

## Supplemental Data

Supplemental Table 1 Pearson correlation coefficients for correlations between glycemic biomarkers and adiposity measures in U.S. adults without diagnosed diabetes (n=9,750) and with diagnosed diabetes (n=1,085), NHANES 1999-2004.

	GA (%)		HbA1c (%)		GA:HbA1c	
	Men	Women	Men	Women	Men	Women
<b>Without Diabetes</b>						
BMI (kg/m <sup>2</sup> )	-0.09	-0.17	0.22	0.24	-0.30	-0.36
Waist circumference (cm)	-0.07	-0.15	0.25	0.30	-0.30	-0.39
Percent total body fat (%)	-0.06	-0.18	0.23	0.23	-0.27	-0.37
Percent trunk fat (%)	-0.06	-0.19	0.25	0.27	-0.28	-0.42
Fat mass index (kg/m <sup>2</sup> )	-0.08	-0.18	0.24	0.24	-0.30	-0.37
<b>With Diabetes</b>						
BMI (kg/m <sup>2</sup> )	-0.26	-0.13	-0.09	0.00	-0.37	-0.28
Waist circumference (cm)	-0.28	-0.15	-0.12	0.02	-0.37	-0.33
Percent total body fat (%)	-0.28	-0.16	-0.13	-0.03	-0.34	-0.31
Percent trunk fat (%)	-0.30	-0.16	-0.12	0.03	-0.39	-0.39
Fat mass index (kg/m <sup>2</sup> )	-0.26	-0.15	-0.10	-0.02	-0.37	-0.28

BMI, body mass index; GA, glycated albumin; HbA1c, hemoglobin A1c; NHANES, National Health and Nutrition Examination Survey

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Supplemental Table 2 Linear regression coefficients for association between measures of adiposity (per weighted standard deviation) and glycated albumin (GA), HbA1c, and GA:HbA1c among U.S. adults without diagnosed diabetes (n=9,750) and with diagnosed diabetes (n=1,085), NHANES 1999-2004.<sup>a</sup>

