

Supplementary Table 1 Formulae for Anthropometric Indices

Anthropometric Index	Formula	Note
BMI	$= \frac{\text{Weight(kg)}}{\text{Height(m)}^2}$	
LAP	<p>Males: = [WC (cm) - 65] × TG (mmol/L),</p> <p>Females: = [WC (cm) - 58] × TG (mmol/L).</p>	<p>WC adjustment:</p> <p>Male WC ≤ 65 cm → 66 cm</p> <p>Female WC ≤ 58 cm → 59 cm</p>
VAI	<p>Males: = $\frac{\text{WC(cm)}}{39.68+(1.88 \times \text{BMI})} \times \frac{\text{TG(mmol/L)}}{1.03} \times \frac{1.31}{\text{HDL-C(mmol/L)}}$</p> <p>Females: = $\frac{\text{WC(cm)}}{36.58+(1.89 \times \text{BMI})} \times \frac{\text{TG(mmol/L)}}{0.81} \times \frac{1.52}{\text{HDL-C(mmol/L)}}$</p>	
ABSI	$= \frac{\text{WC(cm)}}{\text{Height(m)}^{1/2} \times \text{BMI}^{2/3}}$	
BAI	$= \frac{\text{HC(cm)}}{\text{Height(m)}^{1.5}} - 18$	
BRI	$= 364.2 - 365.5 \sqrt{1 - \frac{\text{WC(m)}/(2\pi)^2}{[0.5 \times \text{Height(m)}]^2}}$	
RFM	<p>Males: = $64 - 20 \times \frac{\text{Height(cm)}}{\text{WC(cm)}}$</p> <p>Females: = $76 - 20 \times \frac{\text{Height(cm)}}{\text{WC(cm)}}$</p>	

Anthropometric Index	Formula	Note
UHR	$= \frac{UA \text{ (mg/dL)}}{HDL-C \text{ (mg/dL)}} \times 100$	
TyG	$= \text{Ln} \frac{TG \text{ (mg/dl)} \times FPG \text{ (mg/dl)}}{2}$	
CMI	$= \frac{TG \text{ (mmol/L)}}{HDL-C \text{ (mmol/L)}} \times \frac{WC \text{ (cm)}}{\text{Height (cm)}}$	
	Males: = -267.93+0.68×Age(years)+0.03×BMI (kg/m ²) +4× WC (cm)+22×	
CVAI	LgTG (mmol/L)-16.32×HDL-C(mmol/L), Females: = -187.32+1.71×Age(years)+4.32×BMI (kg/m ²) +1.12×WC (cm)+39.76×LgTG(mmol/L)-11.66×HDL-C(mmol/L).	Negative values set to 0 ("extremely low visceral adiposity")

- 2 Notes: Unit conversions used WHO coefficients: TG 1 mmol/L = 88.57 mg/dL, glucose 1 mmol/L = 18 mg/dL.
- 3 Abbreviations: BMI, Body Mass Index; WC, Waist Circumference; FPG, Fasting Plasma Glucose; TG, Triglycerides; HDL-C, High-Density
- 4 Lipoprotein Cholesterol; CVAI, Chinese Visceral Adiposity Index; CMI, Cardiometabolic Index; TyG, Triglyceride-Glucose Index; UA, Uric Acid;
- 5 UHR, Uric Acid to HDL-C Ratio; RFM, Relative Fat Mass; BRI, Body Roundness Index; BAI, Body Adiposity Index; ABSI, A Body Shape Index;
- 6 VAI, Visceral Adiposity Index; LAP, Lipid Accumulation Product; WHO, World Health Organization.

Supplementary Table 2 Paired comparison of AUCs for 12 anthropometric indices in predicting MetS (DeLong test) by sex

