

Table S1. Comparison of anthropometric, body composition, clinical and biochemical characteristics stratified by sex and MetS diagnosis.

Variable	Men n = 763			Women n = 141		
	Non-MetS n = 353	MetS n = 410	<i>p</i>	Non-MetS n = 88	MetS n = 53	<i>p</i>
Age (years)	32.0 ± 7.8	34.7 ± 8.3	< 0.001	31.8 ± 7.0	36.2 ± 7.4	0.001
BMI (kg/m ²)	25.9 ± 3.2	29.8 ± 3.5	< 0.001	25.4 ± 4.0	30.8 ± 4.6	< 0.001
WHtR	0.5 ± 0.1	0.6 ± 0.1	< 0.001	0.5 ± 0.1	0.6 ± 0.1	< 0.001
WC (cm)	89.8 ± 8.1	100.5 ± 8.9	< 0.001	87.0 ± 10.7	97.0 ± 8.8	< 0.001
VFA (cm ²)	86.9 ± 30.3	120.1 ± 29.7	< 0.001	98.4 ± 34.2	135.1 ± 33.0	< 0.001
Total body fat (kg)	17.9 ± 6.6	25.9 ± 7.4	< 0.001	21.5 ± 8.1	30.5 ± 8.4	< 0.001
Body fat percentage (%)	23.4 ± 6.4	29.5 ± 5.7	< 0.001	32.2 ± 7.1	39.0 ± 6.1	< 0.001
Free fat mass (kg)	57.4 ± 6.5	60.8 ± 7.2	< 0.001	43.4 ± 4.4	46.5 ± 5.1	< 0.001
Skeletal muscle mass (kg)	32.6 ± 4.0	34.6 ± 4.3	< 0.001	23.9 ± 2.7	25.9 ± 3.1	< 0.001
Systolic BP (mmHg)	119.5 ± 11.9	129.3 ± 13.8	< 0.001	113.6 ± 10.0	122.0 ± 14.0	< 0.001
Diastolic BP (mmHg)	73.9 ± 8.9	81.6 ± 10.1	< 0.001	73.1 ± 8.7	80.4 ± 10.9	< 0.001
MBP (mmHg)	89.1 ± 8.6	97.5 ± 10.1	< 0.001	86.6 ± 8.1	94.2 ± 10.8	< 0.001
FBG (mg/dL)	90.0 ± 10.6	99.8 ± 12.4	< 0.001	89.4 ± 10.2	98.3 ± 13.1	< 0.001
Total cholesterol (mg/dL)	177.8 ± 35.4	190.9 ± 33.4	< 0.001	168.1 ± 26.3	192.0 ± 32.7	< 0.001
HDL-C (mg/dL)	39.4 ± 8.5	33.1 ± 6.6	< 0.001	43.9 ± 10.5	38.6 ± 6.6	< 0.001
LDL-C (mg/dL)	111.4 ± 29.6	113.3 ± 31.4	< 0.001	105.1 ± 22.8	118.3 ± 30.1	0.008
VLDL-C (mg/dL)	27.0 ± 13.7	44.8 ± 18.7	< 0.001	17.0 (10.3)	30.0 (17.8)	< 0.001
TG (mg/dL)	135.0 ± 68.4	224.1 ± 93.3	< 0.001	86.5 (53.0)	150.0 (91.0)	< 0.001
VAI	1.8 (1.2)	3.8 (2.4)	< 0.001	2.0 ± 1.1	4.0 ± 2.3	< 0.001
LAP	38.9 ± 23.8	89.2 ± 43.3	< 0.001	28.1 (24.3)	68.8 (40.0)	< 0.001
NVAI	0.7 (0.5)	1.0 (0.1)	< 0.001	0.5 ± 0.3	0.8 ± 0.2	< 0.001
METS-VF	6.5 ± 0.5	7.0 ± 0.4	< 0.001	6.2 ± 0.6	6.8 ± 0.3	< 0.001
TyG	8.6 ± 0.5	9.2 ± 0.4	< 0.001	8.3 ± 0.4	8.9 ± 0.5	< 0.001
TyG-BMI	223.2 ± 31.3	274.4 ± 34.1	< 0.001	210.5 ± 36.2	274.9 ± 42.5	< 0.001
TyG-WC	773.3 ± 87.3	927.0 ± 90.5	< 0.001	713.8 ± 102.4	866.6 ± 86.9	< 0.001
METS-IR	40.9 ± 6.2	51.7 ± 7.2	< 0.001	38.1 ± 6.9	49.8 ± 7.8	< 0.001
MetS components, N (%)						
Elevated WC	95 (26.9)	332 (81.0)	< 0.001	33 (37.5)	46 (86.8)	< 0.001
Elevated BP	65 (18.4)	256 (62.4)	< 0.001	8 (9.1)	28 (52.8)	< 0.001
Reduced HDL-C level	172 (48.7)	367 (89.5)	< 0.001	65 (73.9)	51 (96.2)	0.001
Elevated FBG level	44 (12.5)	230 (56.1)	< 0.001	10 (11.4)	26 (49.1)	< 0.001
Elevated TG level	97 (27.5)	332 (81.0)	< 0.001	6 (6.8)	27 (50.9)	< 0.001
VFA ≥ 100 cm ² , N (%)	107 (30.3)	315 (76.8)	< 0.001	41 (46.6)	42 (79.2)	< 0.001