	Model	Men			Women		
		GA (%)	HbA1c (%)	GA:HbA1c <sup>b</sup>	GA (%)	HbA1c (%)	GA:HbA1c <sup>b</sup>
<b>Without Diabetes</b>							
BMI (kg/m <sup>2</sup> )	Crude	<b>-0.18 (0.04)</b>	<b>0.13 (0.01)</b>	<b>-0.09 (0.01)</b>	<b>-0.31 (0.03)</b>	<b>0.12 (0.01)</b>	<b>-0.11 (0.01)</b>
	Model 1	<b>-0.22 (0.04)</b>	<b>0.13 (0.01)</b>	<b>-0.10 (0.01)</b>	<b>-0.38 (0.03)</b>	<b>0.11 (0.01)</b>	<b>-0.12 (0.01)</b>
	Model 2a	<b>-0.30 (0.04)</b>	<b>0.12 (0.01)</b>	<b>-0.11 (0.01)</b>	<b>-0.47 (0.03)</b>	<b>0.11 (0.01)</b>	<b>-0.14 (0.01)</b>
	Model 2b	<b>-0.24 (0.04)</b>	<b>0.11 (0.01)</b>	<b>-0.09 (0.01)</b>	<b>-0.36 (0.03)</b>	<b>0.09 (0.01)</b>	<b>-0.11 (0.01)</b>
Waist circumference (cm)	Crude	<b>-0.14 (0.04)</b>	<b>0.14 (0.01)</b>	<b>-0.09 (0.01)</b>	<b>-0.29 (0.03)</b>	<b>0.15 (0.01)</b>	<b>-0.13 (0.01)</b>
	Model 1	<b>-0.26 (0.04)</b>	<b>0.12 (0.01)</b>	<b>-0.10 (0.01)</b>	<b>-0.38 (0.03)</b>	<b>0.13 (0.01)</b>	<b>-0.13 (0.01)</b>
	Model 2a	<b>-0.35 (0.04)</b>	<b>0.12 (0.01)</b>	<b>-0.12 (0.01)</b>	<b>-0.46 (0.03)</b>	<b>0.13 (0.01)</b>	<b>-0.15 (0.01)</b>
	Model 2b	<b>-0.29 (0.04)</b>	<b>0.10 (0.01)</b>	<b>-0.10 (0.01)</b>	<b>-0.36 (0.03)</b>	<b>0.11 (0.01)</b>	<b>-0.12 (0.01)</b>
Percent total body fat (%)	Crude	<b>-0.12 (0.03)</b>	<b>0.12 (0.01)</b>	<b>-0.08 (0.01)</b>	<b>-0.32 (0.03)</b>	<b>0.11 (0.01)</b>	<b>-0.11 (0.01)</b>
	Model 1	<b>-0.26 (0.04)</b>	<b>0.10 (0.01)</b>	<b>-0.09 (0.01)</b>	<b>-0.45 (0.03)</b>	<b>0.07 (0.01)</b>	<b>-0.12 (0.01)</b>
	Model 2a	<b>-0.33 (0.04)</b>	<b>0.10 (0.01)</b>	<b>-0.10 (0.01)</b>	<b>-0.54 (0.03)</b>	<b>0.07 (0.01)</b>	<b>-0.13 (0.01)</b>
	Model 2b	<b>-0.29 (0.04)</b>	<b>0.07 (0.01)</b>	<b>-0.09 (0.01)</b>	<b>-0.46 (0.03)</b>	<b>0.04 (0.01)</b>	<b>-0.11 (0.01)</b>
Percent trunk fat (%)	Crude	<b>-0.12 (0.03)</b>	<b>0.14 (0.01)</b>	<b>-0.08 (0.0)</b>	<b>-0.34 (0.03)</b>	<b>0.13 (0.01)</b>	<b>-0.13 (0.01)</b>
	Model 1	<b>-0.29 (0.04)</b>	<b>0.11 (0.01)</b>	<b>-0.10 (0.01)</b>	<b>-0.48 (0.03)</b>	<b>0.09 (0.01)</b>	<b>-0.13 (0.01)</b>
	Model 2a	<b>-0.36 (0.04)</b>	<b>0.11 (0.01)</b>	<b>-0.11 (0.01)</b>	<b>-0.56 (0.03)</b>	<b>0.09 (0.01)</b>	<b>-0.15 (0.01)</b>
	Model 2b	<b>-0.32 (0.04)</b>	<b>0.09 (0.01)</b>	<b>-0.10 (0.01)</b>	<b>-0.50 (0.04)</b>	<b>0.07 (0.01)</b>	<b>-0.13 (0.01)</b>
Fat mass index (kg/m <sup>2</sup> )	Crude	<b>-0.15 (0.03)</b>	<b>0.12 (0.01)</b>	<b>-0.08 (0.01)</b>	<b>-0.31 (0.03)</b>	<b>0.11 (0.01)</b>	<b>-0.11 (0.0)</b>
	Model 1	<b>-0.22 (0.03)</b>	<b>0.11 (0.01)</b>	<b>-0.09 (0.01)</b>	<b>-0.39 (0.03)</b>	<b>0.09 (0.01)</b>	<b>-0.11 (0.0)</b>
	Model 2a	<b>-0.30 (0.04)</b>	<b>0.11 (0.01)</b>	<b>-0.10 (0.01)</b>	<b>-0.48 (0.03)</b>	<b>0.09 (0.01)</b>	<b>-0.13 (0.01)</b>
	Model 2b	<b>-0.25 (0.04)</b>	<b>0.09 (0.01)</b>	<b>-0.09 (0.01)</b>	<b>-0.39 (0.03)</b>	<b>0.06 (0.01)</b>	<b>-0.10 (0.01)</b>
<b>With Diabetes</b>							
BMI (kg/m <sup>2</sup> )	Crude	<b>-1.65 (0.35)</b>	-0.17 (0.09)	<b>-0.16 (0.02)</b>	<b>-0.87 (0.33)</b>	0.01 (0.12)	<b>-0.12 (0.03)</b>
	Model 1	<b>-1.68 (0.32)</b>	-0.17 (0.09)	<b>-0.16 (0.02)</b>	<b>-1.05 (0.37)</b>	-0.03 (0.12)	<b>-0.13 (0.04)</b>
	Model 2a	<b>-1.87 (0.34)</b>	<b>-0.20 (0.09)</b>	<b>-0.17 (0.02)</b>	<b>-1.49 (0.45)</b>	-0.10 (0.13)	<b>-0.16 (0.04)</b>
	Model 2b	<b>-1.81 (0.32)</b>	<b>-0.22 (0.08)</b>	<b>-0.16 (0.02)</b>	<b>-1.24 (0.40)</b>	-0.17 (0.14)	<b>-0.10 (0.04)</b>
Waist circumference (cm)	Crude	<b>-1.78 (0.38)</b>	<b>-0.22 (0.11)</b>	<b>-0.16 (0.02)</b>	<b>-0.98 (0.37)</b>	0.04 (0.11)	<b>-0.14 (0.03)</b>
	Model 1	<b>-1.73 (0.35)</b>	-0.18 (0.10)	<b>-0.16 (0.02)</b>	<b>-0.92 (0.37)</b>	0.09 (0.10)	<b>-0.14 (0.03)</b>
	Model 2a	<b>-1.89 (0.36)</b>	<b>-0.21 (0.10)</b>	<b>-0.17 (0.02)</b>	<b>-1.28 (0.44)</b>	0.04 (0.10)	<b>-0.17 (0.03)</b>
	Model 2b	<b>-1.91 (0.34)</b>	<b>-0.24 (0.10)</b>	<b>-0.16 (0.02)</b>	<b>-1.09 (0.42)</b>	-0.03 (0.11)	<b>-0.12 (0.04)</b>
Percent total body fat (%)	Crude	<b>-1.66 (0.50)</b>	-0.22 (0.13)	<b>-0.13 (0.03)</b>	<b>-1.08 (0.31)</b>	-0.07 (0.11)	<b>-0.13 (0.03)</b>

