Does Where Fat Accumulates on a Woman's Body Influence Breast Cancer Risk?

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Previous studies have shown that obesity is a risk factor for breast cancer in women. Now, recent findings published in The Oncologist suggest that where fat is deposited on a woman's body may determine the type of breast cancer she develops, reports MedPage Today.

For the case-control study, researchers at Shandong University in China assembled 1,316 women ages 25 to 30 who were newly diagnosed with breast cancer. Healthy outpatients who visited hospitals for regular physical exams formed the randomized control group. (Women with recurrent or metastatic breast cancer, other concurrent malignancies and a prior history of cancer were excluded from the study.)

Next, scientists assessed the relationship between body-size-related factors and breast cancer risk based on the status of hormone receptors (HRs), which are proteins in or on cells that attach to estrogen and progesterone and depend on these hormones to grow. HR-positive breast cancer cells contain either estrogen or progesterone receptors while HR-negative subtypes don't have these hormones.

Results showed that obese women with large amounts of visceral fat (body fat stored around organs within the abdominal cavity) were at greater risk for HR-negative breast cancer than those with less of this particular fat. In addition, those with higher amounts of subcutaneous fat (fat that lies just beneath the skin) were at higher risk for HR-positive breast cancer.

Furthermore, findings hinted that the breast cancer prevention drug tamoxifen, which is used by women at high risk—but is ineffective against estrogen-receptor-negative subtypes—may not work for those who carry excessive abdominal fat.

"Different chemoprevention strategies may be appropriate for selected individuals, highlighting the need to be particularly aware of women with a high waist/hip ratio but normal body mass index," wrote the study's authors. "Given the lack of any proven pharmacologic intervention for estrogen-receptor-negative breast cancer, stricter weight-control measures may be advised in these individuals."

One significant drawback of the study was that scientists included only those body-size measurements taken at the time of breast cancer diagnosis. Researchers did not track important factors, such as women’s weight gain over time or their use of hormone-replacement therapy.

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