Comparison	Male					Female				
	Difference of AUC	Standard error	95% CI	Z	<i>p</i>	Difference of AUC	Standard error	95% CI	Z	<i>p</i>
BMI vs. WC	-0.015	0.253	-0.080 ~ 0.049	-0.473	0.636	0.014	0.225	-0.038 ~ 0.065	0.514	0.607
BMI vs. LAP	-0.114	0.251	-0.181 ~ -0.048	-3.365	0.001	-0.119	0.219	-0.176 ~ -0.062	-4.099	<0.001
BMI vs. VAI	-0.162	0.244	-0.240 ~ -0.083	-4.041	<0.001	-0.157	0.215	-0.225 ~ -0.089	-4.502	<0.001
BMI vs. ABSI	0.060	0.253	-0.038 ~ 0.158	1.197	0.231	0.064	0.226	-0.011 ~ 0.139	1.679	0.093
BMI vs. BAI	0.045	0.252	-0.021 ~ 0.111	1.341	0.180	0.015	0.224	-0.036 ~ 0.066	0.586	0.558
BMI vs. BRI	0.002	0.248	-0.061 ~ 0.064	0.049	0.961	0.012	0.226	-0.040 ~ 0.065	0.453	0.650
BMI vs. RFM	-0.022	0.249	-0.082 ~ 0.038	-0.713	0.476	0.011	0.226	-0.041 ~ 0.062	0.412	0.680
BMI vs. UHR	0.030	0.255	-0.056 ~ 0.116	0.676	0.499	0.021	0.225	-0.053 ~ 0.096	0.562	0.574
BMI vs. TyG	-0.215	0.238	-0.289 ~ -0.141	-5.704	<0.001	-0.195	0.212	-0.260 ~ -0.130	-5.859	<0.001

Comparison	Male					Female				
	Difference	Standard	95% CI	Z	p	Difference	Standard	95% CI	Z	p
	of AUC	error				of AUC	error			
BMI vs. CMI	-0.166	0.243	-0.241 ~ -0.091	-4.335	<0.001	-0.166	0.214	-0.231 ~ -0.102	-5.061	<0.001
BMI vs. CVAI	-0.065	0.250	-0.133 ~ 0.003	-1.881	0.060	-0.129	0.217	-0.174 ~ -0.084	-5.637	<0.001
WC vs. LAP	-0.099	0.245	-0.128 ~ -0.070	-6.687	<0.001	-0.133	0.219	-0.167 ~ -0.098	-7.504	<0.001
WC vs. VAI	-0.146	0.239	-0.214 ~ -0.078	-4.198	<0.001	-0.171	0.216	-0.236 ~ -0.105	-5.131	<0.001
WC vs. ABSI	0.075	0.246	0.023 ~ 0.128	2.811	0.005	0.051	0.224	0.014 ~ 0.087	2.742	0.006
WC vs. BAI	0.060	0.249	-0.020 ~ 0.140	1.482	0.138	0.002	0.225	-0.043 ~ 0.046	0.077	0.938
WC vs. BRI	0.017	0.244	-0.036 ~ 0.070	0.632	0.528	-0.001	0.226	-0.034 ~ 0.031	-0.085	0.933
WC vs. RFM	-0.006	0.244	-0.036 ~ 0.023	-0.416	0.678	-0.003	0.226	-0.021 ~ 0.015	-0.292	0.770
WC vs. UHR	0.045	0.251	-0.040 ~ 0.130	1.041	0.298	0.008	0.226	-0.065 ~ 0.081	0.210	0.834
WC vs. TyG	-0.200	0.234	-0.270 ~ -0.129	-5.554	<0.001	-0.208	0.213	-0.276 ~ -0.141	-6.049	<0.001

Comparison	Male					Female				
	Difference	Standard	95% CI	Z	p	Difference	Standard	95% CI	Z	p
	of AUC	error				of AUC	error			
WC vs. CMI	-0.150	0.239	-0.218 ~ -0.083	-4.364	<0.001	-0.180	0.215	-0.243 ~ -0.117	-5.571	<0.001
WC vs. CVAI	-0.050	0.244	-0.070 ~ -0.029	-4.680	<0.001	-0.143	0.219	-0.192 ~ -0.093	-5.681	<0.001
LAP vs. VAI	-0.047	0.236	-0.099 ~ 0.005	-1.789	0.074	-0.038	0.209	-0.080 ~ 0.004	-1.757	0.079
LAP vs. ABSI	0.174	0.244	0.117 ~ 0.232	5.951	<0.001	0.183	0.219	0.139 ~ 0.227	8.197	<0.001
LAP vs. BAI	0.159	0.247	0.078 ~ 0.241	3.829	<0.001	0.134	0.219	0.083 ~ 0.185	5.168	<0.001
LAP vs. BRI	0.116	0.242	0.057 ~ 0.175	3.873	<0.001	0.131	0.221	0.088 ~ 0.175	5.931	<0.001
LAP vs. RFM	0.093	0.242	0.050 ~ 0.135	4.288	<0.001	0.130	0.220	0.092 ~ 0.167	6.802	<0.001
LAP vs. UHR	0.144	0.249	0.063 ~ 0.226	3.467	0.001	0.140	0.219	0.077 ~ 0.203	4.367	<0.001
LAP vs. TyG	-0.101	0.231	-0.155 ~ -0.047	-3.657	<0.001	-0.076	0.205	-0.121 ~ -0.031	-3.300	0.001
LAP vs. CMI	-0.052	0.235	-0.103 ~ 0.000	-1.976	0.048	-0.047	0.208	-0.088 ~ -0.007	-2.280	0.023