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	Model 1	<b>-1.38 (0.46)</b>	-0.10 (0.13)	<b>-0.14 (0.02)</b>	<b>-0.96 (0.28)</b>	-0.02 (0.10)	<b>-0.13 (0.03)</b>
	Model 2a	<b>-1.49 (0.48)</b>	-0.12 (0.13)	<b>-0.15 (0.02)</b>	<b>-1.34 (0.34)</b>	-0.08 (0.10)	<b>-0.16 (0.03)</b>
	Model 2b	<b>-1.47 (0.44)</b>	-0.14 (0.12)	<b>-0.14 (0.02)</b>	<b>-1.11 (0.28)</b>	-0.15 (0.10)	<b>-0.11 (0.03)</b>
Percent trunk fat (%)	Crude	<b>-1.85 (0.52)</b>	-0.22 (0.14)	<b>-0.16 (0.04)</b>	<b>-1.04 (0.33)</b>	0.05 (0.09)	<b>-0.16 (0.03)</b>
	Model 1	<b>-1.58 (0.48)</b>	-0.10 (0.13)	<b>-0.16 (0.02)</b>	<b>-1.02 (0.33)</b>	0.06 (0.08)	<b>-0.16 (0.03)</b>
	Model 2a	<b>-1.66 (0.49)</b>	-0.12 (0.13)	<b>-0.17 (0.02)</b>	<b>-1.33 (0.37)</b>	0.02 (0.09)	<b>-0.19 (0.03)</b>
	Model 2b	<b>-1.70 (0.47)</b>	-0.15 (0.12)	<b>-0.16 (0.03)</b>	<b>-1.22 (0.36)</b>	-0.06 (0.09)	<b>-0.15 (0.03)</b>
Fat mass index ( $\text{kg}/\text{m}^2$ )	Crude	<b>-1.53 (0.41)</b>	-0.16 (0.11)	<b>-0.14 (0.02)</b>	<b>-1.01 (0.30)</b>	-0.04 (0.11)	<b>-0.12 (0.03)</b>
	Model 1	<b>-1.40 (0.37)</b>	-0.11 (0.10)	<b>-0.14 (0.02)</b>	<b>-1.13 (0.31)</b>	-0.07 (0.10)	<b>-0.13 (0.03)</b>
	Model 2a	<b>-1.54 (0.40)</b>	-0.13 (0.10)	<b>-0.15 (0.02)</b>	<b>-1.55 (0.38)</b>	-0.14 (0.11)	<b>-0.16 (0.03)</b>
	Model 2b	<b>-1.49 (0.36)</b>	-0.15 (0.09)	<b>-0.14 (0.02)</b>	<b>-1.37 (0.34)</b>	-0.22 (0.12)	<b>-0.11 (0.03)</b>

<sup>a</sup>Values are beta coefficient (SE) per 1 SD of the sex-stratified adiposity measurement. Boldface indicates P<0.05. Model 1 adjusts for age, race/ethnicity, smoking status, and eGFR. Model 2 adjusted for Model 1 covariates and additionally controlled for (a) serum albumin (g/dL) or (b) natural log-transformed C-reactive protein (mg/dL). Men without diabetes: 1 SD = 5.2  $\text{kg}/\text{m}^2$  BMI, 14.1 cm waist circumference, 5.7% body fat, 7.0% trunk fat, 2.5  $\text{kg}/\text{m}^2$  fat mass index. Women without diabetes: 1 SD = 6.6  $\text{kg}/\text{m}^2$  BMI, 14.9 cm waist circumference, 6.2% body fat, 7.9% trunk fat, 3.7  $\text{kg}/\text{m}^2$  fat mass index. Men with diabetes: 1 SD = 6.6  $\text{kg}/\text{m}^2$  BMI, 16.3 cm waist circumference, 4.9% body fat, 6.0% trunk fat, 2.5  $\text{kg}/\text{m}^2$  fat mass index. Women with diabetes: 1 SD = 7.6  $\text{kg}/\text{m}^2$  BMI, 16.0 cm waist circumference, 5.6% body fat, 6.8% trunk fat, 3.6  $\text{kg}/\text{m}^2$  fat mass index. BMI, body mass index; GA, glycated albumin; HbA1c, hemoglobin A1c; SD, standard deviation; SE, standard error.

<sup>b</sup>Beta coefficients for GA:HbA1c, the ratio of GA to HbA1c, represent the divergence of GA from HbA1c associated with each 1 SD increase in adiposity. A negative coefficient indicates that the change in albumin glycation is less than the change in hemoglobin glycation (i.e. GA increases less than HbA1c) as adiposity increases.

