BreastScreen AUSTRALIA
A joint Australian, State and Territory Government Program

Breast Density Position Statement

BreastScreen Australia is a population based screening program that uses mammography for the early detection of breast cancer. A central tenet to the success of BreastScreen Australia is to maximise the benefits of early breast cancer detection while minimising potential harm to women.

Increased breast density is associated with an increased risk of breast cancer. However, breast density also has an important impact on screening mammography, as it can lead to a lower accuracy or 'sensitivity' for cancer detection. Despite this, **mammography is still the best breast cancer screening test for women, even with dense breasts.**

On a mammogram, fatty tissue appears black and normal breast tissue and fibrous supportive tissue appears white or 'dense'. Thus breast density may mask potentially significant lesions including cancers that also appear as white shapes on a mammogram.

At this time, BreastScreen Australia does not provide women with information about breast density, nor does it provide supplemental screening using other technologies for women with dense breasts. This is because there is no randomised controlled data that shows supplemental screening saves lives and there is also no consensus that breast density confers sufficient risk to warrant supplemental screening. The potential harms of disclosing breast density and providing supplemental screening are considered to outweigh the benefits.

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. There is currently no reliable method that can be used to measure breast density in a consistent manner. When the same mammogram is interpreted by a different radiologists or by the same radiologist on different occasions, differing density may be reported (inter and intraobserver variability). If these variations are reported to women after each screening mammogram, it might result in confusion or an impression of the lack of reliability of mammography. For women with dense breasts, receipt of breast density information may create undue anxiety about their risk and worry that mammography may have missed a breast cancer. For women with fatty breasts, it may convey a false sense of security.

Before any change is made in the information provided to women in the BreastScreen Australia Program it needs to be validated, safe and evidence-based.

There is currently no randomised controlled trial data that shows supplemental screening using technologies such as ultrasound, Magnetic Resonance Imaging (MRI) or tomosynthesis (3D mammography) saves lives. Mammography continues to be the only population based screening tool that is effective in reducing mortality from breast cancer for women, including those with dense breasts. There is also no consensus that breast density confers sufficient risk to warrant supplemental screening. The potential harms associated with supplemental screening include unnecessary and invasive tests, additional false positive examinations, a higher rate of benign breast biopsies and associated psychological distress and financial costs to both the woman and the health system. 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.

Having two-yearly screening mammograms through BreastScreen Australia is currently the most effective way to detect breast cancer early in asymptomatic women. However, 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 coherent research evidence is available on how breast density should be best measured and managed, **mammography remains the most effective screening test for women, regardless of breast density.**

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

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

References: ***yet to be incorporated***
American College of Radiologists. (2012) ACR Statement on Reporting Breast Density in Mammography Reports and Patient Summaries, April 24, 2012. Retrieved from http://www.acr.org/About-Us/Media-Center/Position-Statements/Position-Statements-Folder/Statement-on-Reporting-Breast-Density-in-Mammography-Reports-and-Patient-Summaries

This position statement was developed by BreastScreen Australia and the Royal Australian and New Zealand College of Radiologists' Breast Imaging Reference Group, with input from [insert organisations here].

Endorsed by the Standing Committee on Screening of the Community Care and Population Health Principal Committee of the Australian Health Ministers' Advisory Council on XXX 2016

DRAFT BREAST DENSITY FAQS

BreastScreen Australia aims to reduce illness and death from breast cancer through an organised approach to the early detection of breast cancer using screening mammography. BreastScreen Australia aims to provide women with safe, effective and high quality care that is based on current evidence and which maximises the benefits of early detection while minimising potential harms to women.