Comparison	Male					Female				
	Difference	Standard	95% CI	Z	p	Difference	Standard	95% CI	Z	p
	of AUC	error				of AUC	error			
LAP vs. CVAI	0.049	0.242	0.020 ~ 0.079	3.276	0.001	-0.010	0.212	-0.059 ~ 0.039	-0.401	0.689
VAI vs. ABSI	0.221	0.237	0.150 ~ 0.293	6.096	<0.001	0.221	0.215	0.158 ~ 0.284	6.891	<0.001
VAI vs. BAI	0.207	0.239	0.126 ~ 0.287	5.054	<0.001	0.172	0.216	0.105 ~ 0.239	5.039	<0.001
VAI vs. BRI	0.163	0.235	0.090 ~ 0.237	4.343	<0.001	0.169	0.218	0.102 ~ 0.236	4.946	<0.001
VAI vs. RFM	0.140	0.236	0.069 ~ 0.211	3.872	<0.001	0.168	0.218	0.102 ~ 0.234	4.964	<0.001
VAI vs. UHR	0.191	0.240	0.130 ~ 0.253	6.073	<0.001	0.178	0.214	0.129 ~ 0.228	7.090	<0.001
VAI vs. TyG	-0.054	0.221	-0.079 ~ -0.028	-4.101	<0.001	-0.038	0.200	-0.061 ~ -0.014	-3.165	0.002
VAI vs. CMI	-0.004	0.226	-0.010 ~ 0.001	-1.490	0.136	-0.009	0.202	-0.016 ~ -0.003	-2.785	0.005
VAI vs. CVAI	0.097	0.236	0.034 ~ 0.159	3.033	0.002	0.028	0.209	-0.031 ~ 0.087	0.932	0.351
ABSI vs. BAI	-0.015	0.247	-0.099 ~ 0.070	-0.345	0.730	-0.049	0.225	-0.102 ~ 0.005	-1.783	0.075

Comparison	Male					Female				
	Difference	Standard	95% CI	Z	p	Difference	Standard	95% CI	Z	p
	of AUC	error				of AUC	error			
ABSI vs. BRI	-0.058	0.242	-0.121 ~ 0.004	-1.832	0.067	-0.052	0.226	-0.094 ~ -0.010	-2.417	0.016
ABSI vs. RFM	-0.082	0.242	-0.135 ~ -0.028	-3.009	0.003	-0.053	0.225	-0.090 ~ -0.016	-2.830	0.005
ABSI vs. UHR	-0.030	0.249	-0.115 ~ 0.055	-0.695	0.487	-0.043	0.225	-0.114 ~ 0.029	-1.171	0.241
ABSI vs. TyG	-0.275	0.232	-0.350 ~ -0.201	-7.247	<0.001	-0.259	0.212	-0.325 ~ -0.193	-7.671	<0.001
ABSI vs. CMI	-0.226	0.236	-0.298 ~ -0.153	-6.113	<0.001	-0.230	0.215	-0.293 ~ -0.168	-7.185	<0.001
ABSI vs. CVAI	-0.125	0.242	-0.173 ~ -0.076	-5.052	<0.001	-0.193	0.219	-0.252 ~ -0.134	-6.364	<0.001
BAI vs. BRI	-0.043	0.242	-0.086 ~ -0.001	-2.008	0.045	-0.003	0.226	-0.033 ~ 0.026	-0.209	0.835
BAI vs. RFM	-0.067	0.244	-0.127 ~ -0.007	-2.181	0.029	-0.004	0.226	-0.039 ~ 0.030	-0.253	0.800
BAI vs. UHR	-0.015	0.250	-0.098 ~ 0.068	-0.360	0.718	0.006	0.226	-0.068 ~ 0.080	0.160	0.873
BAI vs. TyG	-0.260	0.234	-0.338 ~ -0.183	-6.567	<0.001	-0.210	0.213	-0.276 ~ -0.144	-6.265	<0.001