Data are presented as mean ± standard deviation or median and interquartile range. Comparisons were determined by t-student for independent samples or U-Mann-Whitney. Categorical variables are presented as count (percentage) and comparisons were determined by χ^2 test or Fischer's exact test. A *p*-value ≤ 0.05 was taken as statistically significant. Abbreviations: MetS: Metabolic syndrome, BMI: Body mass index, WHtR: Waist to height ratio, WC: Waist circumference, VFA: Visceral fat area, BP: Blood pressure, MBP: Mean blood pressure, FBG: Fasting blood glucose, HDL-C: High-density lipoprotein cholesterol, LDL-C: Low-density lipoprotein cholesterol, VLDL-C: Very-low-density lipoprotein cholesterol, TG: Triglycerides, VAI: Visceral adiposity index, LAP: Lipid accumulation product, NVAI: New visceral adiposity index, METS-VF: Metabolic score for visceral fat, TyG: Triglycerides-glucose index, TyG-BMI: Triglycerides-glucose Body mass index, TyG-WC: Triglycerides-glucose Waist circumference index and METS-IR: Metabolic score for insulin resistance.

Table S2. Comparison of anthropometric, body composition and biochemical characteristics in secondary cohort stratified by MetS diagnosis.

Variable	Non-MetS n = 73	MetS n = 113	<i>p</i>
Age (years)	38.0 ± 10.7	40.3 ± 10.4	0.160
Male (%)	34 (46.6)	72 (63.7)	0.021
BMI (kg/m ²)	25.7 ± 4.2	30.6 ± 4.4	< 0.001
WC (cm)	87.6 ± 11.4	101.8 ± 11.2	< 0.001
Visceral fat area (cm ²)	89.7 ± 45.6	137.5 ± 50.9	< 0.001
Total body fat (kg)	20.8 ± 8.3	30.4 ± 9.1	< 0.001
Body fat percentage (%)	30.2 ± 8.6	35.7 ± 7.4	< 0.001
Free fat mass (kg)	47.3 ± 9.1	54.3 ± 10.2	< 0.001
Skeletal muscle mass (kg)	26.4 ± 5.6	30.6 ± 6.1	< 0.001
Systolic BP (mmHg)	115.8 ± 11.3	126.3 ± 15.2	< 0.001
Diastolic BP (mmHg)	71.3 ± 9.1	78.8 ± 9.0	< 0.001
MBP (mmHg)	86.1 ± 8.7	94.6 ± 10.3	< 0.001
FBG (mg/dL)	94.0 (13.0)	108.0 (12.0)	< 0.001
HDL-C (mg/dL)	49.6 ± 12.0	37.5 ± 8.3	< 0.001
TG (mg/dL)	101.0 (61.0)	173.0 (115.0)	< 0.001
BAI1	0.1 (0.3)	0.9 (0.3)	< 0.001
BAI2	0.1 (0.2)	0.9 (0.4)	< 0.001

Data are presented as mean ± standard deviation or median and interquartile range. Comparisons were determined by t-student for independent samples or U-Mann-Whitney. Categorical variables are presented as count (percentage) and comparisons were determined by χ^2 test or Fischer's exact test. A *p*-value ≤ 0.05 was taken as statistically significant. Abbreviations: MetS: Metabolic syndrome, BMI: Body mass index, WC: Waist circumference, BP: Blood pressure, MBP: Mean blood pressure, FBG: Fasting blood glucose, HDL-C: High-density lipoprotein cholesterol and BAI: Biochemical-anthropometrical index.

