Canadian Breast Cancer Network
Réseau canadien du cancer du sein

Understanding Breast Density

What are Dense Breasts?

Breast density refers to the breast tissue and how much of that tissue is either fatty, fibrous, or glandular[1]. Glandular tissue is made up of the lobules and ducts that produce and contain milk. Fibrous and fatty tissue holds glandular tissues in place and gives the breast its shape. The greater the glandular or fibrous tissue, the denser the breast tissue is. Research shows that about 41 to 50% of breasts have dense tissue, which we commonly refer to as dense breasts[2]. Breast tissue density can range from almost entirely fatty to almost entirely glandular. Both types of tissue are normal.

Only a mammogram can detect if breasts are dense or not. Based on mammography results, breast density falls into four categories, from category A to D. When radiology reports share breast density information, it relates to the breast density category (A to D). Radiologists consider category A and B fatty breasts because they have very little dense tissue. Category C and D are considered dense breasts because 50% or more of the breast tissue is dense[3].

You cannot determine breast density by size, firmness, look, or feel of the breast. Breast density is based on the amount of fibroglandular tissue, not the breast's appearance or feel[4]. This means that any lumps or lumpiness in your breasts are not caused by your breast density. This is true whether you have dense breasts or not. Any lumps, bumps, thickening or lumpiness should be examined by a medical professional, regardless of breast density.

Dense breasts occur in all age groups, but for most people, density tends to decrease with age. This means it's more common for younger people to have dense breasts. Those with a lower body mass index tend to have less fatty tissue in their breasts. This also increases the likelihood of having dense breasts. Finally, hormone replacement therapy for menopause increases the chance of having dense breasts[5].

Why is Knowing your Breast Density Important?

Knowing your breast density is important because it is a risk factor for developing breast cancer. The denser the breast tissue, the greater the chance of developing breast cancer. Women with dense breasts have two times higher risk of developing breast cancer than women with non-dense beasts. Having dense breasts is equivalent to having a first-degree relative with breast cancer.

Dense breasts also impact mammograms' effectiveness. Mammograms are 85% sensitive at detecting breast cancer in all women and are the standard of care for breast cancer screening. However, dense breast tissue and cancerous tissue both appear white on a mammogram. Consequently, the effectiveness of mammograms drops to between 47 and 64% in dense breasts. In extremely dense breasts (category D), the sensitivity drops to 30 to 40%[6].

Since mammograms are less sensitive in dense breasts, screening guidelines for people with dense breasts are unclear; mammography may still be done for people with dense breasts, but supplemental screening may be needed. To learn about the screening guidelines where you live, visit our website. It is very important to recognize that if you

have dense breasts, your mammogram may be normal, but it may miss breast cancer. If you have any new breast problem such as a lump or other symptom of breast cancer, you should bring this to the attention of your family physician, who should request a breast ultrasound.

Although breast density affects screening and risk of developing breast cancer, it does not affect treatment. People with dense breast tissue are no more likely than people with fatty breast tissue to die from breast cancer. Breast density only relates to breast tissue and risk of developing breast cancer, not the type or severity of the cancer[3].

What are the Screening Options for Dense Breasts?

The best screening option will depend on your overall risk of developing breast cancer, with one risk factor being breast density. People with dense breasts may need regular mammograms more often. Physicians may also recommend supplemental MRI, digital breast tomosynthesis (also called a 3D mammogram) or ultrasound for people with dense breasts.

MRI, digital breast tomosynthesis, and ultrasound are all effective at detecting cancer in dense breasts, but MRI is the most effective. When MRI is not available, handheld ultrasound is the next best choice for supplemental dense breast screening because it is the most widely available option[6]. Although written for screening after breast cancer, our advocacy guide gives you more information about breast cancer screening.

References

1 Thigpen, D., Kappler, A., Brem, R. (2018, March). The role of ultrasound in screening dense breasts—A review of the literature and practical solutions for implementation. *Diagnostics* 2018; 8(1): 20.

2 Canadian Cancer Society (2024). Breast density.

3 National Cancer Institute (2024). Dense breasts: Answers to commonly asked questions.

4 My Breast Screening and Dense Breasts Canada (n.d.). Breast screening advocacy toolkit.

5 U.S. Centers for Diseases Control and Prevention (2023). About dense breasts.

6 Hussein, H., et al. (2023). Supplemental breast cancer screening in women with dense breasts and negative mammography: A systematic review and meta-analysis. *Radiology* 306(3).

Self-Advocacy for Dense Breasts

Physicians have recognized the importance of effective breast cancer screening for decades. Yet, evidence for the best screening in dense breasts is lagging and needs more research[1]. Dense breasts are common, and we need to address this risk factor[2]. It's important that screening is evidence-based to ensure early detection and appropriate treatment.

First, be aware of your breast density by checking your radiology report or online portal. You can use the breast density category listed there to help determine your risk of developing breast cancer. If you have an upcoming mammogram, speak to the radiologist about dense breasts. Ask them what information you will be receiving about your breast density category. You can also ask what the next steps would be if you are determined to have dense breasts (category C or D). Once you know your breast density category, you can read our advocacy guide on screening after a breast cancer diagnosis for information on surveillance screening.

The next advocacy step you can take is to learn what your most appropriate screening option would be. Breast density is just one risk factor for developing breast cancer, but it also reduces mammogram accuracy. Speak with your health care provider about your breast density to help assess your overall risk of developing breast cancer. Visit cancer.ca to learn more about the other risk factors associated with breast cancer.

We also need to advocate for national standards and guidelines for research, notification, and screening options for those with dense breasts. To ensure that these standards are evidence-based, you can ask the government to invest in research to determine what the proper screening methods are for individuals with dense breasts. This can be done by contacting your member of parliament (MP), or member of provincial parliament (MPP). They can be your partner in advocacy by writing a letter to the minister of health on your behalf or speaking about breast density in the House of Commons. You can also contact the Canadian Task Force on Preventative Health Care and ask for breast cancer screening guidelines to take breast density into account.

Finally, sharing your story can be a form of advocacy. Personal narratives are a great way to bring awareness to an issue. Stories can show the human impact of current gaps in the healthcare system. Stories can also encourage others to get informed and act on their own health risks. If you have dense breasts, consider sharing your story on CBCN's blog titled *Our Voices*. You can read some personal narratives others have shared here and you can learn about how to write your own story here.