The Royal Australian and New Zealand College of Radiologists®

Breast Density Position Statement

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Approved by: **Faculty of Clinical Radiology Council**
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1. PURPOSE AND SCOPE

This Position Statement on Breast Density is intended to assist The Royal Australian and New Zealand College of Radiologists® (ABN 37 000 029 863) (the College), its staff, Fellows, Members, other health professionals and health consumers and to provide a current, evidence-based update on breast density.

2. INTRODUCTION

2.1 Breast Density is an important but complex topic, best considered during a discussion between the woman and her GP/specialist as part of an individualised and holistic approach to her health.

2.2 The College acknowledges and supports the extensive research that is currently being undertaken in relation to this rapidly evolving topic.

2.3 The College reporting guidelines for mammography recommend that breast density be listed in the mammogram report (1). This does not apply to the BreastScreen programmes in Australia or New Zealand, where a formal report is not issued.

3. DEFINITIONS

In this document:

College means The Royal Australian and New Zealand College of Radiologists

Member means a member of the College

Breast density means *mammographic breast density*

False Positive Results are findings on imaging that are not due to cancer and may result in unnecessary biopsies

4. BREAST DENSITY POSITION STATEMENT

Breast density is important for two reasons:

i. Breast cancers appear as white areas on a mammogram, so they may be masked or hidden by the white background in women with a higher breast density (2, 3)

ii. There is good evidence that breast density is an important risk factor for breast cancer, in addition to being a woman, getting older, having a family history of breast/ovarian cancer, being overweight, and drinking alcohol (4).

What is Breast Density?

i. The female breast is made up of glandular tissue, fibrous tissue and fat (4, 5).

ii. On a mammogram, glandular and fibrous tissue appears white and fat appears dark. The amount of white tissue (fibrous and glandular) seen on a mammogram is what is referred to as the breast density (3, 4, 6, 7).

iii. Breast density is not related to breast size and **cannot be determined by how they feel or by touch** or by clinical examination by a doctor (3, 4, 6, 7).

iv. Breast density varies widely in the population, but tends to be higher in younger women and to reduce with age (7).

v. Australian data shows that 66% of women below the age of 50 have BI-RADS Category c and d or dense breasts (see below). This reduces to 41% in the 50-75 yr age group and then to 33% over the age of 75 (1).

vi. Australian and New Zealand women have a one in eight chance of developing breast cancer by the age of 85 years. For women in the highest two density groups, the relative risk of developing breast cancer is approximately 1.2-2.1 times that of a woman of average breast density (BI-RADS category b). This level of risk is similar to that associated with having a first degree (close) relative diagnosed with breast cancer (7, 8).

How is Breast Density measured?

Breast density can be measured on a mammogram in two ways:

i. A radiologist viewing the mammogram estimates the percentage and distribution of white fibrous and glandular tissue present relative to the volume of the breast.

   Breast density is categorised into groups using the American College of Radiology Breast Imaging Reporting and Data System (BI-RADS),(9):

   a. The breasts are almost entirely fatty

   b. There are scattered areas of fibroglandular density

   c. The breasts are heterogeneously dense, which may obscure small masses

   d. The breasts are extremely dense, which lowers the sensitivity of mammography

ii. Using a software program that processes the raw information obtained when the mammogram is taken. This can give more consistent and reliable results as it takes into account the volume of the breast and is not influenced by the different image processing used by manufacturers of mammography machines (2, 5).

Researchers often group the two highest and the two lowest density groups together into “dense” and “non-dense” groups.

What Imaging is recommended for women with Dense Breasts?

- Mammography is the only screening test that in large randomised trials has been proven to reduce deaths from breast cancer, even in women with high breast density (3, 5).
- Systematic review of imaging literature (10) demonstrates that the addition of ultrasound to mammography increases cancer detection rates for women with dense breasts.
- Breast ultrasound, MRI and other imaging tools may increase cancer detection rates and be used to supplement mammographic screening in women with dense breasts. However, while additional cancers may be found, these tests may also cause harm through false positive results (requiring additional tests with associated cost, and anxiety from unnecessary biopsies) and none has been proven to reduce breast cancer deaths (3, 5).
- ***It is important to note that in women who have dense breasts but no other risk factors for breast cancer, there is no evidence that the benefits of additional imaging tests outweigh the harms (3).***

5. REFERENCES

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