

Additional file 1: Table S1

Multivariable logistic regression models developed for studying the association between the 4 parameters of interest and the 8 outcomes

High triglycerides				
	Model 1 WC	Model 2 logVAT	Model 3 SAT	Model 4 logVAT + SAT
WC ⁻¹ (cm)	-448.02*** [-537.04 to -359.00]	—	—	—
Male gender	0.67*** [0.44 to 0.91]	0.61*** [0.36 to 0.85]	1.25*** [1.04 to 1.47]	0.62*** [0.37 to 0.88]
Age/10 (years)	0.15** [0.05 to 0.25]	0.09 [-0.02 to 0.19]	0.30*** [0.21 to 0.39]	0.10 [-0.01 to 0.20]
log _e VAT (cm)	—	1.62*** [1.31 to 1.93]	—	1.59*** [1.27 to 1.92]
SAT (cm)	—	—	0.17*** [0.09 to 0.26]	0.04 [-0.06 to 0.13]
Intercept	2.24*** [1.13 to 3.34]	-4.84*** [-5.40 to -4.28]	-3.72*** [-4.22 to -3.22]	-4.96*** [-5.55 to -4.36]
<i>N</i>	2414	2414	2414	2414

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Wald test)

Values are logistic regression coefficients (logits) and 95% confidence intervals

Low HDL				
	Model 1 WC	Model 2 Logvat	Model 3 SAT	Model 4 logVAT + SAT
WC ⁻¹ (cm)	-446.75*** [-528.57 to -364.94]	—	—	—
Male gender	-0.18 [-0.42 to 0.06]	-0.16 [-0.40 to 0.09]	0.43*** [0.21 to 0.64]	-0.14 [-0.39 to 0.11]
Age/10 (years)	-0.19*** [-0.28 to -0.10]	-0.23*** [-0.32 to -0.13]	-0.03 [-0.11 to 0.06]	-0.22*** [-0.31 to -0.12]
Log _e VAT	—	1.35*** [1.08 to 1.62]	—	1.32*** [1.04 to 1.61]
SAT	—	—	0.17*** [0.09 to 0.25]	0.03 [-0.06 to 0.12]
Intercept	4.07*** [3.05 to 5.09]	-2.67*** [-3.14 to -2.20]	-1.90*** [-2.35 to -1.46]	-2.77*** [-3.28 to -2.25]
<i>N</i>	2414	2414	2414	2414

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Wald test)

Values are logistic regression coefficients (logits) and 95% confidence intervals.

High blood pressure				
	Model 1 WC	Model 2 logVAT	Model 3 SAT	Model 4 logVAT + SAT
WC ⁻¹ (cm)	-606.56*** [-684.87 to -528.26]	—	—	—
Male gender	0.67*** [0.44 to 0.91]	0.83*** [0.59 to 1.06]	1.53*** [1.31 to 1.74]	0.99*** [0.75 to 1.23]
Age (years/10)	0.57*** [0.48 to 0.66]	0.54*** [0.45 to 0.63]	0.78*** [0.69 to 0.86]	0.63*** [0.54 to 0.72]
Log _e VAT (mm)	—	1.52*** [1.29 to 1.74]	—	1.25*** [1.01 to 1.48]
SAT (mm)	—	—	0.47*** [0.39 to 0.55]	0.34*** [0.25 to 0.42]
Intercept	3.96*** [3.00 to 4.92]	-4.80*** [-5.26 to -4.34]	-4.95*** [-5.44 to -4.45]	-5.80*** [-6.34 to -5.27]
<i>N</i>	2414	2414	2414	2414

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Wald test)

Values are logistic regression coefficients (logits) and 95% confidence intervals.

High glucose				
	Model 1 WC	Model 2 logVAT	Model 3 SAT	Model 4 logVAT + SAT
WC ⁻¹ (cm)	-512.16*** [-598.06 to -426.26]	—	—	—
Male gender	0.38** [0.15 to 0.61]	0.40*** [0.16 to 0.64]	1.06*** [0.86 to 1.26]	0.44*** [0.20 to 0.68]
Age (years/10)	0.52*** [0.43 to 0.61]	0.48*** [0.38 to 0.57]	0.67*** [0.58 to 0.76]	0.50*** [0.40 to 0.60]
Log _e VAT (mm)	—	1.58*** [1.30 to 1.85]	—	1.51*** [1.23 to 1.80]
SAT (mm)	—	—	0.22*** [0.14 to 0.30]	0.08 [-0.00 to 0.17]
Intercept	1.92*** [0.90 to 2.93]	-5.85*** [-6.43 to -5.27]	-4.89*** [-5.42 to -4.37]	-6.11*** [-6.75 to -5.47]
<i>N</i>	2414	2414	2414	2414

