

Lack of Concordance of NCEP and WHO Criteria for the Diagnosis of the Metabolic Syndrome in Recently Diagnosed Diabetes in North America and Europe in the ADOPT Study Cohort

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It is believed that type 2 diabetic (T2D) subjects in North America (NA) are more obese than those in Europe (EU) and therefore more likely to have the Metabolic Syndrome (MS). We tested this hypothesis using 1999 WHO and NCEP ATP III definitions on a recently diagnosed (< 3 years) Caucasian subset of the ADOPT study cohort from NA [n = 1,756; median BMI 32.2 (IQR 28.5, 36.7) kg/m²] and EU [n = 2,008; BMI 30.1 (27.4, 33.6); *P* < 0.0001 for means]. Prevalence of the MS in NA was similar using the WHO and NCEP definitions (83.1 vs. 83.4%; *P* ns) while in EU, the rates differed (80.7 vs. 74.7%; *P* < 0.0001). MS prevalence was higher in NA, with most pronounced differences seen with the NCEP criteria (*P* < 0.0001). Prevalence of the individual components of the syndrome also differed between regions. Waist circumference [106.7 (97.8, 117.5) vs. 103.0 (95.0, 110.2) cm; *P* < 0.0001] and HOMA IR [7.3 (4.8, 11.0) vs. 5.5 (3.9, 8.2) μU/ml*mmol/l; *P* < 0.0001] were greater in NA. BP was lower in NA [SBP 130 (120, 140); DBP 80 (72, 84) mmHg] than in Europe [139 (128, 145); 80 (75, 86)] (*P* < 0.0001 for SBP and DBP).

Criterion	MS Criteria/Prevalence by Region (%)			
	North America		Europe	
	WHO	NCEP	WHO	NCEP
"Lipids"	67.6*	N/A	48.0	N/A
HDL	N/A	52.7**	N/A	23.0
Triglycerides	N/A	63.4**	N/A	46.3
Obesity [†]	90.8	72.9**	91.8	65.2
HTN	60.3*	73.1**	70.8	83.2
Microalbuminuria	12.8	N/A	14.9	N/A

P* < 0.0001 NA vs. Europe using WHO criteria; *P* < 0.0001 NA vs. Europe using NCEP criteria. [†] Assessed by waist/hip ratio or BMI in WHO criteria, waist circumference in NCEP.

The greater prevalence of the MS in T2D subjects in NA compared with EU is likely to reflect the greater obesity in subjects in NA, which appears to be more central in nature. While obesity by WHO criteria is similar on the 2 continents, the inclusion of waist circumference as one of the NCEP ATP III criteria may make it a more sensitive indicator of central obesity and insulin resistance, and their attendant metabolic effects.