

A second set of eyes for BreastScreen Aotearoa

AI as a second reader is a practical response to workforce pressure - and a bridge to a more personalised, precision-health future for women in Aotearoa New Zealand.

By Fay Sowerby | 28 May 2026

Health Minister Simeon Brown's announcement that Health New Zealand is moving toward procuring and validating an artificial intelligence (AI) tool for mammogram reading is a significant moment for women's health in New Zealand. It should be welcomed - and carefully scrutinised - for exactly what it is: not a machine taking over diagnosis, but a second set of eyes to support BreastScreen Aotearoa, a trusted national programme that must remain safe, equitable and human-centred. ¹

The proposed model is straightforward. AI would undertake one of the two independent reads currently required in the mammogram assessment process, while clinicians remain central to all decisions about diagnosis, follow-up and care. Health New Zealand's current request for proposals is for in-market AI mammography solutions that can support mammography machine-reading and breast-density reporting within BreastScreen Aotearoa's blind double-read workflow. The planned approach is phased: validation, pilot implementation, and then national rollout and support if the tool proves safe and effective. ^{1,2}

That distinction matters. Some New Zealand women will understandably feel nervous about AI entering breast screening. Breast screening is not an abstract technology problem; it is personal, emotional and often frightening. For a woman waiting for a result, the idea that a computer might be involved can sound cold or unsafe unless the explanation is clear. The public message needs to be simple: your mammogram will not be left to a machine. AI is being considered as one of the two reads, with qualified health professionals still responsible for decisions about patient care. ^{1,4}

A useful message for women: Your mammogram will not be left to a machine. AI is being tested as one of the two independent reads, with clinicians still responsible for diagnosis and follow-up. The aim is to add another careful check, support radiologists under pressure, and find cancers as early as possible.

The practical case for change is strong. Around 3,400 women are diagnosed with breast cancer each year in New Zealand. BreastScreen Aotearoa screens about 270,000 women aged 45 to 69 annually, and a phased age extension to 74 is underway. That is the right direction for early detection, but it also increases reading volumes in a system that already has workforce constraints. Health New Zealand's radiology and imaging workforce plan estimates a current shortage of about 90 radiologists, or 13.6 percent of current need, and notes rising demand for imaging across the health system. ^{1,3}

In that context, AI is not a gimmick. It is a practical and sensible step to help sustain the screening programme, reduce pressure on a limited specialist workforce, and allow radiologists to focus their expertise where it adds the greatest value. It should sit alongside - not instead of - investment in radiology training, breast-screening expertise, access and follow-up pathways. ^{3,4}

The evidence is now strong enough to act carefully

International evidence has moved quickly. The Swedish MASAI trial, involving more than 100,000 women, has provided some of the most important randomised evidence for AI-supported mammography. Final two-year results reported fewer interval cancers - cancers diagnosed between screening rounds - in the AI-supported group, with no meaningful increase in false positives. Earlier results also showed reduced radiologist reading workload. For screening programmes, fewer interval cancers matter because they suggest more cancers are being found when screening is meant to find them: early, smaller and more treatable. ^{7,8}

Large real-world evidence points in the same direction. A German population-screening study of more than 460,000 women found that AI-supported double reading was associated with a higher breast cancer detection rate without negatively affecting the recall rate. This is important because women do not simply want more technology; they want technology that finds more important cancers without creating unnecessary anxiety, callbacks and procedures. ⁹

Eric Topol, the American cardiologist and digital medicine commentator, has recently argued in *The Lancet* and in *Ground Truths* that mammography is one of the clearest examples of AI moving from promise to clinical usefulness. His point is not that AI replaces clinicians; it is that the evidence is now strong enough for AI support to be treated as part of modern mammography, especially when it can improve detection and reduce workload in a field facing global shortages. ¹⁰

But the correct conclusion is not 'turn it on and hope'. The correct conclusion is 'implement it with discipline'. New Zealand experts responding to the announcement have highlighted exactly the issues that should shape implementation: local validation, clear information for women, monitoring for equity, and careful governance of the data behind the tools. In Aotearoa, mammography data are not just technical assets. They include information from communities and should be treated with privacy, transparency and respect, including Māori data sovereignty and equitable benefit-sharing. ⁴

Breast Cancer Foundation NZ has already welcomed the direction

Breast Cancer Foundation NZ has already publicly welcomed the Government's exploration of AI in breast screening, calling it 'a welcome and long overdue step forward'. Its position is consistent with a cautious precision health approach: AI should work alongside radiologists as an additional set of eyes; it should complement, not replace, clinical expertise; and implementation must be safe, effective and equitable. That is an important point. This is not only a Government or technology sector agenda. A major breast cancer advocacy organisation has already framed AI as potentially beneficial if it strengthens screening and detects more cancers earlier. ⁵

This also aligns with the precision health case Breast Cancer Aotearoa Coalition has been making. In BCAC's submission to Manatū Hauora, Fay Sowerby argued that new tools are emerging to predict breast cancer risk, identify who needs greater surveillance, and direct tests and treatments to those who need them most, when they need them most. AI as a second reader is the practical first step; AI-enabled risk assessment is one of the next frontiers. ⁶

What Australia can teach us

Australia provides a useful near-neighbour example because its screening context is close enough to New Zealand's to be relevant, while its research is already more advanced. In Victoria, Associate Professor Helen Frazer has led the BRAIx programme through St Vincent's BreastScreen Melbourne and BreastScreen Victoria. BRAIx is important because it has been developed and tested using local Australian screening data rather than relying only on overseas algorithms. ^{11,12}