Table S3. Comparison of MAIs in secondary cohort stratified by sex and MetS diagnosis.

Variable	Men n = 103			Women n = 79		
	Non-MetS	MetS	<i>p</i>	Non-MetS	MetS	<i>p</i>
	n = 32	n = 71		n = 38	n = 41	
MAIm	86.4 ± 24.3	127.8 ± 35.0	< 0.001	-	-	-
MAIw	-	-	-	102.7 ± 39.3	137.3 ± 38.7	< 0.001

Data are presented as mean ± standard deviation. Comparisons were determined by t-student for independent samples. A *p*-value ≤ 0.05 was taken as statistically significant. Abbreviations: MetS: Metabolic syndrome, MAIm: Mexican adiposity index for men and MAIw: Mexican adiposity index for women.

Table S4. Sex and Age-specific cut-off values of VFA-BIA to identify CR in Mexican adults.

Age (years)	VFA				<i>p</i>
	Cut-off Value (cm ²)	Sensitivity (%)	Specificity (%)	AUC	
Men (n = 763)					
20-40 (n = 618)	97.0	67.1	67.3	0.70	< 0.001
41-60 (n = 145)	103.6	76.4	69.2	0.79	< 0.001
Women (n = 141)					
20-40 (n = 112)	103.7	62.0	61.3	0.71	< 0.001
41-60 (n = 29)	115.6	61.1	54.5	0.58	0.500

A *p*-value ≤ 0.05 was taken as statistically significant. Abbreviations: VFA: visceral fat area and AUC: area under the curve.

Table S5. Predictive performance of MAIs, BAIs and indicators of interest to identify CR in Mexican adults.

Indicator	AUC	Sensitivity (%)	Specificity (%)	<i>p</i>
MAIw	0.72	65.7	64.4	< 0.001
MAIm	0.72	65.6	65.6	< 0.001
BAI1	0.89	80.6	80.1	< 0.001
BAI2	0.89	82.0	81.6	< 0.001
METS-VF	0.74	68.5	68.1	< 0.001
WHtR	0.71	64.2	63.8	< 0.001
WC	0.71	63.7	64.1	< 0.001
BMI	0.71	63.8	63.8	< 0.001

A *p*-value ≤ 0.05 was taken as statistically significant. Abbreviations: AUC: area under the curve, MAIw: Mexican adiposity index for women, MAIm: Mexican adiposity index for men, BAI: Biochemical-anthropometric index, METS-VF: Metabolic score for visceral fat, WHtR: Waist to height ratio, WC: Waist circumference and BMI: Body mass index.