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Wald test)

Values are logistic regression coefficients (logits) and 95% confidence intervals

Metabolic syndrome			
	Model 2 logVAT	Model 3 SAT	Model 4 logVAT + SAT
WC ⁻¹ (cm)	—	—	—
Male gender	0.17 [-0.07 to 0.41]	1.29*** [1.09 to 1.50]	0.32* [0.07 to 0.56]
Age (years/10)	0.30*** [0.20 to 0.40]	0.65*** [0.56 to 0.74]	0.39*** [0.29 to 0.49]
Log _e VAT (mm)	2.87*** [2.54 to 3.20]	—	2.70*** [2.36 to 3.04]
SAT (mm)	—	0.46*** [0.37 to 0.54]	0.28*** [0.19 to 0.38]
Intercept	-7.14*** [-7.77 to -6.51]	-5.47*** [-5.98 to -4.95]	-8.15*** [-8.83 to -7.47]
<i>N</i>	2414	2414	2414

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Wald test)

Values are logistic regression coefficients (logits) and 95% confidence intervals

High uric acid				
	Model 1 WC	Model 2 logVAT	Model 3 SAT	Model 4 logVAT + SAT
WC ⁻¹ (cm)	-456.80*** [-606.76 to -306.83]	—	—	—
Male gender	1.85*** [1.45 to 2.24]	1.89*** [1.46 to 2.31]	2.40*** [2.05 to 2.75]	1.88*** [1.44 to 2.31]
Age (years/10)	0.17* [0.03 to 0.31]	0.14 [-0.01 to 0.28]	0.30*** [0.16 to 0.43]	0.13 [-0.01 to 0.28]
Log _e VAT (mm)	—	1.32*** [0.83 to 1.82]	—	1.33*** [0.82 to 1.85]
SAT (mm)	—	—	0.07 [-0.05 to 0.19]	-0.02 [-0.15 to 0.11]
Intercept	0.47 [-1.27 to 2.22]	-6.35*** [-7.29 to -5.41]	-5.12*** [-5.88 to -4.35]	-6.29*** [-7.27 to -5.31]
<i>N</i>	2414	2414	2414	2414

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Wald test)

Values are logistic regression coefficients (logits) and 95% confidence intervals

High ALT				
	Model 1 WC	Model 2 logVAT	Model 3 SAT	Model 4 logVAT + SAT
WC ⁻¹ (cm)	-467.96*** [-558.25 to -377.68]	—	—	—
Male gender	1.32*** [1.10 to 1.54]	1.24*** [1.02 to 1.46]	1.91*** [1.70 to 2.11]	1.29*** [1.06 to 1.51]
Age (years/10)	-0.06 [-0.15 to 0.03]	-0.14** [-0.24 to -0.05]	0.12** [0.04 to 0.21]	-0.11* [-0.21 to -0.02]
Log _e VAT	—	1.80*** [1.51 to 2.10]	—	1.73*** [1.43 to 2.03]
SAT	—	—	0.24*** [0.16 to 0.33]	0.10* [0.01 to 0.19]
Intercept	3.44*** [2.34 to 4.54]	-4.06*** [-4.56 to -3.57]	-3.06*** [-3.54 to -2.59]	-4.36*** [-4.93 to -3.79]
<i>N</i>	2414	2414	2414	2414

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Wald test)

Values are logistic regression coefficients (logits) and 95% confidence intervals

High GGT				
	Model 1 WC	Model 2 logVAT	Model 3 SAT	Model 4 logVAT + SAT
WC ⁻¹ (cm)	-516.36*** [-616.94 to -415.79]	—	—	—
Male gender	1.17*** [0.93 to 1.41]	1.09*** [0.85 to 1.34]	1.79*** [1.57 to 2.02]	1.13*** [0.87 to 1.38]
Age (years/10)	-0.12* [-0.22 to -0.02]	-0.21*** [-0.31 to -0.10]	0.07 [-0.02 to 0.16]	-0.18** [-0.29 to -0.07]
logVAT	—	1.90*** [1.57 to 2.24]	—	1.85*** [1.50 to 2.19]
SAT	—	—	0.22*** [0.13 to 0.31]	0.07 [-0.02 to 0.17]
Intercept	3.73*** [2.52 to 4.93]	-4.45*** [-5.01 to -3.88]	-3.21*** [-3.72 to -2.71]	-4.68*** [-5.31 to -4.05]
<i>N</i>	2414	2414	2414	2414

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Wald test)

Values are logistic regression coefficients (logits) and 95% confidence intervals