

Discrimination linked to increase in toxic abdominal fat

March 10 2011, By Helen Dodson



A new study by the Yale School of Public Health (YSPH) finds that middle-aged women who reported frequent instances of discrimination had significantly higher levels of one of the most toxic forms of fat—visceral, invisible fat — making them more susceptible to a range of chronic conditions, including heart disease and diabetes. The study appears online in the *American Journal of Epidemiology*.

While previous studies have identified a relationship between [discrimination](#) and physical health, this is believed to be the first study

linking such experiences with specific subtypes of abdominal fat.

Led by Tené T. Lewis, Ph.D., assistant professor at YSPH, researchers studied 402 African-American and Caucasian women in the Chicago area. Participants' exposure to discrimination was assessed via a scale that rated day-to-day experiences over the previous 12 months. They were asked about subtle slights and insults that could happen on a day-to-day basis, such as being treated with less respect than other people, receiving poorer service than others in restaurants or stores, or being insulted.

Participants had their levels of abdominal fat measured with highly accurate computed tomography scans. In the past, similar studies have relied on a less-accurate measurement of waist circumference.

The research found that each one-point increase on the discrimination scale was associated with a 13.03-cm² higher amount of visceral fat. This association remained even after considering overall body fat, cardiovascular risk factors, and depressive symptoms.

"It is important to note that this is the type of fat that you don't see. Many people believe that discrimination and fat are associated primarily because of discrimination against the overweight and obese—that the fat that you see leads to mistreatment. What we found suggests that the association may also go in the other direction, with experiences of discrimination and mistreatment actually contributing to the development of damaging internal fat," said Lewis. "What remains to be determined is what we can do about it — whether we can intervene in some way to reduce the negative health impact of these types of experiences."

The relation between discrimination and visceral fat levels did not differ significantly between African-American and Caucasian women. While

the African-American participants reported more instances of discrimination, the study found that the effects of discrimination on visceral fat levels were the same for both racial groups.

The study also analyzed the effects of discrimination on subcutaneous fat levels, but did not find an association. Subcutaneous fat is body fat that is closer to the skin's surface and is considered less dangerous than [visceral fat](#). Visceral [fat](#), meanwhile, surrounds the internal organs and is considered a serious health threat.

Provided by Yale University

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