BreastScreen AUSTRALIA
A joint Australian, State and Territory Government Program

Breast Density and Screening: Position Statement

BreastScreen Australia is a population based screening program, which invites asymptomatic women aged 50 to 74 years to have biennial mammography screening. The program aims to maximise the benefits of early breast cancer detection while minimising potential harm to women.

On a mammogram, fatty tissue appears black while the remaining breast tissue appears white or 'dense'. Women vary in the composition of their breast tissue, and the relative amount of non-fatty areas on a mammogram is referred to as breast density. Higher breast density is associated with an increased risk of breast cancer. Also, since cancers also appear as white areas on mammograms, high breast density may potentially hide some cancers, interfering with the interpretation of mammograms.[1] Dense breasts are common and normal occurring in about one-third of women over 50 years of age.[2]

Increased breast density is associated with an increased risk of breast cancer.[3,4] Breast density also has an impact on screening mammography, as it can lead to a lower accuracy or 'sensitivity' for cancer detection.[1,5] Despite this, **mammography is the best breast cancer screening test in a population based screening program for asymptomatic women aged 50-74, even those with dense breasts.**[6]

Although women with dense breast tissue have an increased risk of breast cancer, the risk is less than having a first degree relative who is diagnosed with breast cancer before menopause (which doubles the risk), or carrying a gene mutation (where the risk is about ten times higher).[7]

BreastScreen Australia recognises that in the future, breast density may have a role in determining the frequency and method of an individual's breast screening. Further research is required to investigate what this role might be, prior to the establishment of any new approach. BreastScreen Australia supports such research, greater discussion, and public awareness of breast density.

BreastScreen Australia does not provide supplemental screening using other technologies for women with dense breasts. This is because there is no randomised controlled trial data that shows supplemental screening (such as MRI, ultrasound or tomosynthesis) saves additional lives for asymptomatic women with dense breasts and no other risk factors. Mammography continues to be the only population based screening tool proven by randomised controlled trials to be effective in reducing mortality from breast cancer for women.[8,9,10,11] The potential harms of providing supplemental screening for women with increased breast density include unnecessary and invasive procedures,[12] additional false positive examinations,[13,14] higher rates of benign breast biopsies,[15,16] over-treatment, overdiagnosis and the associated psychological distress, and additional cost to both the woman and the health system.[10] While there is some evidence that these technologies may detect malignancies not found with mammography, the benefit of any additional cancer detection within a population based screening program has not been shown to outweigh the harms.[17,18]

Breast density can be measured in two ways, either by a radiologist (or screen reading breast physician) analysing an image of the breast to make an estimate of density, or by using commercially available computer software analysis to provide a score. Both methods have limitations when used to measure breast density in a population based screening program.[19] When the same mammogram is interpreted by different radiologists or by the same radiologist on different occasions, differing density may be reported (inter and intra-observer variability).[20,21] While computer software analysis can measure each mammogram, it has not yet been proven to consistently measure each woman's breast density from one screening mammogram to the next. For women assessed as having dense breasts, receipt of inaccurate breast density information may create undue anxiety about their risk

and worry that mammography may have missed a breast cancer.[22,23] For women with fatty breasts (low breast density), it may convey a false sense of security.

The BreastScreen Australia program aims to provide women with accurate and useful information so that they can make informed decisions about their own breast health and their decision to participate in screening. Before BreastScreen Australia adopts a national protocol for breast density reporting, the method needs to be validated, reliable and evidence-based, with benefits outweighing the risks for the women participating in the program.

Having two-yearly screening mammograms through BreastScreen Australia is currently the most effective way to detect breast cancer early in asymptomatic women aged 50-74 in a population based screening program. It is also important for women to be aware of the normal look and feel of their breasts because breast cancer can develop at any time.

The Standing Committee on Screening recommends that, until such time that more evidence is available on how breast density should be best assessed and managed, and evidence supports clinical pathways for women, BreastScreen Australia should not routinely record breast density or provide supplemental screening for women with dense breasts.

Mammography remains the most effective screening test for asymptomatic women aged 50-74 for reducing deaths from breast cancer in a population based screening program.