Supplemental Data

Supplemental Table 3 Linear regression coefficients for associations between measures of adiposity (per weighted standard deviation) and glycated albumin, HbA1c, and GA:HbA1c in sensitivity analysis excluding conditions that affect albumin or red blood cell turnover among U.S. adults without diagnosed diabetes (n=7,984) and with diagnosed diabetes (n=679), NHANES 1999-2004.<sup>a</sup>

	Model	Men			Women		
		GA (%)	HbA1c (%)	GA:HbA1c <sup>b</sup>	GA (%)	HbA1c (%)	GA:HbA1c <sup>b</sup>
<b>Without Diabetes</b>							
BMI (kg/m <sup>2</sup> )	Unadjusted	-0.21 (0.03)	0.11 (0.01)	-0.09 (0.01)	-0.34 (0.03)	0.12 (0.01)	-0.12 (0.01)
	1	-0.25 (0.03)	0.11 (0.01)	-0.09 (0.01)	-0.39 (0.03)	0.10 (0.01)	-0.12 (0.01)
	2a	-0.33 (0.03)	0.10 (0.01)	-0.11 (0.01)	-0.49 (0.03)	0.10 (0.01)	-0.14 (0.01)
	2b	-0.27 (0.03)	0.09 (0.01)	-0.09 (0.01)	-0.38 (0.03)	0.08 (0.01)	-0.11 (0.01)
Waist circumference	Unadjusted	-0.17 (0.03)	0.13 (0.01)	-0.09 (0.01)	-0.32 (0.03)	0.15 (0.01)	-0.13 (0.01)
	1	-0.29 (0.03)	0.11 (0.01)	-0.10 (0.01)	-0.40 (0.03)	0.12 (0.01)	-0.13 (0.01)
	2a	-0.37 (0.03)	0.10 (0.01)	-0.11 (0.01)	-0.49 (0.03)	0.12 (0.01)	-0.15 (0.01)
	2b	-0.32 (0.04)	0.09 (0.01)	-0.10 (0.01)	-0.39 (0.04)	0.10 (0.01)	-0.12 (0.01)
Percent total body fat (%)	Unadjusted	-0.13 (0.03)	0.12 (0.01)	-0.08 (0.01)	-0.34 (0.03)	0.11 (0.01)	-0.12 (0.01)
	1	-0.26 (0.04)	0.09 (0.01)	-0.09 (0.01)	-0.46 (0.03)	0.07 (0.01)	-0.12 (0.01)
	2a	-0.33 (0.04)	0.09 (0.01)	-0.10 (0.01)	-0.56 (0.03)	0.07 (0.01)	-0.14 (0.01)
	2b	-0.29 (0.04)	0.07 (0.01)	-0.08 (0.01)	-0.47 (0.04)	0.04 (0.01)	-0.11 (0.01)
Percent trunk fat (%)	Unadjusted	-0.12 (0.04)	0.13 (0.01)	-0.08 (0.01)	-0.37 (0.03)	0.13 (0.01)	-0.13 (0.01)
	1	-0.29 (0.04)	0.10 (0.01)	-0.10 (0.01)	-0.49 (0.03)	0.09 (0.01)	-0.14 (0.01)
	2a	-0.35 (0.04)	0.10 (0.01)	-0.11 (0.01)	-0.58 (0.03)	0.09 (0.01)	-0.15 (0.01)
	2b	-0.32 (0.04)	0.08 (0.01)	-0.09 (0.01)	-0.52 (0.04)	0.06 (0.01)	-0.13 (0.01)
Fat mass index (kg/m <sup>2</sup> )	Unadjusted	-0.17 (0.03)	0.11 (0.01)	-0.08 (0.01)	-0.34 (0.03)	0.11 (0.01)	-0.11 (0.01)
	1	-0.24 (0.03)	0.10 (0.01)	-0.09 (0.01)	-0.41 (0.03)	0.09 (0.01)	-0.12 (0.01)
	2a	-0.32 (0.03)	0.09 (0.01)	-0.10 (0.01)	-0.50 (0.02)	0.08 (0.01)	-0.13 (0.01)
	2b	-0.27 (0.03)	0.08 (0.01)	-0.08 (0.01)	-0.41 (0.03)	0.06 (0.01)	-0.11 (0.01)
<b>With Diabetes</b>							
BMI (kg/m <sup>2</sup> )	Unadjusted	-1.77 (0.34)	-0.29 (0.11)	-0.14 (0.02)	-0.84 (0.39)	0.02 (0.13)	-0.12 (0.04)
	1	-1.80 (0.33)	-0.28 (0.11)	-0.15 (0.02)	-1.23 (0.45)	-0.07 (0.12)	-0.14 (0.04)
	2a	-2.01 (0.35)	-0.30 (0.11)	-0.17 (0.02)	-1.71 (0.52)	-0.17 (0.15)	-0.17 (0.04)
	2b	-2.09 (0.33)	-0.37 (0.11)	-0.15 (0.03)	-1.50 (0.51)	-0.21 (0.14)	-0.12 (0.04)
Waist circumference	Unadjusted	-1.93 (0.37)	-0.34 (0.13)	-0.14 (0.02)	-0.98 (0.45)	0.07 (0.12)	-0.15 (0.04)
	1	-1.84 (0.36)	-0.28 (0.12)	-0.15 (0.03)	-1.08 (0.46)	0.06 (0.10)	-0.16 (0.04)
	2a	-2.04 (0.40)	-0.30 (0.13)	-0.17 (0.03)	-1.50 (0.51)	-0.01 (0.12)	-0.19 (0.04)
	2b	-2.21 (0.37)	-0.39 (0.12)	-0.16 (0.03)	-1.35 (0.56)	-0.04 (0.12)	-0.15 (0.04)

