

Appendix 1: Association between alanine transaminase (per 5-U/L) with prevalent metabolic syndrome and elevated FPG after excluding those on anti-diabetic medications among Iranian and American populations

	women		Men	
	TLGS	ARIC	TLGS	ARIC
	OR (95 % CI)	OR (95 % CI)	OR (95 % CI)	OR (95 % CI)
METS	E/N=742/2460	E/N=2099/5914	E/N=909/2086	E/N=2752/4569
Model 1	1.25(1.19-1.31)	1.19(1.15-1.23)	1.11(1.08-1.14)	1.23(1.18-1.28)
Model 2	1.22(1.16-1.28)	1.19(1.15-1.24)	1.15(1.11-1.18)	1.25(1.20-1.30)
Model 3	1.22(1.16-1.28)	1.19(1.15-1.24)	1.15(1.11-1.18)	1.25(1.20-1.30)
Elevated FPG	E/N=789/2732	E/N=3118/5914	E/N=761/2236	E/N=3110/4569
Model 1	1.17(1.12-1.22)	1.13(1.09-1.17)	1.04(1.02-1.07)	1.12(1.08-1.16)
Model 2	1.15(1.10-1.20)	1.14(1.10-1.18)	1.08(1.05-1.11)	1.13(1.09-1.18)
Model 3	1.15(1.10-1.20)	1.14(1.09-1.18)	1.08(1.05-1.11)	1.12(1.09-1.17)

E: event; N=number of population; OR: odds ratio; CI: confidence interval; ALT: alanine transaminase; BMI: body mass index;
 Elevated FPG: elevated glucose: ≥ 100 mg/dl
 Model 1: included only ALT
 Model 2: model 1+age
 Model 3: model 2+ education levels + physical activity+ smoking status

Appendix 2: Diagnostic test of a different alanine transaminase suggested cut-off points for prevalent metabolic syndrome after excluding diabetic medications among men and women separately: Tehran lipids and glucose study (2018-2022)

	Cut-point, U/L	High-risk population	Event, %	Sensitivity, %	Specificity, %	PPV, %	NPV, %	AUC (95% CI)
Females (n=2732)								
- Currents study	14.5	1382	54.3	73.8	50.5	45.6	77.5	0.62(0.60-0.64)
Males (n=2236)								
- Currents study	21.3	1382	54.3	72.1	47.1	54.3	65.9	0.60(0.58-0.62)

PPV: positive predictive value; NPV: negative predictive value; AUC: Area under the curve; OR: odds ratio.

*Model included ALT, age, education levels, smoking status, and BMI