Comparison	Male					Female				
	Difference	Standard	95% CI	Z	p	Difference	Standard	95% CI	Z	p
	of AUC	error				of AUC	error			
BAI vs. CMI	-0.211	0.238	-0.288 ~ -0.134	-5.370	<0.001	-0.182	0.215	-0.245 ~ -0.118	-5.577	<0.001
BAI vs. CVAI	-0.110	0.246	-0.187 ~ -0.033	-2.805	0.005	-0.144	0.219	-0.197 ~ -0.092	-5.403	<0.001
BRI vs. RFM	-0.023	0.239	-0.049 ~ 0.003	-1.770	0.077	-0.001	0.227	-0.016 ~ 0.014	-0.170	0.865
BRI vs. UHR	0.028	0.247	-0.053 ~ 0.109	0.680	0.496	0.009	0.227	-0.066 ~ 0.084	0.240	0.811
BRI vs. TyG	-0.217	0.230	-0.291 ~ -0.142	-5.710	<0.001	-0.207	0.215	-0.274 ~ -0.140	-6.021	<0.001
BRI vs. CMI	-0.168	0.235	-0.239 ~ -0.096	-4.621	<0.001	-0.179	0.217	-0.242 ~ -0.115	-5.472	<0.001
BRI vs. CVAI	-0.067	0.241	-0.117 ~ -0.016	-2.590	0.010	-0.141	0.220	-0.189 ~ -0.093	-5.775	<0.001
RFM vs. UHR	0.052	0.248	-0.030 ~ 0.133	1.237	0.216	0.011	0.227	-0.064 ~ 0.085	0.277	0.782
RFM vs. TyG	-0.194	0.230	-0.266 ~ -0.121	-5.213	<0.001	-0.206	0.214	-0.273 ~ -0.138	-5.953	<0.001
RFM vs. CMI	-0.144	0.235	-0.213 ~ -0.075	-4.098	<0.001	-0.177	0.217	-0.241 ~ -0.114	-5.455	<0.001

Comparison	Male					Female				
	Difference	Standard	95% CI	Z	p	Difference	Standard	95% CI	Z	p
	of AUC	error				of AUC	error			
RFM vs. CVAI	-0.043	0.240	-0.074 ~ -0.013	-2.767	0.006	-0.140	0.220	-0.188 ~ -0.092	-5.735	<0.001
UHR vs. TyG	-0.245	0.235	-0.313 ~ -0.177	-7.056	<0.001	-0.216	0.211	-0.272 ~ -0.161	-7.634	<0.001
UHR vs. CMI	-0.196	0.239	-0.257 ~ -0.134	-6.255	<0.001	-0.188	0.213	-0.237 ~ -0.138	-7.429	<0.001
UHR vs. CVAI	-0.095	0.248	-0.174 ~ -0.016	-2.351	0.019	-0.150	0.218	-0.217 ~ -0.084	-4.445	<0.001
TyG vs. CMI	0.049	0.220	0.024 ~ 0.074	3.862	<0.001	0.029	0.199	0.005 ~ 0.052	2.396	0.017
TyG vs. CVAI	0.150	0.230	0.084 ~ 0.217	4.416	<0.001	0.066	0.205	0.008 ~ 0.123	2.246	0.025
CMI vs. CVAI	0.101	0.235	0.039 ~ 0.163	3.212	0.001	0.037	0.208	-0.019 ~ 0.094	1.306	0.192

8 Abbreviations: AUC, area under the curve; MetS, metabolic syndrome; CI, confidence interval; BMI, Body Mass Index; WC, Waist

9 Circumference; CVAI, Chinese Visceral Adiposity Index; CMI, Cardiometabolic Index; TyG, Triglyceride-Glucose Index; UHR, Uric Acid to HDL-C

10 Ratio; RFM, Relative Fat Mass; BRI, Body Roundness Index; BAI, Body Adiposity Index; ABSI, A Body Shape Index; VAI, Visceral Adiposity

11 Index; LAP, Lipid Accumulation Product.

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13 Supplementary Table 3 Odds ratios (95% confidence intervals) for anthropometric indices and MetS by sex.

