2.04	(1.19, 3.52)
<u>Incident Diabetes by GD Status</u>								
Incident diabetes								
No GD	24.5 (12/49)	1	Referent	1	Referent	26.5 (9/34)	1	Referent
GD	29.2 (7/24)	1.31	(0.48, 3.58)	1.60	(0.54, 4.72)	30.8 (4/13)	1.90	(0.45, 8.01)
No diabetes								
Non-GD	13.6 (87/640)	1	Referent	1	Referent	12.9 (66/512)	1	Referent
GD	23.2 (16/69)	2.05	(1.20, 3.51)	2.05	(1.2, 3.51)	22.6 (12/53)	1.98	(1.06, 3.67)
<u>GD and Subsequent Glucose Tolerance Groups</u>								
No GD/Normoglycemia	12.1 (49/405)	1	Referent	1	Referent	11.6 (39/336)	1	Referent
No GD/Prediabetes	16.2 (38/235)	1.64	(1.05, 2.58)	1.64	(1.05, 2.58)	15.3 (27/176)	1.54	(0.91, 2.60)
No GD/Incident diabetes	24.5 (12/49)	1.58	(0.78, 3.22)	1.59	(0.78, 3.22)	26.5 (9/34)	1.84	(0.81, 4.19)
GD/Normoglycemia	27.8 (10/36)	2.40	(1.21, 4.77)	2.41	(1.21, 4.78)	25.0 (7/28)	2.20	(0.98, 4.93)
GD/Prediabetes	18.2 (6/33)	2.04	(0.86, 4.81)	2.05	(0.87, 4.85)	20.0 (5/25)	2.48	(0.96, 6.44)
GD/Incident diabetes	29.2 (7/24)	1.97	(0.83, 4.69)	2.02	(0.84, 4.86)	30.8 (4/13)	3.27	(1.11, 9.62)

All models adjusted for race, age at the first birth, pre-pregnancy systolic BP and BMI, and time-varying lifetime smoking exposure (pack years) and time-varying hypertension status during follow up. Additional adjustment for a history of hypertensive disorders of pregnancy (HDP) (ever/never).

Abbreviations: BMI, body mass index; BP, blood pressure; CAC, coronary artery calcium; GD, gestational diabetes; 95%CI, 95% Confidence Interval; HDP, hypertensive disorders of pregnancy.

† At the end of follow up