# AI significantly enhances breast cancer detection rates, study finds



A significant study has revealed the potential benefits of artificial intelligence (AI) in the realm of breast cancer detection, presenting compelling evidence that the technology can aid radiologists in identifying malignancies more effectively than traditional methods alone. The research, which is considered the largest of its type to date, involved nearly 200 certified radiologists and was carried out across 12 breast cancer screening sites in Germany.

The study, led by Alexander Katalinic from the University of Lübeck, saw radiologists examining mammograms from 461,818 women between July 2021 and February 2023. Participating radiologists had the option to use AI assistance in their assessments, resulting in 260,739 patients being examined with both AI and a radiologist, while 201,079 patients were evaluated by a radiologist without AI support.

The findings indicated that those radiologists who incorporated AI into their workflow achieved a detection rate of 6.7 cases of breast cancer per every 1,000 scans. This marked a 17.6 per cent increase compared to the 5.7 cases per 1,000 scans detected by those who opted not to use AI. Further analysis revealed that the likelihood of detecting cancerous cells in biopsy samples was also higher when AI was employed, with a success rate of 64.5 per cent compared to 59.2 per cent in cases without AI involvement.

Katalinic described the scale of improvement in cancer detection rates as "extremely positive and exceeded our expectations," asserting that the results demonstrate a clear enhancement in screening efficacy with the use of AI.

Stefan Bunk from Vara, an AI company collaborating in the study, highlighted that the aim was to establish "non-inferiority," suggesting that displaying AI's non-inferiority to human radiologists would have been a notable achievement in conserving workloads. Instead, the study exceeded expectations by showing that AI not only matched but surpassed human capabilities.

While the findings may signal progress, concerns persist regarding the possible over-reliance on AI in medical diagnostics. Some radiologists reported spending less time examining scans classified as “normal” by the AI system, averaging just 16 seconds, while spending 30 seconds on scans that the AI could not classify, indicating a potential risk of oversight for nuances that may require a human eye.

Nevertheless, experts such as Ben Glocker from Imperial College London have welcomed the study's outcomes, emphasising that it provides further validation for AI's role in breast screening. Glocker stated, "The study offers further evidence for the benefits of AI in breast screening and should be yet another wake-up call for policymakers to accelerate AI adoption." He expressed approval of the study’s design, which allowed radiologists the flexibility to choose when to utilise AI, advocating for more practical real-world evaluations of the technology. "We cannot easily assess this in the lab or via simulations and instead need to learn from real-world experience," Glocker remarked, emphasising the readiness of technology and the need for corresponding policies to harness its full potential in healthcare.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://www.globenewswire.com/news-release/2025/01/07/3005134/0/en/AI-Supported-Mammography-Revolutionizes-Breast-Cancer-Detection-Landmark-German-Study-Proves-Real-World-Impact.html> - Corroborates the study's findings on AI improving breast cancer detection rates, the involvement of 500,000 participants, and the reduction in radiologists' workloads.
* <https://www.globenewswire.com/news-release/2025/01/07/3005134/0/en/AI-Supported-Mammography-Revolutionizes-Breast-Cancer-Detection-Landmark-German-Study-Proves-Real-World-Impact.html> - Provides details on the PRAIM study, led by Professor Alexander Katalinic, and the significant improvement in cancer detection rates with AI assistance.
* <https://indianexpress.com/article/technology/artificial-intelligence/ai-breakthrough-in-breast-cancer-detection-9768970/> - Supports the data on the number of radiologists and patients involved, the detection rates with and without AI, and the success rates in biopsy samples.
* <https://indianexpress.com/article/technology/artificial-intelligence/ai-breakthrough-in-breast-cancer-detection-9768970/> - Confirms the study's outcomes, including the 17.6% improvement in cancer detection rates and the reduced workload for radiologists using AI.
* <https://www.globenewswire.com/news-release/2025/01/07/3005134/0/en/AI-Supported-Mammography-Revolutionizes-Breast-Cancer-Detection-Landmark-German-Study-Proves-Real-World-Impact.html> - Quotes from Stefan Bunk and Professor Alexander Katalinic highlighting the study's results and the benefits of AI in breast cancer screening.
* <https://indianexpress.com/article/technology/artificial-intelligence/ai-breakthrough-in-breast-cancer-detection-9768970/> - Details the flexibility given to radiologists to choose when to use AI and the real-world implications of the study's design.
* <https://www.globenewswire.com/news-release/2025/01/07/3005134/0/en/AI-Supported-Mammography-Revolutionizes-Breast-Cancer-Detection-Landmark-German-Study-Proves-Real-World-Impact.html> - Discusses the potential risks and benefits of relying on AI in medical diagnostics, including the time spent on normal and unclassified scans.
* <https://indianexpress.com/article/technology/artificial-intelligence/ai-breakthrough-in-breast-cancer-detection-9768970/> - Quotes from Ben Glocker on the study's validation of AI's role in breast screening and the need for real-world evaluations.
* <https://www.globenewswire.com/news-release/2025/01/07/3005134/0/en/AI-Supported-Mammography-Revolutionizes-Breast-Cancer-Detection-Landmark-German-Study-Proves-Real-World-Impact.html> - Highlights the significance of the study in Germany and its impact on the discussion about AI-assisted mammography screening globally.