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Percent total body fat (%)	Unadjusted	<b>-1.71 (0.49)</b>	-0.26 (0.16)	<b>-0.13 (0.02)</b>	<b>-1.05 (0.36)</b>	-0.06 (0.11)	<b>-0.13 (0.03)</b>
	1	<b>-1.49 (0.46)</b>	-0.15 (0.15)	<b>-0.14 (0.02)</b>	<b>-1.05 (0.35)</b>	-0.06 (0.10)	<b>-0.13 (0.03)</b>
	2a	<b>-1.58 (0.50)</b>	-0.16 (0.16)	<b>-0.15 (0.02)</b>	<b>-1.48 (0.40)</b>	-0.14 (0.11)	<b>-0.16 (0.03)</b>
	2b	<b>-1.69 (0.43)</b>	-0.21 (0.14)	<b>-0.15 (0.02)</b>	<b>-1.22 (0.33)</b>	-0.17 (0.09)	<b>-0.11 (0.03)</b>
Percent trunk fat (%)	Unadjusted	<b>-1.82 (0.52)</b>	-0.25 (0.17)	<b>-0.15 (0.02)</b>	<b>-0.99 (0.42)</b>	0.10 (0.11)	<b>-0.17 (0.03)</b>
	1	<b>-1.63 (0.49)</b>	-0.15 (0.16)	<b>-0.16 (0.02)</b>	<b>-1.12 (0.43)</b>	0.05 (0.10)	<b>-0.17 (0.03)</b>
	2a	<b>-1.70 (0.52)</b>	-0.15 (0.17)	<b>-0.17 (0.02)</b>	<b>-1.45 (0.46)</b>	-0.01 (0.11)	<b>-0.19 (0.03)</b>
	2b	<b>-1.90 (0.45)</b>	-0.22 (0.15)	<b>-0.17 (0.02)</b>	<b>-1.36 (0.47)</b>	-0.04 (0.11)	<b>-0.16 (0.03)</b>
Fat mass index ( $\text{kg}/\text{m}^2$ )	Unadjusted	<b>-1.57 (0.39)</b>	-0.23 (0.13)	<b>-0.13 (0.02)</b>	<b>-0.99 (0.35)</b>	-0.03 (0.11)	<b>-0.13 (0.03)</b>
	1	<b>-1.47 (0.36)</b>	-0.17 (0.12)	<b>-0.14 (0.02)</b>	<b>-1.29 (0.38)</b>	-0.10 (0.10)	<b>-0.14 (0.03)</b>
	2a	<b>-1.60 (0.40)</b>	-0.18 (0.13)	<b>-0.15 (0.02)</b>	<b>-1.80 (0.44)</b>	-0.21 (0.12)	<b>-0.17 (0.04)</b>
	2b	<b>-1.68 (0.33)</b>	<b>-0.23 (0.11)</b>	<b>-0.14 (0.02)</b>	<b>-1.63 (0.42)</b>	<b>-0.25 (0.11)</b>	<b>-0.13 (0.03)</b>

<sup>a</sup>Values are beta coefficient (SE) per 1 SD of the sex-stratified adiposity measurement. Boldface indicates P<0.05. Model 1 adjusts for age, race/ethnicity, smoking status, and eGFR. Model 2 adjusted for Model 1 covariates and additionally controlled for (a) serum albumin (g/dL) or (b) natural log-transformed C-reactive protein (mg/dL). Men without diabetes: 1 SD = 5.1  $\text{kg}/\text{m}^2$  BMI, 14.0 cm waist circumference, 6.0% body fat, 7.2% trunk fat, 3.1  $\text{kg}/\text{m}^2$  fat mass index. Women without diabetes: 1 SD = 6.5  $\text{kg}/\text{m}^2$  BMI, 14.9 cm waist circumference, 6.4% body fat, 8.2% trunk fat, 4.4  $\text{kg}/\text{m}^2$  fat mass index. Men with diabetes: 1 SD = 6.3  $\text{kg}/\text{m}^2$  BMI, 15.6 cm waist circumference, 5.5% body fat, 6.1% trunk fat, 3.7  $\text{kg}/\text{m}^2$  fat mass index. Women with diabetes: 1 SD = 7.7  $\text{kg}/\text{m}^2$  BMI, 16.3 cm waist circumference, 5.5% body fat, 6.8% trunk fat, 5.0  $\text{kg}/\text{m}^2$  fat mass index.

<sup>b</sup>Beta coefficients for GA:HbA1c, the ratio of GA to HbA1c, represent the divergence of GA from HbA1c associated with each 1 SD increase in adiposity. A negative coefficient indicates that the change in albumin glycation is less than the change in hemoglobin glycation (i.e. GA increases less than HbA1c) as adiposity increases. BMI, body mass index; GA, glycated albumin; HbA1c, hemoglobin A1c; NHANES, National Health and Nutrition Examination Survey; SD, standard deviation; SE, standard error