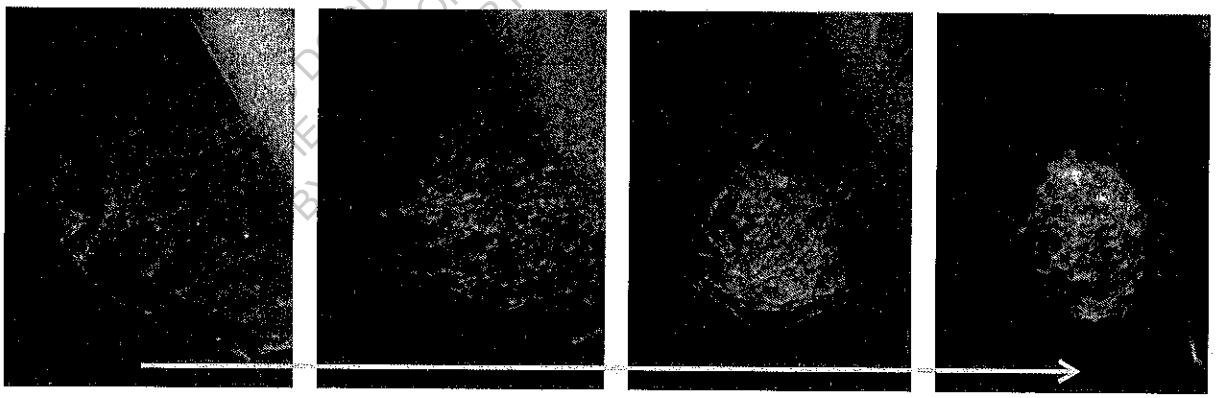
In recent years, it has been identified that mammographic density or breast density is a risk factor for breast cancer. Some countries now require that women be told about their breast density when they attend for mammograms. In Australia there are no requirements about reporting mammographic density at present. 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.

1. 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.

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.

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



Least dense | Less dense | More dense | Most dense

2. How is breast density measured?

Breast density cannot be seen or felt. Breast density can only be measured by a radiologist analysing a woman's mammogram or by using computer software to identify the amount of dense breast tissue. There are generally four categories of breast density:

Least dense ↓ Most dense

Level	Amount of glandular (dense) tissue
1	less than 25%
2	25-50%
3	51-75%
4	more than 75%

There is no consensus about the most effective way to measure or manage breast density. Measuring breast density can also be problematic, as a woman may get different results depending on how her image is analysed. If these variations are reported, it is likely to cause confusion and unnecessary anxiety to women.

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 research suggests that[1]:

- 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 appear more fatty. A range of other factors also contribute to breast density such as hormones, Body Mass Index and genetics.

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

It is very difficult for women to know if they have dense breasts. There are a range of technologies that can be used to measure breast density, however there is currently no reliable method to identify breast density that is widely available to the breast screening and diagnostic community.

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

Information about a woman's breast density is intended to raise awareness and inform conversations with doctors to decide on appropriate screening options. In Australia, reporting of breast density is not mandatory. Some experts are concerned that telling women they have dense breasts without having clear medical advice about what, if anything, they should do, may only serve to raise women's anxiety. Others argue that women have a right to their personal cancer risk information, which they can only obtain from their mammograms.

6. Does breast density affect the accuracy of mammography?

Mammography is still the best breast cancer screening test for women, even with dense breast tissue.

[1] *Kerlikowske K, Ichikawa L, Miglioretti DL, et al. Longitudinal measurement of clinical mammographic breast density to improve estimation of breast cancer risk. J Natl Cancer Inst 2007; 99:386-395*
** Sprague BL, Gangnon RE, Burt V, et al. Prevalence of mammographically dense breasts in the United States. J Natl Cancer Inst 2014; 106*

Detecting breast cancer using mammograms can be more difficult in women with dense breasts. This is because dense breast tissue appears white on a mammogram, and so too does breast cancer. This means the cancer can be 'masked' by dense breast tissue, making it harder to see.

As breast density increases, the ability of mammography to show cancers generally decreases. As a result, women may be given an 'all clear' when there is a presence of cancer, or women may be recalled for further testing when there is no cancer present.

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

Research shows that increased breast density is associated with an increased risk of breast cancer. 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.

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

It is important for all women to be breast aware and to know the normal look and feel of their breasts. Interval cancers, which can develop in-between screening appointments can occur in women with dense breasts, so breast awareness is important particularly for these women. 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 have any additional tests?

Currently there is no consensus that supplemental screening is warranted for women with dense breasts. Extra tests may be considered by doctors, but there is no standard recommendation for extra screening tests for women with dense breasts. 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 (a woman is told she has cancer when there is no cancer present) and psychological distress.

9. Should women with dense breasts have screening mammograms?

Yes. Mammography is still the best breast cancer screening test for women, even with dense breast tissue. Mammography is also the only screening tool that has been demonstrated to lower breast cancer mortality. The BreastScreen Australia program has been found to reduce breast cancer mortality by around 21-28% for women 50-69 years of age.[1]

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

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

Currently the best way for women 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. BreastScreen Australia will continue to assess the evidence about measuring 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 women, regardless of breast density.

[i] BreastScreen Australia Evaluation Final Report, 2009

Other references yet to be incorporated