

BREAST DENSITY – WHAT DOES IT MEAN?

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For some time it has been known that dense breasts are different. Radiologists have known for a long time that dense breasts make it more difficult to screen patients for breast cancer, but more recently we have learned that dense breasts also carry an increased risk of breast cancer.

SO WHAT EXACTLY ARE THESE DENSE BREASTS?

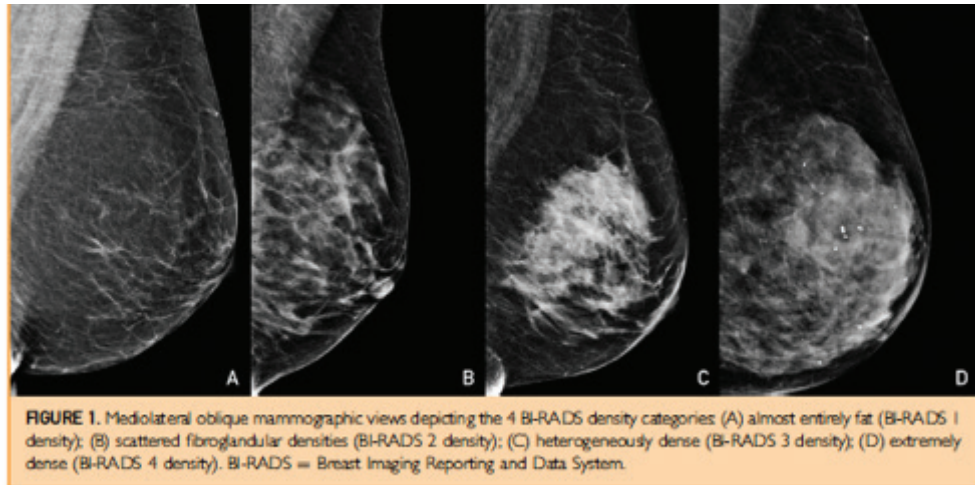
The Breast Imaging Reporting and Data System (BI-RADS), segregates breasts into 4 categories based on the amount and the pattern of glandular tissue present on a mammogram in relation to the fatty part of the breast.

The 4 categories are: (1)

1. Almost entirely fatty
2. Scattered areas of fibroglandular tissue
3. Heterogeneously dense, which may obscure small masses
4. Extremely dense, which may lower the sensitivity of the mammogram

The figure below shows increasing density from category 1 to category 4. Most patients fall in the category 2 and 3 with both having 40% of all women, whilst both extreme groups have 10% in each (1). Therefore, about 50% of women have what's considered as increased breast density.

Approximately 60% or more women under age 50 have dense breast tissue, as do 30% to 44% of women in their 60s and 25% to 36% of women in their 70s (2).



HOW MUCH EXTRA BREAST CANCER RISK IS ASSOCIATED WITH HIGHER DENSITY?

Compared to women with predominantly fatty breast tissue, women with extremely dense breasts have a 4 to 6 times increased risk for breast cancer (3), whilst if comparing the majority of women with heterogeneously or extremely dense breast tissue with women with average breast density, the relative risk is only approximately 1.2 and 2.1, respectively (4).

Compared with other known risk factors, extremely dense breast tissue is generally considered to place a woman at intermediate risk of breast cancer.

In addition, it has been known for a long time that increasing breast density has an increased propensity to mask underlying cancers, making it much more difficult to diagnose these cancers by mammography alone.

GIVEN THIS INFORMATION, WHAT SHOULD WE DO AND WHAT ARE THE OPTIONS AVAILABLE TO WOMEN IN THIS GROUP TO HELP MITIGATE THE INCREASED RISKS?

Technology has been driving progress in this area with development of digital mammography and subsequently of 3D Tomosynthesis mammography, which is slowly replacing the traditional 2D imaging of the breast.

Both of these have been shown to pick up more cancers, particularly in dense breasts, and more specifically more invasive cancers, as opposed to their precursors, which have a particular pattern on 3D imaging (5).

BUT IS IT ENOUGH? WHAT SHOULD YOU DO IF YOU HAVE A PATIENT WHO HAS BEEN SHOWN TO HAVE WITH CATEGORY 3 OR 4 BREAST DENSITY?

Currently the options are to also do a screening ultrasound of the breast or an MRI. Both have their pros and cons, but sufficing to say that in the screening setting ultrasound is the preferred modality for the moment, unless there are additional factors to take into account (5).

This may change, however, in the near future, as currently there are developments afoot for an abbreviated/fast MRI, which could be used in screening, which only takes 3 minutes to do and 1 minute to read (6). Once this is mainstream it will be a game changer.

For the moment, however, I strongly recommend considering supplemental screening with ultrasound for most women with dense breasts in addition to the 3D mammography screening.

References:

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Areas of interest include:

- Breast Cancer Surgery, including Oncoplastic Surgery
- Breast Cancer Reconstruction
- Aesthetic Breast Surgery, including Augmentation/Reduction/Lifts
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- Liposuction/Fat Grafting
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