## Supplemental Data

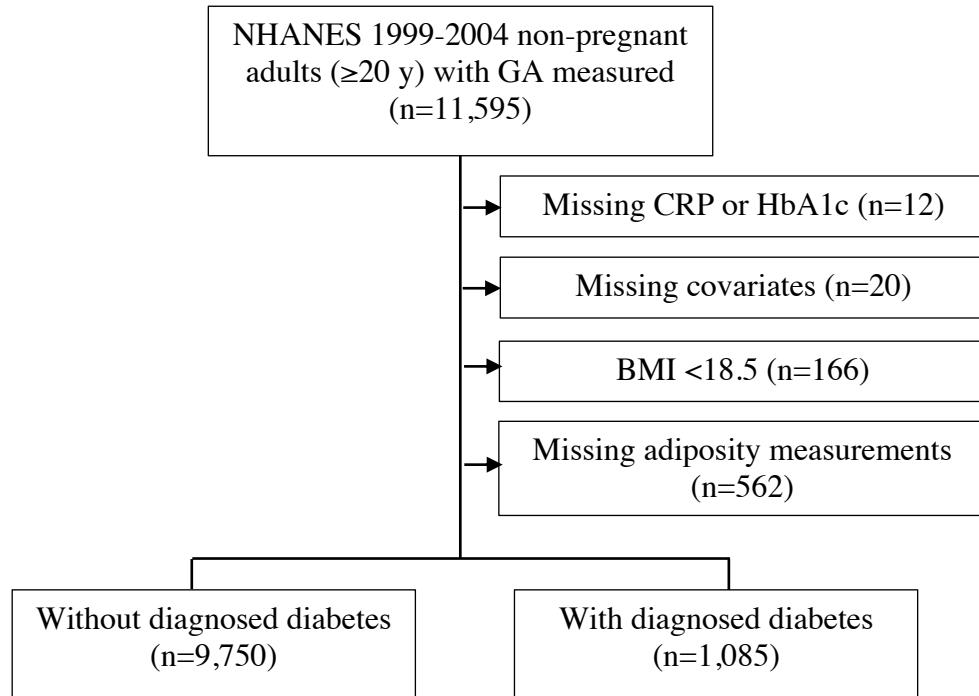
Supplemental Table 4 Sensitivity and specificity of glycated albumin to detect elevated HbA1c in sensitivity analysis excluding conditions that affect albumin or red blood cell turnover among U.S. adults without diagnosed diabetes (n=7,984) and with diagnosed diabetes (n=679), NHANES 1999-2004.

	GA	HbA1c	Subgroup	Sensitivity (95% CI)	Specificity (95% CI)
Without Diabetes	14.2%	$\geq 5.7\%$	BMI $<30 \text{ kg/m}^2$	0.37 (0.32-0.43)	0.81 (0.78-0.85)
		$\geq 5.7\%$	BMI $\geq 30 \text{ kg/m}^2$	0.28 (0.24-0.33)	0.92 (0.89-0.94)
	17.3%	$\geq 6.5\%$	BMI $<30 \text{ kg/m}^2$	0.55 (0.36-0.72)	0.99 (0.98-1.00)
		$\geq 6.5\%$	BMI $\geq 30 \text{ kg/m}^2$	0.46 (0.35-0.58)	0.99 (0.99-1.00)
With Diabetes	17.5%	$\geq 7.0\%$	BMI $<30 \text{ kg/m}^2$	0.93 (0.86-0.96)	0.83 (0.74-0.90)
		$\geq 7.0\%$	BMI $\geq 30 \text{ kg/m}^2$	0.81 (0.69-0.89)	0.89 (0.83-0.94)

Abbreviations: BMI, body mass index; CI, confidence interval; GA, glycated albumin; HbA1c, hemoglobin A1c

