

# Breast density linked to increased risk of subsequent breast cancer

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Researchers at Kaiser Permanente have found that patients with a very early form of breast cancer (ductal carcinoma in situ or DCIS) who have higher mammographic density may be at increased risk for subsequent breast cancer, especially in the breast opposite to the one with the initial cancer.

These study results are published in [Cancer Epidemiology, Biomarkers & Prevention](#), a journal of the American Association for Cancer Research.

Mammographic density refers to the proportion of the breast that appears dense on a mammogram; it is one of the strongest risk factors for primary invasive [breast cancer](#). On a mammogram, dense tissue looks white while non-dense tissue looks dark grey. The dense area consists primarily of breast ducts and connective tissue, while the non-dense tissue is mostly fat.

Results of a previous study showed that patients with DCIS who had higher mammographic density had about two to three times increased risk for a second breast cancer.

To confirm her earlier findings, Laurel A. Habel, Ph.D., research scientist at Kaiser Permanente's Division of Research, and colleagues conducted a larger cohort study that consisted of 935 women diagnosed with DCIS who were treated with breast-conserving surgery (i.e., not a mastectomy) between 1990 and 1997 at Kaiser Permanente of Northern California.

After reviewing medical records, evaluating mammograms at diagnosis and then calculating the risk of subsequent breast cancer events during follow-up, the researchers found that risk of second breast cancer appeared to be elevated among the women with higher density.

"While risk was elevated for both breasts, the increase was greatest and most consistent for the breast opposite to the one with the initial cancer," Habel said.

Of the patients, 164 had a subsequent ipsilateral breast cancer (breast cancer on the original cancer-affected breast) and 59 had a new primary cancer in the other breast during follow-up. The researchers anticipated finding an increased risk of a subsequent cancer in the breast with the initial cancer, as well as in the opposite breast.

Habel stressed that additional studies will be needed to confirm these risk estimates and determine whether information on density can aid in risk assessment and treatment options.

"Information on mammographic density may help with treatment decisions for ductal [carcinoma](#) in situ patients," she said. "While it's not a strong enough risk factor on its own, it may be possible to combine it with other factors to improve risk assessment and inform treatment decisions."

Provided by American Association for Cancer Research

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