

The role of fat in assessing breast cancer risk

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It is known that a high proportion of dense breast tissue, as seen with a mammogram, is associated with a high risk of breast cancer. But the role of non-dense fat tissue in the breast is less clear. New research published in BioMed Central's open access journal *Breast Cancer Research* separates the breast cancer risks associated with dense, fibroglandular tissue, and fat, and shows that large areas of either are independently associated with an increased risk.

The [mammograms](#) of postmenopausal women with [breast cancer](#) were compared to controls without cancer. The study used sophisticated computer software to read the films to reduce reader error (or intuition). The software simply compared dense versus non-dense tissue and was not looking for specific irregularities.

Not surprisingly older women and women with a higher BMI have a higher percentage of non-dense tissue. The women with breast cancer tended to have a larger area of dense tissue and a larger area of non-dense tissue so that the biggest risk was for women with the largest areas of both. However this is not necessarily reflected in breast size because the risk associated with fat, though significant, is lower than the risk associated with fibroglandular tissue. Consequently women with a smaller amount of dense tissue have a lower risk than those with more dense tissue for the same breast size.

Dr Carla van Gils, from the University Medical Centre Utrecht, who lead the research explained, "Fat tissue is known to produce the hormones such as oestrogen which are known to promote the growth of

ER positive cancer. However it seems that it is the local fat tissue which is important to [breast cancer risk](#) at not just general body fat (as measured using BMI). Consequently it may be important to consider both types of tissue when assessing breast cancer risk."

More information: Mammographic density and breast cancer risk: the role of the fat surrounding the fibroglandular tissue, Mariëtte Lokate, Petra H.M. Peeters, Linda M. Peelen, Gerco Haars, Wouter B. Veldhuis and Carla H. van Gils, *Breast Cancer Research* (in press)

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