

Digital breast cancer detection technology does not improve outcomes

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Micrograph showing a lymph node invaded by ductal breast carcinoma, with extension of the tumour beyond the lymph node. Credit: Nephron/Wikipedia

A new study in *JNCI: Journal of the National Cancer Institute* finds that breast cancer screening using digital mammography technology is not associated with improved health outcomes when compared to older film detection technology.

In 2000, the US FDA approved digital mammography technology. Studies suggested the new technology was potentially more specific in its findings. Proponents of the technology believed it would reduce the number of callbacks for positive findings, find more disease, and lead to fewer cancers diagnosed in between screenings (interval cancers).

Researchers conducted a [systematic review](#) and searched seven databases for publications that compared film to digital mammography within the same population of asymptomatic women. Researchers looked for evidence of improved

health outcomes in the newer digital technology, by analyzing detection rates, recall rates (patients contacted for further testing), and cancers diagnosed in between scheduled screenings.

The meta-analysis included 24 studies with 16,583,743 screening examinations (10,968,843 film and 5,614,900 digital). The difference in cancer detection rate showed an increase of 0.51 per 1,000 screens, and a recall rate increase of 6.95 per 1,000 screens after the transition from film to digital mammography.

The researchers found that the small increase in cancer detection following the switch to new digital mammography did not translate into a reduction in cancers diagnosed in between scheduled screenings

The researchers conclude that while digital mammography is beneficial for [medical facilities](#) due to easier storage and handling of images, these results suggest the transition from film to [digital mammography](#) has not resulted in health benefits for screened women.

"While the transition from film to digital may have been beneficial for technological reasons and for efficiencies in service screening, our research shows the increase in cancer detection was largely attributable to more detection of DCIS ([ductal carcinoma](#) in situ), with little difference in invasive cancer detection," said study's lead author, Rachel Farber. "At a time when new mammography and other imaging technologies are proposed for adoption in population screening, it is critical to carefully consider and evaluate the effect this could have on [health outcomes](#)."

More information: Rachel Farber et al, Impact of Full-Field Digital Mammography versus Film-Screen Mammography in Population Screening: a Meta-analysis, *JNCI: Journal of the National Cancer Institute* (2020). [DOI: 10.1093/jnci/djaa080](https://doi.org/10.1093/jnci/djaa080)

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