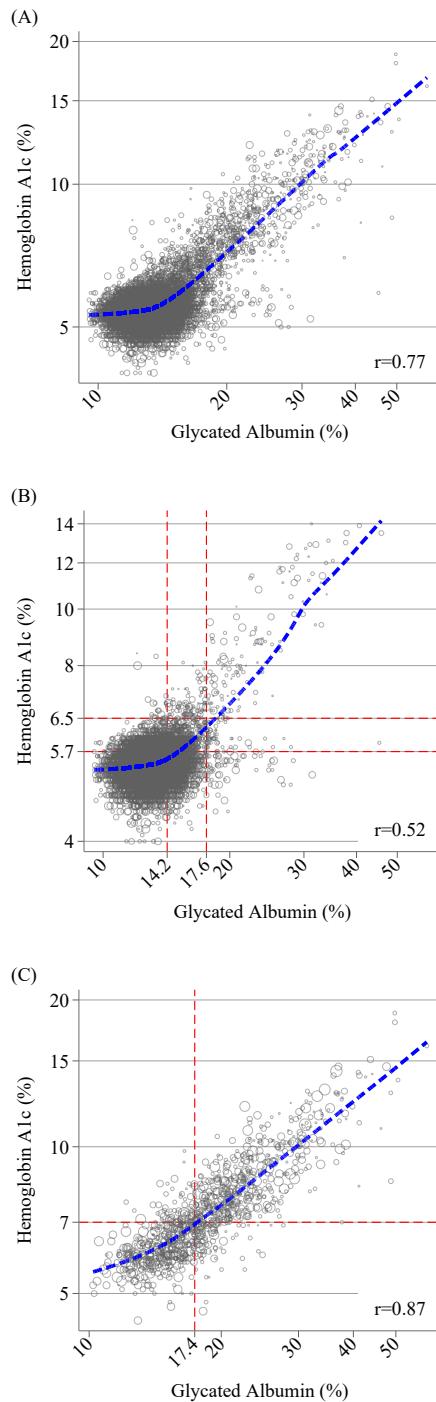
## Supplemental Data

Supplemental Figure 1 Flowchart of exclusion criteria



## Supplemental Data

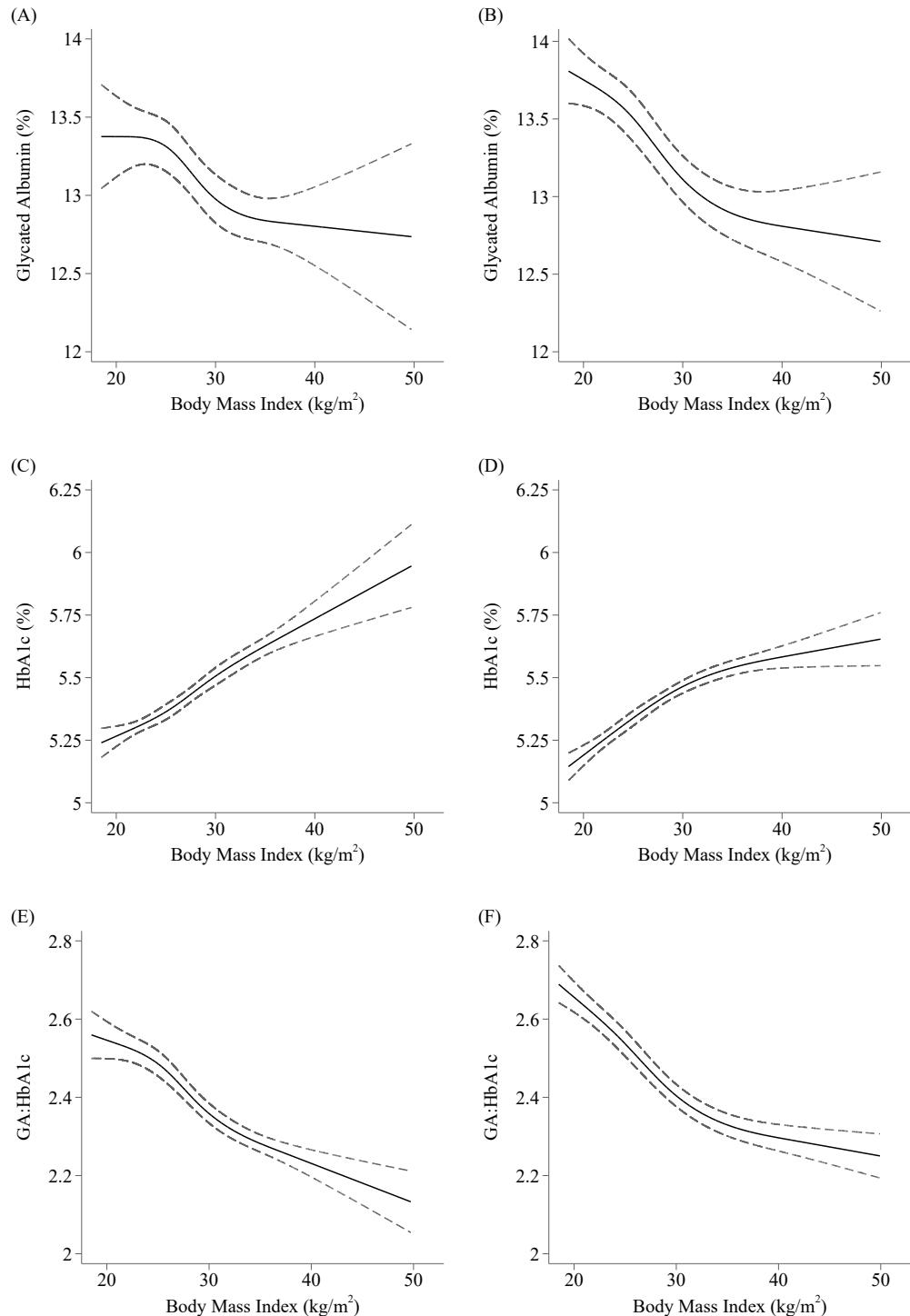
Supplemental Figure 2 Weighted scatterplots (with lowess curves) for HbA1c and glycated albumin in US adults, NHANES 1999-2004.



Scatterplots and Pearson correlation coefficients are presented for overall study population (A) and separately in people without diabetes (B) and with diabetes (C). Glycated albumin values of 14.2% and 17.6% represent percentile equivalents of HbA1c 5.7% and 6.5% in people without diabetes. Glycated albumin 17.4% represents percentile equivalent of HbA1c 7.0% in people with diabetes. Figures are presented on the log scale.

## Supplemental Data

Supplemental Figure 3 Associations of body mass index with GA, HbA1c, and GA:HbA1c in adults without diagnosed diabetes (n=9,750), NHANES 1999-2004.