The BRAIx work has shown the same direction New Zealand is now taking: AI is not ready to replace human readers on its own, but it can be valuable when integrated into a human-led double-reading system. St Vincent's reported that the algorithm was trained on 3.3 million breast-screen images from BreastScreen Victoria, that use of AI as the second reader offered a beneficial approach, that unnecessary recalls could fall by up to 10.9 percent depending on the model of integration, and that radiologist reading workload was reduced by just under 50 percent when supported by the AI reader. ^{11,12}

South Australia adds a second lesson through Associate Professor Michelle Reintals, Clinical Director and Head of Radiology at BreastScreen South Australia. Her work is especially relevant because it connects breast screening with breast density reporting, women's right to understand their own risk, and the future of personalised screening. BreastScreen SA introduced breast density reporting across all clinics after a study found that more than 90 percent of respondents wanted to continue being told their breast density, and 65 percent felt that knowing their density made them better informed to make decisions about their breast care. ¹⁵

Reintals has explained why this matters: higher breast density is linked to increased breast cancer risk and can also make cancers harder to see on a mammogram. This is directly relevant to New Zealand because Health New Zealand's AI procurement includes breast density reporting. Density reporting is not a side issue. It is part of moving from one-size-fits-all screening toward screening that is more informative, more personalised and more useful for women. ^{2,15}

From second reading to risk assessment

The current BreastScreen Aotearoa procurement is deliberately limited. Health New Zealand is not currently seeking AI tools for breast cancer risk prediction and stratification; the request is for mammography machine-reading and breast density reporting. That is appropriate. A national screening programme should introduce AI in stages, validate it locally, and avoid promising more than the current tool is designed to deliver. ²

However, the direction of travel is clear. The same mammogram that can help identify cancer today may also contain information about a woman's future breast cancer risk. The Australian BRAIx risk score is a strong example. In 2026, the St Vincent's Institute reported that the AI-based BRAIx risk score identified women at high risk of developing breast cancer within four years; nearly one in ten women ranked in the top two percent by the tool were diagnosed within four years despite previously receiving an all-clear result. The model was developed using mammograms from nearly 400,000 women screened through BreastScreen Victoria, tested on almost 96,000 Australian women, and confirmed in an independent Swedish population. ^{13,14}

That is the precision health opportunity. Instead of assuming that all women need exactly the same screening pathway at exactly the same interval, future screening could identify women who may benefit

from closer monitoring, supplemental imaging, genetic assessment, prevention advice or other follow-up. It could also identify women at very low risk, although any move toward less frequent screening would need especially careful evidence, communication and public trust. ^{6,13,14,16}

The heart-health side benefit: breast arterial calcification

There is also a promising side benefit that should be described carefully. The correct term is breast arterial calcification. It refers to calcium visible in arteries in the breast on a mammogram. It is not breast cancer, and a mammogram does not replace a heart scan. But breast arterial calcification can be a marker of cardiovascular risk, and AI may be able to quantify it automatically from images women are already having for breast screening. ^{17,18,19}

In 2026, research published in the European Heart Journal reported that AI-based quantification of breast arterial calcification on screening mammograms was associated with future cardiovascular disease and mortality. The implication is significant for women's health: in time, the same screening encounter could help identify not only breast cancer risk, but also women who should be offered a heart health review. This should be framed as a future precision/prevention opportunity, not as part of the current BreastScreen Aotearoa procurement and not as a reason to alarm women unnecessarily. ^{17,18}

What New Zealand should insist on

For AI in BreastScreen Aotearoa to earn public trust, the safeguards should be explicit. The tool must be validated on New Zealand data before national rollout. Its performance should be audited by age, ethnicity, breast density, provider, machine type, recall rate, false-positive rate, false-negative rate and interval cancer rate. There should be independent clinical governance, transparent procurement, strong data protection, and clear rules about whether public data can be used to train or improve commercial tools. ^{2,4}

The programme should also be clear about four practical questions:

- What exactly will AI do, and what will still be done by clinicians?
- What happens when the AI read and the human read disagree?
- How will women be told about AI, breast density and any future risk information?
- How will Health New Zealand prove that AI improves outcomes for Māori, Pacific women, rural women and women who already face barriers to screening?

Those safeguards are not reasons to delay indefinitely. They are how a careful health system adopts new tools while protecting public confidence. Women do not need to be told that AI is perfect. They need to be told the truth: no screening system is perfect, radiologists are under pressure, and evidence now shows that well-validated AI can help. They also need to know that human oversight, equity and accountability are non-negotiable. ^{4,20}

Used well, AI in BreastScreen Aotearoa can be both practical and humane. It can help sustain double reading when there are not enough radiologists. It can support earlier detection. It can make breast density information more available. And over time, it can help move screening toward a precision health model that better reflects each woman's risk and circumstances. ^{1,2,3,6}

The immediate step is simple: AI as a second reader. The larger opportunity is more profound: a screening programme that learns more from every mammogram, protects trust, and directs care to the women who need it most. That is the promise of precision health. Not AI instead of clinicians, but AI helping clinicians and women make better, earlier and more personalised decisions. ^{6,10}

A second set of eyes today; a foundation for more precise prevention tomorrow.

Breast Cancer Cure-funded research is already helping to build the New Zealand evidence base needed for this next step. Projects from the University of Auckland led by Dr Thiranjya Prasad Babarenda Gamage, Dr Nicholas Knowlton, Dr Annette Lasham and Dr Sugania Reddy are examining AI-driven MRI analysis, AI breast density assessment, risk-stratified screening models and supplementary imaging for higher-risk women. Their combined value is that they move the discussion beyond simply adopting AI as a second reader, toward a more locally validated precision health approach: one that can assess breast density, guide use of ultrasound or abbreviated MRI, model cost and workforce impacts, and test whether new screening strategies improve outcomes equitably for Māori, Pacific and other women in Aotearoa New Zealand. ^{21,22,23,24}

Source notes

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