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
BMI	Male	1.226(1.123~1.339)	<0.001	1.224(1.121~1.337)	<0.001	1.230(1.124~1.346)	<0.001
	Female	1.137(1.071~1.208)	<0.001	1.125(1.058~1.195)	<0.001	1.126(1.059~1.198)	<0.001
WC	Male	1.069(1.039~1.100)	<0.001	1.065(1.035~1.096)	<0.001	1.063(1.033~1.095)	<0.001
	Female	1.043(1.022~1.064)	<0.001	1.040(1.020~1.061)	<0.001	1.038(1.017~1.060)	<0.001
LAP	Male	1.038(1.027~1.049)	<0.001	1.037(1.027~1.048)	<0.001	1.037(1.026~1.048)	<0.001
	Female	1.032(1.023~1.041)	<0.001	1.034(1.025~1.043)	<0.001	1.033(1.024~1.042)	<0.001
VAI	Male	1.567(1.407~1.745)	<0.001	1.585(1.421~1.769)	<0.001	1.578(1.413~1.761)	<0.001
	Female	1.283(1.202~1.369)	<0.001	1.312(1.225~1.404)	<0.001	1.308(1.222~1.400)	<0.001

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
ABSI	Male	1.279(0.930~1.760)	0.131	1.168(0.839~1.627)	0.357	1.155(0.828~1.613)	0.396
	Female	1.141(0.912~1.428)	0.249	1.109(0.887~1.387)	0.364	1.085(0.865~1.360)	0.481
BAI	Male	1.078(0.985~1.180)	0.101	1.055(0.962~1.158)	0.256	1.067(0.971~1.172)	0.180
	Female	1.098(1.041~1.157)	0.001	1.090(1.033~1.150)	0.002	1.098(1.040~1.160)	0.001
BRI	Male	1.718(1.257~2.349)	0.001	1.592(1.148~2.206)	0.005	1.619(1.165~2.250)	0.004
	Female	1.528(1.225~1.906)	<0.001	1.414(1.128~1.773)	0.003	1.439(1.144~1.809)	0.002
RFM	Male	1.118(1.062~1.176)	<0.001	1.107(1.051~1.167)	<0.001	1.107(1.051~1.167)	<0.001
	Female	1.066(1.029~1.104)	<0.001	1.056(1.019~1.095)	0.003	1.055(1.018~1.094)	0.004
UHR	Male	1.052(1.017~1.089)	0.003	1.055(1.020~1.092)	0.002	1.056(1.020~1.093)	0.002
	Female	1.050(1.015~1.087)	0.005	1.053(1.017~1.091)	0.004	1.059(1.022~1.098)	0.002
TyG	Male	9.098(5.842~14.168)	<0.001	9.656(6.144~15.177)	<0.001	9.634(6.090~15.241)	<0.001

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
	Female	5.914(4.220~8.288)	<0.001	6.788(4.741~9.717)	<0.001	6.760(4.710~9.704)	<0.001
CMI	Male	3.149(2.398~4.135)	<0.001	3.221(2.445~4.243)	<0.001	3.189(2.418~4.207)	<0.001
	Female	2.619(2.055~3.339)	<0.001	2.820(2.189~3.633)	<0.001	2.802(2.172~3.615)	<0.001
CVAI	Male	1.021(1.014~1.027)	<0.001	1.021(1.013~1.028)	<0.001	1.020(1.013~1.028)	<0.001
	Female	1.025(1.019~1.031)	<0.001	1.040(1.030~1.050)	<0.001	1.040(1.030~1.050)	<0.001

14 Model 1: unadjusted.

15 Model 2: adjusted for age.

16 Model 3: adjusted for age, smoking, alcohol consumption and physical activity.

17 Abbreviations: BMI, Body Mass Index; WC, Waist Circumference; CVAI, Chinese Visceral Adiposity Index; CMI, Cardiometabolic Index; TyG,

18 Triglyceride-Glucose Index; UHR, Uric Acid to HDL-C Ratio; RFM, Relative Fat Mass; BRI, Body Roundness Index; BAI, Body Adiposity Index;

19 ABSI, A Body Shape Index; VAI, Visceral Adiposity Index; LAP, Lipid Accumulation Product.

Supplementary Table 4 Odds ratios (95% confidence intervals) for anthropometric indices and elevated FPG by sex.

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
BMI	Male	1.013(0.937~1.095)	0.743	1.012(0.936~1.094)	0.764	1.012(0.936~1.095)	0.766
	Female	1.075(1.016~1.137)	0.012	1.064(1.005~1.126)	0.034	1.062(1.002~1.124)	0.042
WC	Male	1.024(0.999~1.049)	0.056	1.017(0.993~1.043)	0.169	1.017(0.993~1.043)	0.172
	Female	1.009(0.991~1.028)	0.328	1.006(0.988~1.025)	0.523	1.004(0.985~1.023)	0.676
LAP	Male	1.008(1.000~1.016)	0.039	1.007(0.999~1.016)	0.067	1.007(0.999~1.015)	0.077
	Female	1.007(1.000~1.013)	0.051	1.007(1.000~1.014)	0.048	1.006(0.999~1.013)	0.086
VAI	Male	1.067(0.981~1.160)	0.129	1.071(0.984~1.166)	0.113	1.069(0.982~1.164)	0.123
	Female	1.042(0.989~1.099)	0.122	1.050(0.995~1.108)	0.075	1.047(0.991~1.105)	0.099
ABSI	Male	1.231(0.939~1.613)	0.133	1.108(0.837~1.468)	0.473	1.107(0.836~1.467)	0.477
	Female	0.904(0.735~1.110)	0.335	0.877(0.712~1.080)	0.218	0.864(0.700~1.067)	0.174