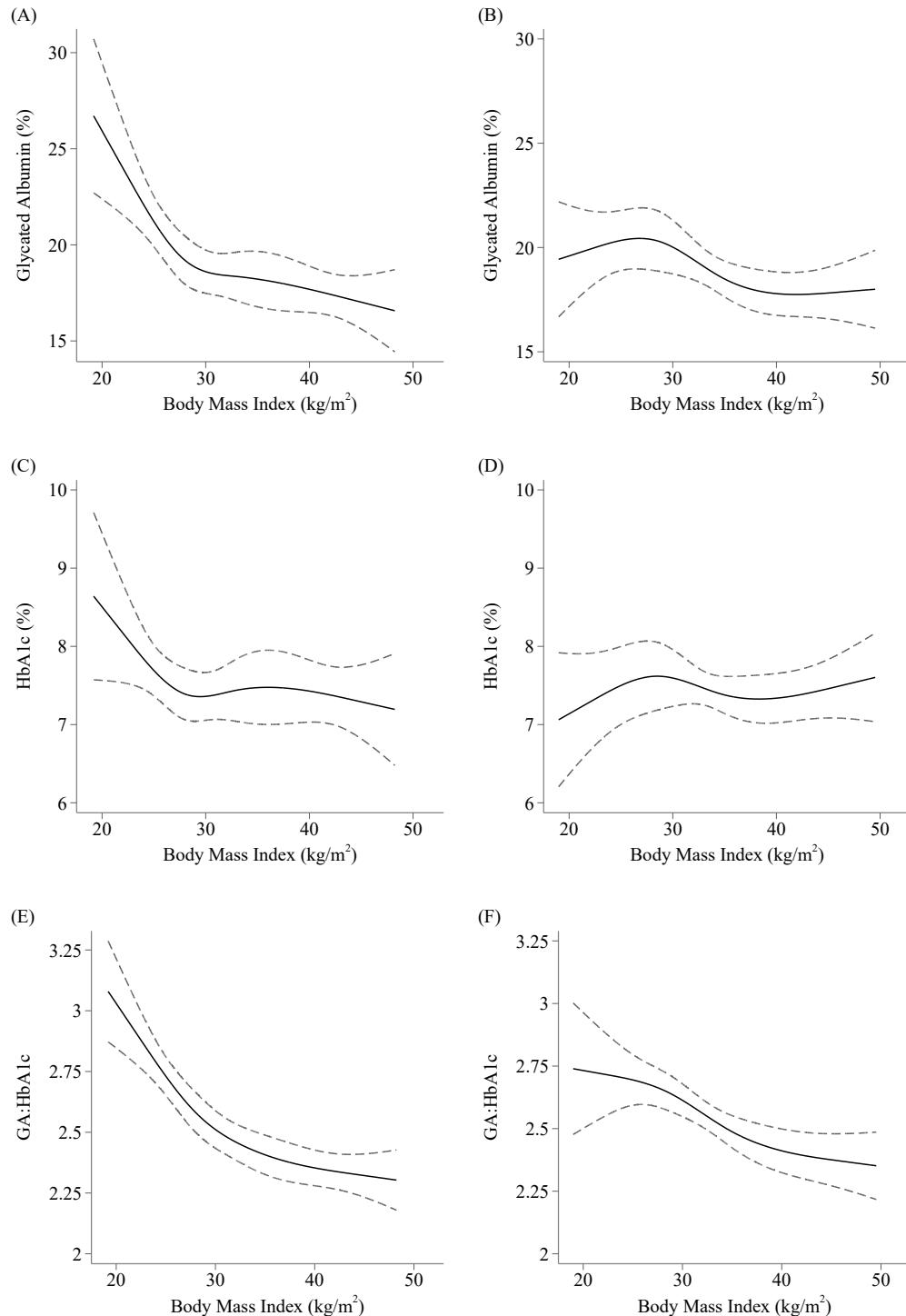
GA vs. body mass index in (A) men and (B) women. HbA1c vs. body mass index in (C) men and (D) women. GA:HbA1c vs. body mass index in (E) men and (F) women. Solid lines represent the predicted values from unadjusted regression models using restricted cubic splines with four

## Supplemental Data

knots at the 5<sup>th</sup>, 35<sup>th</sup>, 65<sup>th</sup>, and 95<sup>th</sup> percentiles; dashed lines represent the corresponding 95% confidence intervals. Figure truncated at BMI 50 kg/m<sup>2</sup>. GA, glycated albumin; HbA1c, hemoglobin A1c; NHANES, National Health and Nutrition Examination Survey

## Supplemental Data

Supplemental Figure 4 Associations of body mass index with GA, HbA1c, and GA:HbA1c in adults with diagnosed diabetes (n=1,085), NHANES 1999-2004.



GA vs. body mass index in (A) men and (B) women. HbA1c vs. body mass index in (C) men and (D) women. GA:HbA1c vs. body mass index in (E) men and (F) women. Solid lines represent the predicted values from unadjusted regression models using restricted cubic splines with four

## Supplemental Data

knots at the 5th, 35th, 65th, and 95th percentiles; dashed lines represent the corresponding 95% confidence intervals. Figure truncated at BMI 50 kg/m<sup>2</sup>. GA, glycated albumin; HbA1c, hemoglobin A1c; NHANES, National Health and Nutrition Examination Survey