

Researchers find ethnicity key to accurate obesity measurements

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The current National Institutes of Health body mass index cutoff values for obesity are too high for many reproductive-age women in the U.S. and should be adjusted to account for ethnic differences in body composition to produce proper diagnosis of obesity, according to new research from the University of Texas Medical Branch.

Researchers found that the current BMI standards misclassify as "not obese" nearly half of reproductive-age women who are defined as obese by the [World Health Organization](#), which uses actual [body fat](#) percentage to determine obesity. Of particular concern is the finding that more than half of [white women](#) and more than two-thirds of Hispanic women are obese by the WHO standard.

The study, which is the first to look at obesity classifications among ethnically diverse reproductive-age women, appears in the May issue of *Obstetrics and Gynecology*. The study's findings provide evidence that a single BMI value is not appropriate for a diverse population and that racial- and ethnic-specific BMI cutoff values are needed. BMI standards are the most widely used tool for identifying overweight and obese individuals.

"It is especially important to accurately assess obesity in reproductive-age women, as they are more likely to be obese than similarly aged men," says lead author Dr. Mahbubur Rahman assistant professor in the UTMB department of obstetrics and gynecology and Center for Interdisciplinary Research in Women's Health. "These women are at risk

for cardiovascular disease, diabetes and other obesity-related health conditions and may forgo or be overlooked for needed tests and treatments."

Over the past 20 years, the U.S. has seen a dramatic increase in obesity, which the NIH defines as having a BMI greater than 30 kilograms per meter squared - a measurement calculated by dividing an individual's body mass by the square of his or her height (kg/m²). Comparatively, the WHO defines obesity as greater than 25 percent body fat in men and greater than 35 percent in women. While this criterion is an accurate gauge, it is expensive and difficult to measure.

The study analyzed 555 women between 20 and 33 based on age, height, weight, BMI and [body composition](#). The subjects included 189 white, 159 black and 207 Hispanic women. The researchers assessed subjects' obesity rates and BMI accuracy using three measurements: the current NIH BMI, the WHO guidelines and the researchers own ethnic-specific BMI cutoff values.

Using the current NIH BMI, 205 women were classified as obese. The obesity rate in black and Hispanic women - 46.5 percent and 37.7 percent, respectively - was significantly higher than in white women (28 percent).

However, the WHO guidelines classified 350 women as obese - 63.1 percent of the total sample. The obesity rate was highest among Hispanic women at 69.1 percent. The rates were similar in white and black women, with 58.7 percent and 60.4 percent, respectively, classified as obese.

Finally, researchers applied their own ethnic-specific BMI cutoff values and found that 311 women were obese 52.9 percent of whites, 52.8 percent of blacks and 61.4 percent of Hispanics. These differing cutoff

values (see chart) were determined through statistical procedures that identified BMI values corresponding to the WHO's definition of obesity. The values also take into account the fact that white and Hispanic women have approximately three percent higher body fat than black women for a given BMI.

Currently, NIH BMI obesity rate calculations show that black women have the highest obesity rate. However, these study findings suggest that Hispanic women have the highest rates - based on body fat percentage - and that obesity prevention programs should place special emphasis on [Hispanic women](#).

"BMI is not 'one size fits all.' Inaccurate classification can decrease the impact of obesity prevention programs that will result in many women not receiving the help they need," says senior author Dr. Abbey Berenson, professor in the department of [obstetrics and gynecology](#) and director of the UTMB Center for Interdisciplinary Research in Women's Health.

The researchers recommend that women whose BMI is between 25 and 29.9 kg/m² receive additional counseling to reduce their body weight and avoid [obesity](#) related morbidity.

Berenson adds that lowering the current NIH cutoff values may result in labeling a few women as obese who are not, but that this would be far offset by the benefit of reaching millions of women in need of body weight and health interventions.

The researchers believe these findings are applicable to men and other age groups and anticipate follow-up studies.

Provided by University of Texas Medical Branch at Galveston

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