

New risk score could lead to earlier prevention of type 2 diabetes in African Americans

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Researchers have developed a risk assessment scoring system that they believe may better identify certain adults— especially African Americans— at high risk of developing type 2 diabetes, heart disease and stroke than does the current system of diagnosing the metabolic syndrome. The results will be presented Tuesday at The Endocrine Society's 95th Annual Meeting in San Francisco.

"We have found that the [metabolic syndrome](#) manifests differently between [males and females](#) and among various racial-ethnic groups," said study co-author Mark DeBoer, MD, associate professor at the University of Virginia, Charlottesville. "Because current diagnostic criteria for the metabolic syndrome do not consider gender and race, some high-risk individuals are not meeting the criteria for the metabolic syndrome."

For instance, he said African-American men are less likely to be diagnosed with metabolic syndrome, despite having higher rates of type 2 diabetes and heart disease than whites do.

One in five Americans has metabolic syndrome, a collection of risk factors for diabetes and cardiovascular disease, whose diagnosis depends now on having at least three of five components. The components are a large [waist circumference](#), high blood pressure, high [blood sugar levels](#), high triglycerides (levels of fat in the blood) and low levels of high-

density-lipoprotein (HDL), or "good," cholesterol.

"A diagnosis of the metabolic syndrome can trigger [preventive treatment](#) sooner, before [type 2 diabetes](#) develops or a heart attack or stroke occurs," he said.

In new research funded by the National Institutes of Health, DeBoer and his research partner, Matthew Gurka, PhD, of West Virginia University, Morgantown, evaluated data from 6,881 men and women who participated in the National Health and [Nutrition Examination Survey](#) (NHANES) from 1999 to 2010. The participants were ages 20 to 64 years and were African American, white or Hispanic.

Individual components of metabolic syndrome clustered together in different ways between different sex and racial-ethnic groups, the researchers found. These results confirmed that sex- and ethnicity-based differences, which they previously found in teenagers, persist into adulthood, DeBoer said.

Using this information, they created a racial- and sex-specific scoring system for the severity of metabolic syndrome. They assigned numeric values to each of the five metabolic syndrome components, with each component having a different weight for each sex and racial-ethnic group. In African-American men, for example, the HDL cholesterol level received a higher weighting than blood pressure, indicating it may be a more ominous sign of worsening metabolic syndrome, according to DeBoer. In women, waist circumference had a higher weighting in blacks than in whites.

DeBoer said the new linear scoring system strongly correlated with other biological markers of metabolic risk. In addition, the researchers reportedly obtained similar results in African-American adults who participated in the Jackson Heart Study.

According to DeBoer, they plan to create online automatic calculators that patients can use to determine their risk score for severity of metabolic syndrome. They also hope that researchers will use the risk score to determine patients' progress with time, such as improvement in metabolic risk after drug treatment.

Provided by The Endocrine Society

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