For women at high risk based on their family history, individualised surveillance recommendations may apply.

Women who are concerned about their risk of developing breast cancer, or may have symptoms of breast cancer, or notice a change in their breasts should see their GP to discuss diagnostic or management options.

The Standing Committee on Screening will continue to evaluate any emerging evidence for breast density and provide up-to-date evidence based reliable information for Australian women.

Australian Government
Cancer Australia

The Royal Australian and New Zealand College of Radiologists
The Faculty of Clinical Radiology

BreastSurgANZ

Cancer Council Australia

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Breast Density FAQs

BreastScreen Australia provides free screening mammography to asymptomatic women aged 50-74 every two years, with the aim of diagnosing breast cancer at an early stage, improving a woman's options for treatments and clinical outcomes. The Program aims to provide women with safe, effective and high-quality care based on current evidence that maximises the benefits of early detection while minimising potential harm to women.

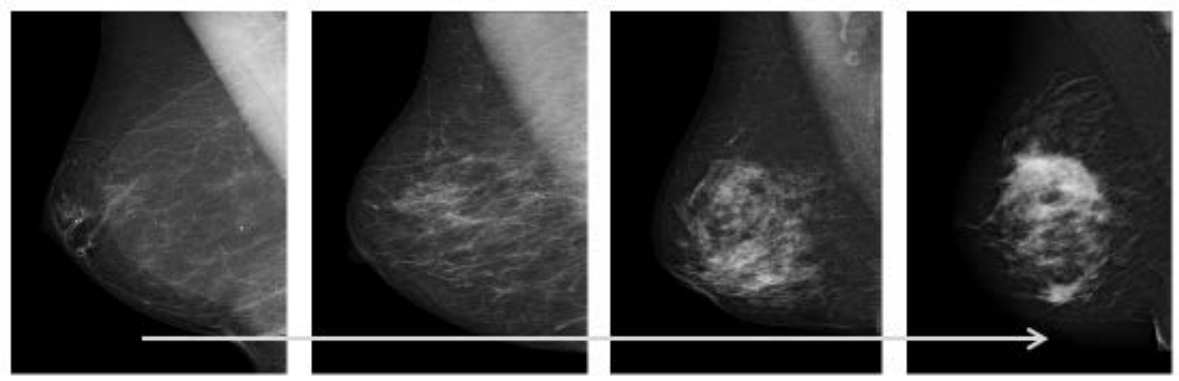
In recent years, breast density has been associated with an increased risk factor of breast cancer. Some countries now require that women are told about their individual breast density when they attend for a screening mammogram. In Australia there are currently no national requirements about reporting mammographic density.

The following information is intended to answer some frequently asked questions about breast density and its impact on breast cancer and mammography in the context of the BreastScreen Australia program. What is breast density?

Breasts are made up partly of fat and partly of glands and fibrous, supporting tissue (together called fibroglandular tissue). While fat appears dark on a screening mammogram, fibroglandular tissue appears 'dense' or white.[1]

Each woman's breasts are different and contain a unique mix of fatty and dense tissue. For reasons that are not fully understood, some women will have lots of dense breast tissue, while others will have little.[2,3]

A woman with lower breast density will have more fatty tissue, whereas a woman with higher breast density will have less fatty tissue.[1] Dense breast tissue is common and normal, occurring in around one third of women aged over 50.[2] It usually reduces with age. The images below show normal breasts with different densities.



1. How do women know if their breasts are dense?

Breast density cannot be seen or felt. There are a range of technologies that can be used to measure breast density.

2. How is breast density measured?

Breast density can only be measured by a radiologist (or screen-reading breast physician) analysing a woman's mammogram or by using computer software to identify the amount of dense breast tissue.