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
BAI	Male	0.979(0.901~1.064)	0.618	0.949(0.869~1.035)	0.237	0.949(0.869~1.036)	0.241
	Female	1.033(0.983~1.086)	0.198	1.024(0.974~1.077)	0.348	1.026(0.975~1.080)	0.323
BRI	Male	1.057(0.806~1.386)	0.689	0.918(0.688~1.224)	0.559	0.919(0.689~1.226)	0.565
	Female	1.097(0.896~1.344)	0.370	1.011(0.820~1.246)	0.920	1.015(0.823~1.253)	0.886
RFM	Male	1.025(0.984~1.067)	0.241	1.007(0.966~1.051)	0.734	1.008(0.966~1.051)	0.727
	Female	1.015(0.983~1.047)	0.367	1.005(0.973~1.038)	0.751	1.004(0.972~1.037)	0.810
UHR	Male	1.002(0.972~1.033)	0.896	1.005(0.974~1.036)	0.754	1.005(0.975~1.037)	0.746
	Female	1.025(0.992~1.059)	0.143	1.026(0.993~1.060)	0.126	1.028(0.994~1.063)	0.106
CMI	Male	1.173(0.956~1.440)	0.127	1.178(0.957~1.449)	0.122	1.173(0.953~1.445)	0.131
	Female	1.178(0.972~1.430)	0.096	1.201(0.987~1.461)	0.068	1.189(0.976~1.448)	0.086
CVAI	Male	1.008(1.002~1.014)	0.005	1.005(0.999~1.011)	0.106	1.005(0.999~1.011)	0.113

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
	Female	1.012(1.007~1.017)	<0.001	1.010(1.002~1.018)	0.010	1.009(1.002~1.017)	0.017

21 Model 1: unadjusted.

22 Model 2: adjusted for age.

23 Model 3: adjusted for age, smoking, alcohol consumption and physical activity..

24 Abbreviations: BMI, Body Mass Index; WC, Waist Circumference; CVAI, Chinese Visceral Adiposity Index; CMI, Cardiometabolic Index; TyG,

25 Triglyceride-Glucose Index; UHR, Uric Acid to HDL-C Ratio; RFM, Relative Fat Mass; BRI, Body Roundness Index; BAI, Body Adiposity Index;

26 ABSI, A Body Shape Index; VAI, Visceral Adiposity Index; LAP, Lipid Accumulation Product.

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Supplementary Table 5 Odds ratios (95% confidence intervals) for anthropometric indices and elevated BP by sex.

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
BMI	Male	1.170(1.079~1.268)	<0.001	1.173(1.080~1.274)	<0.001	1.175(1.081~1.278)	<0.001
	Female	1.090(1.022~1.163)	0.009	1.070(1.000~1.144)	0.049	1.074(1.003~1.150)	0.040
WC	Male	1.057(1.030~1.085)	<0.001	1.048(1.021~1.077)	<0.001	1.047(1.019~1.075)	0.001
	Female	1.062(1.039~1.086)	<0.001	1.060(1.036~1.084)	<0.001	1.058(1.034~1.083)	<0.001
LAP	Male	1.020(1.012~1.029)	<0.001	1.019(1.011~1.028)	<0.001	1.019(1.010~1.028)	<0.001
	Female	1.010(1.002~1.017)	0.010	1.011(1.003~1.018)	0.006	1.009(1.002~1.017)	0.018
VAI	Male	1.136(1.042~1.238)	0.004	1.150(1.052~1.256)	0.002	1.141(1.044~1.247)	0.004
	Female	0.956(0.891~1.025)	0.203	0.964(0.897~1.036)	0.324	0.960(0.892~1.033)	0.272
ABSI	Male	1.383(1.035~1.848)	0.029	1.162(0.857~1.575)	0.334	1.146(0.842~1.559)	0.386
	Female	1.752(1.342~2.289)	<0.001	1.675(1.287~2.181)	<0.001	1.636(1.253~2.137)	<0.001

