

Supplementary Materials for:

**Plasma ApoC-III Levels, Triglycerides, and Coronary Artery
Calcification in Type 2 Diabetics**

Correspondence:

Muredach P. Reilly, MB, MS, FAHA

muredach@mail.med.upenn.edu

Daniel J. Rader, MD

rader@mail.med.upenn.edu

Supplementary Table I: Baseline Characteristics of Study Cohort Stratified by Ethnicity

	Caucasian (N= 867)	African American (N=483)	Other (N= 72)
Age (years)	60 (54-66)*	58 (52-65)	57(52-63)
Women (%)	30.1	47.8	36.7
Metabolic syndrome (%)	80.4	75.5	73.5
Hypertension (%)	61.6	72.5	49.1
Current tobacco use (%)	48.7	48.1	42.7
BMI (kg/m²)	32 (28.4-36)	32.3 (28.5-36.8)	30.4 (26.4-34.2)
HbA1c	6.6 (6.1-7.4)	6.9 (6.2-8.1)	6.9(6.4-7.9)
Total Cholesterol(mg/dl)	168 (148-195)	174 (152-200)	176.5 (150-204.5)
Triglycerides (mg/dl)	132 (92-191)	96 (71- 128)	121 (87-162.5)
HDL-C (mg/dl)	44 (37-52)	49 (40-59)	42 (37-51.5)
LDL-C (mg/dl)	92 (76-114)	100 (81-122)	102 (78-119.5)
ApoC-III (mg/dl)	12.2 (9.1-16.4)	9.3 (6.3-13.3)	11.8 (9.3-16)
ApoA-I (mg/dl)	128 (115-142)	134 (120-150.5)	126 (112-141)
ApoA-II (mg/dl)	33 (30-37)	34 (31-38)	33 (31- 38)
ApoB (mg/dl)	81 (70-94)	81 (68-95)	82 (69-99)
Lp(a) (mg/dl)	12 (6-31)	47 (22-81.5)	17.5 (7-37)
ApoE (mg/dl)	3.8 (3.1-4.4)	4.1 (3.4-4.9)	3.9 (3.2-4.7)
Leptin (ng/ml)	13.1 (7.3-22.8)	16.6 (8.3-32.2)	9.7 (5.6-23.1)
Insulin (iu/ml)	15 (10.6-21.6)	15.3 (10.4-22.1)	12.6 (8.2-19.2)
hs CRP (mg/l)	1.7 (0.8-4.1)	2.7 (1- 6)	1.1 (0.6-2.9)
CAC Score	88 (0-401)	0 (0-79)	7 (0- 143)
Medications (%)	Caucasian (N= 867)	African American (N=483)	Other (N= 72)
Aspirin	46.5	39.4	31
Statins	60.4	48.4	44.8
Fibrates	9.4	1.4	5.1
Niacin Derivatives	7	2.3	5.1
Ezetimibe	6.5	2.9	3.4
Metformin	65.3	58.9	53.8
Sulfonylureas	35.1	34.6	37.9
Thiazolidinediones (TZDs)	25	18.1	25.8
Insulin	17.6	29.3	18.8
Exenatide	4.4	3.7	2.6
Sitagliptan	5	3	3.4

*All quantitative values are given as median (IQR)

Supplementary Table II: Association of ApoC-III with Lipid and Cardiometabolic Traits

Measure	All (N=1422)		Women (N=597)		Men (N=825)	
	β^*	P-value	β^*	P-value	β^*	P-value
Total Cholesterol	0.4	$P < 1 \times 10^{-4}$	0.34	$P < 1 \times 10^{-4}$	0.45	$P < 1 \times 10^{-4}$
TG**	0.58	$P < 1 \times 10^{-4}$	0.53	$P < 1 \times 10^{-4}$	0.61	$P < 1 \times 10^{-4}$
LDL-C	0.14	$P < 1 \times 10^{-4}$	0.16	$P < 1 \times 10^{-4}$	0.12	$P < 1 \times 10^{-4}$
HDL-C	0.008	$P = 0.71$	0.071	$P = 0.08$	-0.05	$P = 0.12$
ApoA-I	-0.06	$P < 0.01$	-0.023	$P = 0.57$	-0.12	$P < 1 \times 10^{-4}$
ApoA-II	0.014	$P = 0.58$	0.045	$P = 0.27$	-0.15	$P = 0.63$
ApoB	0.35	$P < 1 \times 10^{-4}$	0.33	$P < 1 \times 10^{-4}$	0.37	$P < 1 \times 10^{-4}$
ApoE	0.34	$P < 1 \times 10^{-4}$	0.32	$P < 1 \times 10^{-4}$	0.38	$P < 1 \times 10^{-4}$
BMI	0.004	$P = 0.85$	0.02	$P = 0.50$	0.026	$P = 0.37$
HbA1c	0.14	$P < 1 \times 10^{-4}$	0.04	$P = 0.24$	0.23	$P < 1 \times 10^{-4}$
Glucose	0.11	$P < 1 \times 10^{-4}$	0.03	$P = 0.35$	0.2	$P < 1 \times 10^{-4}$
Insulin	-0.011	$P = 0.72$	1×10^{-6}	$P = 0.99$	-0.007	$P = 0.87$
Leptin	-0.05	$P = 0.14$	-0.012	$P = 0.76$	-0.037	$P = 0.30$
Waist Circumference	0.04	$P = 0.07$	0.049	$P = 0.16$	0.04	$P = 0.16$

* Linear regression model adjusted for age, gender, race, BMI, smoking, alcohol use, GFR, medications (statin, fibrates, niacin, ezetimibe, TZD, metformin, sulfonyleurea, insulin, exenatide, and sitagliptan). Beta coefficient indicates increment (positive or negative) in parameter per 1-standard deviation increase in ApoC-III levels.

** Triglyceride levels were log-transformed since baseline values were not normally distributed

Supplementary Table III: Association of ApoC-III with Glucose Traits Stratified by Plasma TG

	Covariates	TG < 150 mg/dl (N=963)	TG > 150 mg/dl (N=436)
		β (SE, P-value)	β (SE, P-value)
HbA1c	Unadjusted	0.004 (0.005, 0.88)	0.25 (0.05, 1×10^{-4})
	Age, Gender, Race	0.01 (0.005, 0.65)	0.25 (0.05, 1×10^{-4})
	BMI, Alcohol use, smoking, GFR	0.01 (0.005, 0.61)	0.24 (0.05, 1×10^{-4})
	Insulin, oral hypoglycemic agents, statins, niacin, fibrates	0.02 (0.004, 0.38)	0.23 (0.05, 1×10^{-4})
Fasting Glucose	Unadjusted	-0.03 (0.16, 0.91)	0.18 (0.20, 1×10^{-4})
	Age, Gender, Race	0.006 (0.16, 0.84)	0.18 (0.20, 1×10^{-4})
	BMI, Alcohol use, smoking, GFR	0.008 (0.16, 0.79)	0.17 (0.20, 1×10^{-4})
	Insulin, oral hypoglycemic agents, statins, niacin, fibrates	0.011 (0.15, 0.70)	0.17 (0.20, 1×10^{-4})

Supplementary Table IV: ApoC-III Concentration Stratified by Presence vs. Absence of CAC

CAC Score Category	ApoC-III (mg/dl) (mean \pm SD)	OR=1.33 95% CI 1.05-1.69 P<0.05
CAC = 0 (N=519)	11.3 \pm 5.5	
CAC > 0 (N=899)	12.7 \pm 5.8	