

# Women felt more stigma about abdominal fat than men, regardless of body weight

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Women were more likely than men to report feeling stigmatized about abdominal fat, regardless of their body mass index or weight, according to preliminary research to be presented at the American Heart Association's Scientific Sessions 2021.

The study also reports that internalized weight stigma among women may be linked to additional weight gain. Weight bias internalization happens when people apply negative, weight-based stereotypes to themselves.

"Some people who struggle with managing their weight may devalue themselves based on external messages from society telling them they are unattractive, self-indulgent or weak-willed because they weigh more," said lead study author Natalie Keirns, M.S., a doctoral candidate in clinical psychology at Oklahoma State University in Stillwater, Oklahoma. "When these 'anti-fat' messages are internalized, people often feel shame, which in turn, may make them vulnerable to weight gain."

The study assessed the connection between abdominal, or visceral fat, and self-devaluation related to participants' weight. Visceral adiposity is fat inside the body that wraps around the abdominal organs near the center of the body.

"We know that stress may lead to weight gain and, specifically, to higher visceral fat. Visceral adiposity is the type of fat that is more closely related to CVD risk," Keirns said. "Shame, specifically as an emotion, is related to human stress response. When we feel shame, our production of cortisol increases, which can lead to the accumulation of visceral fat."

For this study, Keirns and colleagues investigated if internalized weight stigma is related to higher levels of visceral fat. The study included 70 participants, ages 22 to 39, with an average body mass index (BMI) of 29 and average of 33% total body fat.

Internalized weight stigma was measured using an 11-item, self-reported questionnaire called the Weight-Bias Internalized Scale-Modified (WBIS-M). The scores on the questionnaire range from one to seven, with seven representing the highest level of weight bias internalization and one

representing the least. Dual-energy X-ray absorptiometry (DEXA) scanning was used to measure visceral and total body fat. DEXA scans are a type of full body scan that use spectral imaging to measure bone density and body composition, including body fat and muscle.

Percentage of total [body](#) fat, race and ethnicity, gender and age were factored into the analysis. Among the key findings:

- Women had higher levels of weight bias internalization (average WBIS score of 3.5) than men (average WBIS score of 2.7).
- Higher levels of internalized weight stigma corresponded to higher levels of visceral fat in women only. For women, each one-point increase on the WBIS-M score corresponded to an average increase of 0.14 pounds of visceral fat. For men, each one-point increase on the WBIS-M score was unrelated to visceral fat.

"Even though men typically, on average, had more of this harmful fat than women, we didn't see the same relationship with the psychological, social stigma. For women, the way we view our bodies, and the way others view and judge our bodies appears to have negative effects," Keirns said. "Even though the women had less visceral adiposity than men, it may be impacting our health more because of the negative way we feel about ourselves."

According to the researchers, this is the first study to suggest that women with higher levels of weight bias internalization are more likely to accumulate more visceral fat.

"Among [health care professionals](#), we need to be more aware of our assumptions and how weight bias can negatively affect our patients," Keirns said. "Shifting the conversation from weight loss to health gain may be a simple way to change these conversations in order to eliminate what amounts to bias and judgment toward patients of higher weight."

"This study highlights the important challenge of weight stigma, which is a significant barrier to us successfully addressing obesity. Clinicians should be aware that weight stigma leads to more stress, higher cortisol levels, a greater likelihood of unhealthy behaviors, lower likelihood of seeking care and generally contributes to more weight gain and worse outcomes," said American Heart Association volunteer expert Chiadi Ericson Ndumele, M.D., Ph.D., M.H.S., the Robert E. Meyerhoff Assistant Professor of Cardiology, Clinical Connection in the department of medicine at Johns Hopkins University School of Medicine in Baltimore. "In addition, it's important to be aware that clinical environments often perpetuate a significant amount of [weight stigma](#). There is a lot of anti-weight bias in the communications and the kind of care patients receive within clinical environments. It's up to us to have a healthier approach to how we're thinking about and addressing obesity with our patients, which really relates to how well we appreciate the complexity of the factors that lead to the development of obesity."

A major limitation of the study is that it is a cross-sectional study, meaning data from only one point in time was analyzed. Future research is needed to confirm if [weight](#) bias internalization causes [abdominal fat](#).

**More information:** [professional.heart.org/en/meet.../scientific-sessions](https://professional.heart.org/en/meet.../scientific-sessions)

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