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
BAI	Male	1.122(1.034~1.217)	0.006	1.080(0.992~1.176)	0.076	1.092(1.002~1.191)	0.045
	Female	1.134(1.071~1.201)	<0.001	1.128(1.062~1.197)	<0.001	1.142(1.074~1.214)	<0.001
BRI	Male	1.945(1.455~2.599)	<0.001	1.645(1.215~2.227)	0.001	1.666(1.228~2.261)	0.001
	Female	1.944(1.516~2.491)	<0.001	1.740(1.346~2.250)	<0.001	1.804(1.388~2.344)	<0.001
RFM	Male	1.118(1.067~1.170)	<0.001	1.093(1.042~1.146)	<0.001	1.092(1.041~1.145)	<0.001
	Female	1.113(1.069~1.160)	<0.001	1.101(1.056~1.148)	<0.001	1.102(1.056~1.150)	<0.001
UHR	Male	0.993(0.960~1.027)	0.677	0.997(0.964~1.032)	0.880	0.998(0.965~1.033)	0.929
	Female	0.940(0.899~0.982)	0.006	0.936(0.894~0.981)	0.005	0.941(0.897~0.987)	0.012
TyG	Male	1.598(1.178~2.169)	0.003	1.667(1.217~2.283)	0.001	1.607(1.171~2.208)	0.003
	Female	0.888(0.658~1.197)	0.435	0.879(0.641~1.204)	0.421	0.832(0.602~1.151)	0.266
CMI	Male	1.421(1.149~1.757)	0.001	1.456(1.169~1.814)	0.001	1.433(1.151~1.784)	0.001

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
	Female	0.890(0.695~1.141)	0.359	0.909(0.703~1.175)	0.466	0.899(0.692~1.167)	0.424
CVAI	Male	1.016(1.010~1.022)	<0.001	1.012(1.006~1.019)	<0.001	1.012(1.005~1.018)	<0.001
	Female	1.021(1.015~1.027)	<0.001	1.013(1.004~1.023)	0.004	1.013(1.004~1.022)	0.007

32 Model 1: unadjusted.

33 Model 2: adjusted for age.

34 Model 3: adjusted for age, smoking, alcohol consumption and physical activity.

35 Abbreviations: BMI, Body Mass Index; WC, Waist Circumference; CVAI, Chinese Visceral Adiposity Index; CMI, Cardiometabolic Index; TyG,

36 Triglyceride-Glucose Index; UHR, Uric Acid to HDL-C Ratio; RFM, Relative Fat Mass; BRI, Body Roundness Index; BAI, Body Adiposity Index;

37 ABSI, A Body Shape Index; VAI, Visceral Adiposity Index; LAP, Lipid Accumulation Product.

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Supplementary Table 6 Odds ratios (95% confidence intervals) for anthropometric indices and elevated TG by sex.

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
BMI	Male	1.182(1.096~1.275)	<0.001	1.185(1.098~1.279)	<0.001	1.187(1.099~1.283)	<0.001
	Female	1.026(0.970~1.085)	0.363	1.032(0.976~1.092)	0.268	1.033(0.975~1.093)	0.270
WC	Male	1.054(1.030~1.079)	<0.001	1.062(1.036~1.088)	<0.001	1.060(1.034~1.087)	<0.001
	Female	0.994(0.976~1.012)	0.513	0.995(0.977~1.014)	0.619	0.994(0.975~1.012)	0.496
ABSI	Male	1.168(0.907~1.506)	0.229	1.274(0.977~1.662)	0.073	1.261(0.967~1.645)	0.087
	Female	0.864(0.703~1.061)	0.163	0.873(0.709~1.074)	0.198	0.860(0.698~1.059)	0.156
BAI	Male	1.080(1.002~1.164)	0.046	1.103(1.021~1.192)	0.013	1.118(1.032~1.210)	0.006
	Female	0.981(0.933~1.032)	0.457	0.985(0.937~1.036)	0.558	0.988(0.939~1.039)	0.634
BRI	Male	1.422(1.102~1.836)	0.007	1.615(1.230~2.121)	0.001	1.644(1.248~2.166)	<0.001
	Female	0.950(0.775~1.164)	0.621	0.984(0.800~1.211)	0.883	0.996(0.808~1.226)	0.967