There are currently a number of unresolved issues with routine reporting of breast density. There is no reliable evidence about the most effective way to measure or manage breast density.[4] Even if routine recording was introduced, research shows the visual assessment of breast density by radiologists can be inconsistent.[5,6] A woman may get different results depending on how her image in analysed.[7] If these variations are reported, it is likely to cause confusion and unnecessary anxiety to women.[3,8]

3. How common are dense breasts?

There are no statistics on the number of women in Australia with dense breasts because this information is not currently recorded, however international research suggests that[9]:

- more than half of women under the age of 50 have dense breasts
- about 40 percent of women in their 50s have dense breasts
- about 25 percent of women age 60 and older have dense breasts

Breasts tend to become less dense as women get older, especially after menopause, as the glandular tissue degenerates and the breasts become more fatty. A range of other factors also contribute to breast density such as hormones, Body Mass Index and genetics.[10]

4. Does breast density increase the risk of breast cancer?

Research shows that increased breast density is associated with an increased risk of breast cancer.[11,12] The risk of developing breast cancer is also influenced by a range of other factors such as growing older, having a strong family history, being overweight, drinking alcohol and other lifestyle and environmental impacts.[13]

Age is the biggest risk factor for developing breast cancer, with most breast cancers occurring in women over 50.[13] Importantly, most women who develop breast cancer have no known risk factors other than being female and getting older.

5. Is there value in women knowing their breast density?

Before BreastScreen Australia adopts any form of breast density reporting, the method needs to be validated, reliable and evidence-based, with clear benefits for the women participating in the program.

Measuring breast density can be problematic, as a woman may get different results depending on how her image is analysed.[14] If these variations are reported, it is likely to cause confusion and unnecessary anxiety to women.[3,15]

Informing women they have dense breasts when there is no standardised method to assess breast density, nor evidence to support additional screening, may only serve to raise women's anxiety.[16]

6. Does breast density affect the accuracy of mammography?

High breast density may interfere with the interpretation of mammograms, potentially hiding some cancers. This is because both dense breast tissue and breast cancer can appear white on a mammogram. It also means that sometimes women may be required to attend for further tests that would otherwise not have been necessary.

7. Should women with dense breasts have screening mammograms?

Yes. Mammography is still the best breast cancer screening test for asymptomatic women aged 50-74, including women with dense breast tissue. Mammography is also the only screening tool that

has been demonstrated through randomised controlled trials to lower breast cancer mortality.[17] The BreastScreen Australia program has been found to reduce breast cancer mortality by around 21-28% for women 50-69 years of age.[17]

While the accuracy of mammography can be lower in women with dense breasts, it is still the best test for population-based screening.

It is important for all women to be breast aware and to know the normal look and feel of their breasts. If women are concerned about their breast cancer risk or notice any changes in their breasts they should see their GP.

8. Should women with dense breasts be screened more frequently?

Currently the best way for asymptomatic women aged 50-74 to detect breast cancer early is to have two-yearly screening mammograms through BreastScreen Australia.

BreastScreen Australia constantly monitors and reviews evidence to ensure the program is delivering safe, high-quality and evidence-based care to women. The program will continue to assess the evidence about assessing and managing women with dense breasts in the context of population based screening. However until there is more robust, scientific evidence available, two-yearly mammography is the most effective screening test for asymptomatic women aged 50-74 years, regardless of breast density.

9. Should women with dense breasts have any additional tests?

BreastScreen Australia does not provide supplemental screening using other technologies for women with dense breasts. This is because there is no randomised controlled trial data that shows supplemental screening (such as MRI, ultrasound or tomosynthesis) saves additional lives for asymptomatic women with dense breasts and no other risk factors.

However, extra screening tests may be considered by an individual woman and her doctor. Some possible options include ultrasound, Magnetic Resonance Imaging (MRI) and digital mammography tomosynthesis (3D mammography). However, there can be significant harms associated with having additional tests including unnecessary and invasive procedures, false positive results[18,19] (a woman is told she has cancer when there is no cancer present), overdiagnosis, over-treatment, additional costs to both the woman and the health system and psychological distress.[8,16]

10. Is BreastScreen Australia planning to report on breast density in the future?

BreastScreen Australia supports greater discussion, public awareness and research into breast density. BreastScreen Australia respects a client's right of access to their personal medical information and encourages the involvement of clients in developing evidence-based approaches to breast cancer risk assessment, prevention and early diagnosis. The benefits and drawbacks of routine reporting of breast density are a complex issue that needs to be evaluated, in discussion with the consumers.

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