

Rising obesity rates in South leading to rapid increase in diabetes cases

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Rising obesity rates in several Southern states are leading to a rapid increase in new cases of diabetes among both black and white adults. A new study helmed by investigators at the University of Texas Health Science Center and Vanderbilt University Medical Center (VUMC) found the risk of diabetes is double for black patients.

Risk of [diabetes](#) rose steadily with increasing body weight, and among those with the highest weight and body mass index (BMI) the risk of diabetes was even greater among whites than blacks. This was especially true for whites if they smoked, had poor diets and were physically inactive.

The study, led by first author Baqiyyah Conway, PhD, assistant professor of Epidemiology and Biostatistics, University of Texas Health Science Center, and corresponding author William Blot, PhD, research professor of Medicine at VUMC and associate director for Population Science Research at Vanderbilt-Ingram Cancer Center, was published Jan. 11 in *PLOS ONE*.

"Obesity in the United States, especially in what is known as the Southern obesity belt, has been rising at an alarming rate," said Blot. "We know that obesity is a prime risk factor for the development of type 2 diabetes among adults but this study shows that its impact was even greater than expected and reinforces the need to address obesity, especially among poor patients, to avoid even more cases of diabetes which can be debilitating, deadly and costly."

The research centered on 24,000 black and 14,064 white patients age 40 to 79 who enrolled in the Southern Community Cohort Study (SCCS) between 2002 and 2009 and who were followed for up to 10 years. The SCCS, an ongoing prospective study investigating health disparities and led by principal investigator Blot, has enrolled more than 85,000 mostly low-income adults with low education levels in 12 Southern states. Two-thirds of the participants are African-American and most individuals enrolled at community health centers serving low-income patients.

Among the participants in this study, 44 percent were obese at the time of enrollment, with obesity prevalence even higher among black women (57 percent). All participants filled out a questionnaire at the time of enrollment and the participants who did not report having been diagnosed with diabetes at that point were the focus of the current study.

By the time of a follow-up questionnaire conducted a median 4.5 years after entry, 12 percent of blacks reported that they had been diagnosed with diabetes and were being treated with medication for diabetes. Among whites, 6 percent reported being newly diagnosed with diabetes and were taking medication to treat the condition.

The percentage of individuals diagnosed with diabetes did not vary greatly between men and women, but rose sharply with increasing BMI. Nearly 20 percent of blacks and 17 percent of whites with class III obesity (BMI ≥ 40 kg/m²) reported taking medicines to treat new-onset diabetes by the time of the follow-up questionnaire.

The association between diabetes risk and BMI differed significantly between blacks and whites, with stronger rising risk trends seen among whites. There was a nearly 10-fold or greater increased risk of diabetes among whites with BMI ≥ 35 kg/m² compared to normal weight whites versus a three-to-four-fold increase among blacks in that higher BMI range.

Socioeconomic status also was correlated with diabetes status, regardless of a person's weight. Those diagnosed with diabetes were more likely to be of lower education and income status and less likely to have private or other non-Medicaid/Medicare health insurance than those without diabetes. This link between diabetes and low socioeconomic status, particularly lack of a high school diploma, was more pronounced among whites than blacks.

Cigarette smoking was associated with a nearly 40 percent increased [diabetes risk](#), while alcohol consumption was associated with reduced risk.

Those reporting hypertension and high cholesterol also were more likely to be diagnosed with diabetes, and the correlation was greater among those using statin drugs to control their cholesterol. Those eating a healthier diet and getting more exercise were slightly less likely to develop diabetes, but the protective trends were modest and statistically significant only for physical activity.

"Based on this research, we can project that within two decades diabetes will be diagnosed in the majority of obese (BMI \geq 30 kg/m²) SCCS participants, and in approximately 75 percent of morbidly obese (BMI \geq 40 kg/m²) men. These high percentages were estimated using a conservative definition of diabetes, requiring use of medications to treat the condition. Our striking findings suggest that the SCCS cohort may be a harbinger signaling further increases to come in other American populations where obesity is common," Blot said.

Provided by Vanderbilt University Medical Center

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