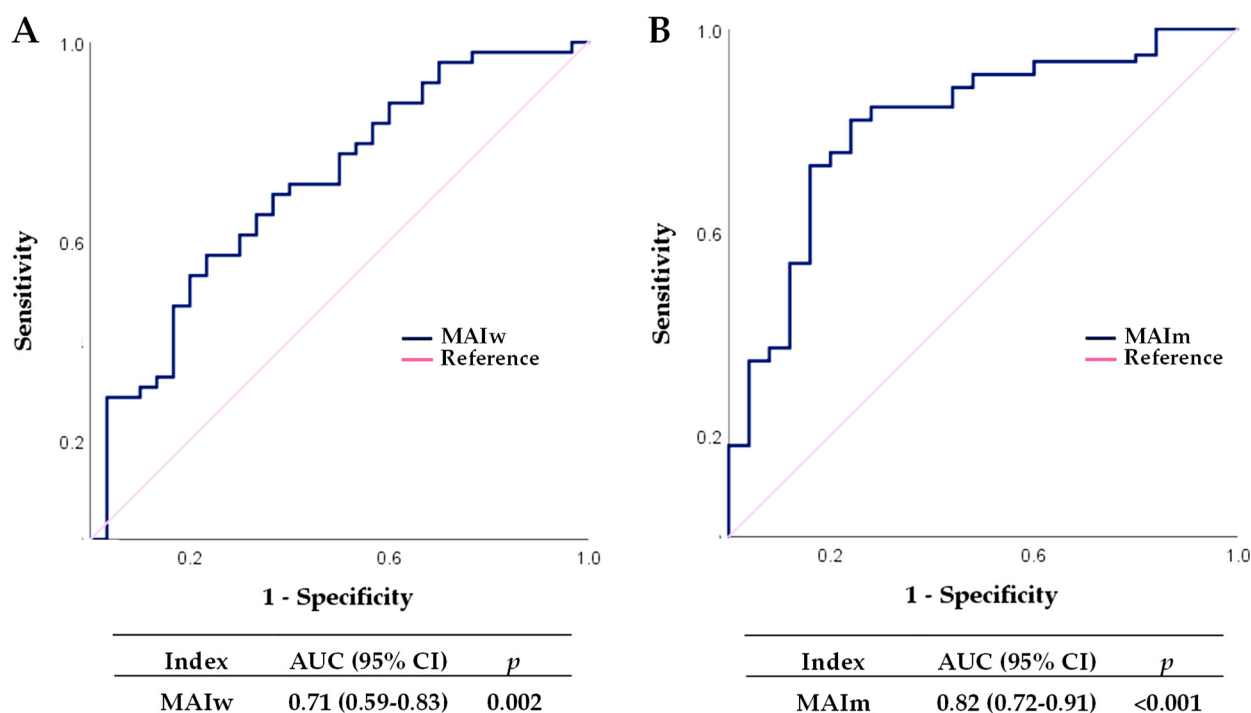


Figure S1. ROC curve and AUC of MAIm and MAIw to identify CR associated to VAT accumulation in secondary cohort. (A) MAIm and (B) MAIw ROC curve to identify CR associated with VAT accumulation. A *p*-value ≤ 0.05 was taken as

statistically significant. Abbreviations: ROC: Receiver operating characteristic, AUC: Area under the curve, CI: Confidence interval, MAIm: Mexican adiposity index for men and MAIw: Mexican adiposity index for women.