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
RFM	Male	1.072(1.031~1.114)	0.001	1.091(1.047~1.137)	<0.001	1.091(1.047~1.137)	<0.001
	Female	0.990(0.959~1.022)	0.528	0.994(0.963~1.026)	0.710	0.994(0.962~1.026)	0.694
UHR	Male	1.045(1.015~1.076)	0.003	1.044(1.013~1.075)	0.004	1.046(1.015~1.077)	0.003
	Female	1.072(1.036~1.109)	<0.001	1.072(1.036~1.109)	<0.001	1.075(1.039~1.113)	<0.001

41 Model 1: unadjusted.

42 Model 2: adjusted for age.

43 Model 3: adjusted for age, smoking, alcohol consumption and physical activity.

44 Abbreviations: BMI, Body Mass Index; WC, Waist Circumference; CVAI, Chinese Visceral Adiposity Index; CMI, Cardiometabolic Index; TyG,

45 Triglyceride-Glucose Index; UHR, Uric Acid to HDL-C Ratio; RFM, Relative Fat Mass; BRI, Body Roundness Index; BAI, Body Adiposity Index;

46 ABSI, A Body Shape Index; VAI, Visceral Adiposity Index; LAP, Lipid Accumulation Product.

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Supplementary Table 7 Odds ratios (95% confidence intervals) for anthropometric indices and reduced HDL-C by sex.

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
BMI	Male	1.031(0.895~1.188)	0.669	1.031(0.895~1.189)	0.672	1.037(0.895~1.201)	0.630
	Female	0.951(0.852~1.061)	0.365	0.942(0.843~1.053)	0.294	0.943(0.844~1.053)	0.297
WC	Male	0.989(0.949~1.031)	0.615	0.987(0.947~1.030)	0.551	0.994(0.952~1.038)	0.785
	Female	1.010(0.972~1.051)	0.600	1.008(0.969~1.049)	0.683	1.012(0.973~1.053)	0.543
LAP	Male	0.984(0.974~0.994)	0.002	0.984(0.974~0.994)	0.002	0.984(0.973~0.995)	0.003
	Female	0.991(0.981~1.002)	0.124	0.991(0.980~1.002)	0.119	0.993(0.982~1.004)	0.204
VAI	Male	0.946(0.825~1.086)	0.432	0.947(0.825~1.086)	0.434	0.967(0.837~1.117)	0.647
	Female	1.389(1.110~1.738)	0.004	1.391(1.113~1.737)	0.004	1.422(1.128~1.792)	0.003
ABSI	Male	0.868(0.546~1.380)	0.550	0.836(0.519~1.346)	0.460	0.865(0.517~1.445)	0.579
	Female	1.413(0.934~2.138)	0.102	1.409(0.922~2.153)	0.113	1.454(0.953~2.218)	0.083

Variables	Gender	Model 1		Model 2		Model 3	
		OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>	OR (95%CI)	<i>p</i>
BAI	Male	1.120(0.943~1.332)	0.197	1.117(0.937~1.331)	0.218	1.099(0.915~1.320)	0.313
	Female	1.041(0.933~1.160)	0.473	1.035(0.928~1.154)	0.542	1.027(0.921~1.144)	0.632
BRI	Male	1.148(0.705~1.870)	0.579	1.122(0.675~1.865)	0.658	1.117(0.661~1.887)	0.680
	Female	1.467(0.938~2.295)	0.093	1.412(0.895~2.226)	0.138	1.375(0.870~2.172)	0.172
RFM	Male	0.994(0.926~1.066)	0.867	0.989(0.920~1.064)	0.766	0.995(0.924~1.071)	0.885
	Female	1.043(0.978~1.113)	0.200	1.038(0.972~1.109)	0.266	1.039(0.972~1.110)	0.257
TyG	Male	0.116(0.065~0.208)	<0.001	0.115(0.064~0.207)	<0.001	0.123(0.067~0.225)	<0.001
	Female	0.284(0.169~0.479)	<0.001	0.286(0.169~0.482)	<0.001	0.270(0.156~0.468)	<0.001

49 Model 1: unadjusted.

50 Model 2: adjusted for age.

51 Model 3: adjusted for age, smoking, alcohol consumption and physical activity.

- 52 Abbreviations: BMI, Body Mass Index; WC, Waist Circumference; CVAI, Chinese Visceral Adiposity Index; CMI, Cardiometabolic Index; TyG,
- 53 Triglyceride-Glucose Index; UHR, Uric Acid to HDL-C Ratio; RFM, Relative Fat Mass; BRI, Body Roundness Index; BAI, Body Adiposity Index;
- 54 ABSI, A Body Shape Index; VAI, Visceral Adiposity Index; LAP, Lipid Accumulation Product.