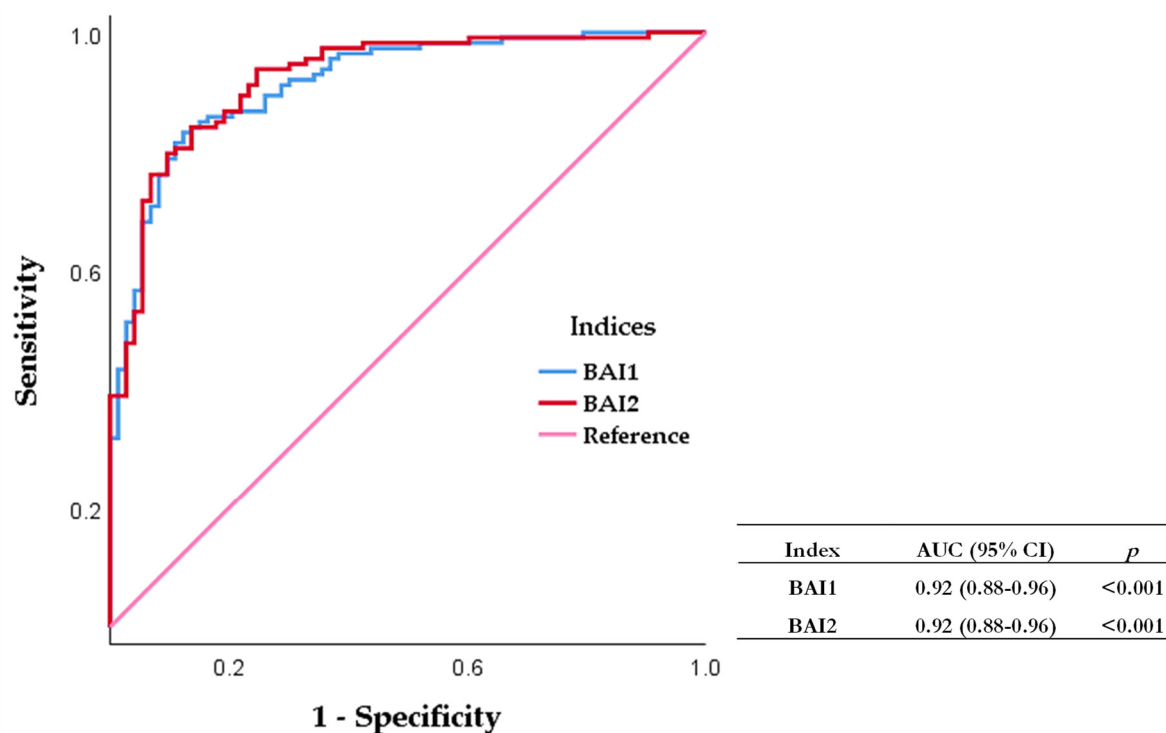


Figure S2. ROC curve and AUC comparison of BAI1 and BAI2 to identify MetS in secondary cohort. A *p*-value ≤ 0.05 was taken as statistically significant. Abbreviations: ROC: Receiver operating characteristic, AUC: Area under the curve, CI: Confidence interval and BAI: Biochemical-anthropometrical index.

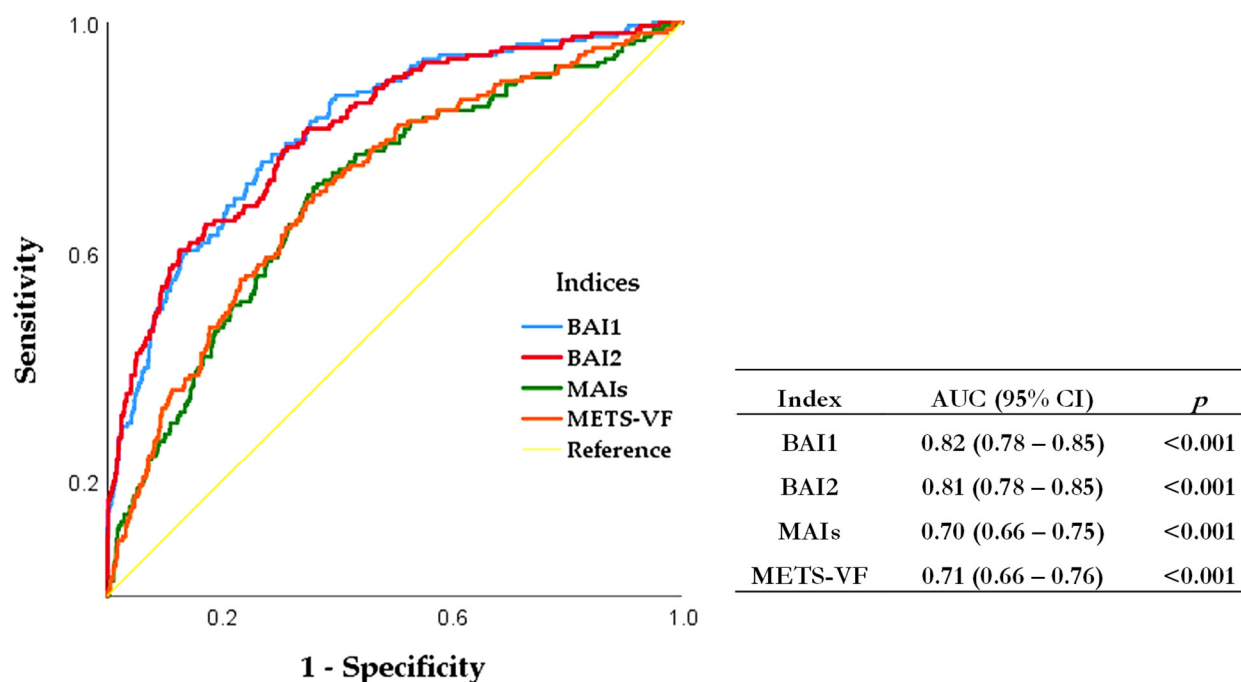


Figure S3. ROC curve analysis and AUC comparison of BAIs, MAIs, and METS-VF to identify hypertension in Mexican adults. A *p*-value ≤ 0.05 was taken as statistically significant. Abbreviations: ROC: Receiver operating characteristic, AUC: Area under the curve, CI: Confidence interval and BAI: Biochemical-anthropometrical index, MAIs: Mexican adiposity indices and METS-VF: Metabolic score for visceral fat.