Breast density, what does it mean for you

What does “Breast Density” mean?

Breast density has to do with how “white” your mammogram looks. The whiteness of the mammogram has to do with how much breast tissue is there. Breast tissue is made up of ducts and lobules, and the more ducts and the more lobules there are in your breast tissue the denser your breast will appear or the whiter it will appear on mammography. Because of that density, sometimes cancers can be obscured or hidden. Cancers tend to be white on mammograms so if your breast tissue is dense, that means the breast density can hide the cancer.

How do radiologists classify breast density?

Because of the importance of breast density, radiologists have developed a way to categorize density to be more consistent in how it is reported, and therefore allow surgeons to use the information in caring for their patients. Breast density is categorized as A, B, C or D.

- Class A: Almost entirely fat, very low density.
- Class B: Scattered areas of fibroglandular tissues and densities. While the word “density” is in that category, it is not considered dense breast tissue.
- Class C: Heterogeneously dense. This tissue is denser than usual throughout the breast and therefore breast density would be considered increased.
- Class D: Extremely dense.

Only category C and D are considered dense by radiologists and surgeons.

Why do doctors inform women about their breast density?

Many women have been getting mammograms for a long time, and yet have not heard about breast density until recently. Breast density has always been looked at on mammography but not considered overly important within the medical world. However, now there is a push to inform women of their density that is more political or social. Recently a patient in Connecticut had been diagnosed with a cancer that was relatively advanced. When she asked her physician why the cancer was not found on mammography sooner, she was told that her breast tissue was “dense.” She’d never heard this before and became very active in trying to get legislation passed in multiple states to inform women of their density. At this point in time about 20 states in the US have enacted breast density legislation. There is now even a push for a federal law to inform women of their breast density.
**Why should I be concerned about breast density?**

Because cancers appear white on mammography, when a woman has dense breast tissue the cancer can often be hidden by that denser breast tissue. We’ve known about this for a long time. More recently with the advent of digital mammography and 3-D mammography, we find that breast density becomes less important because the digital films and the 3-D films can often see the cancers despite the fact that they look very similar to the dense tissue. That being said, dense mammograms can be harder to read than non-dense. Women with denser breast tissue should be aware of that.

**Does having dense breasts increase my risk of breast cancer?**

There has been some suggestion that women with dense breast tissue are at a higher risk of developing cancer. We’re not sure that’s completely true. Women who are very young have a lot of breast tissue and therefore have very dense mammograms, yet young women have a lower risk of breast cancer than older women who have very non-dense mammograms. Just looking at density in isolation doesn’t tell you what your risk of breast cancer might be.

On the other hand, we have a way of predicting what density should be in a woman by looking at her age and her weight. By knowing both of these, we can guess what the density should be. How different the women’s actual density is from what we anticipated may predict risk. That is to say if a woman should have low density breasts and yet has very high density breasts, she may be at higher risk. On the other hand a woman who has very dense breast tissue but is predicted to have very dense breast tissue may have no increased risk. Taking density in isolation is not the right approach. We need to look at the density compared to what the density should be.

**Do I need any additional screening tests?**

If your breast tissue is dense you might think you need additional studies done to try to do better than just basic mammography. The additional studies we have - Magnetic Resonance Imaging (MRI) or whole breast ultrasound - can find cancers earlier, but they also find stuff that isn’t real. Because of that we don’t recommend these additional studies unless a woman is at a high risk of breast cancer. For women at average risk, even with breast density that is high, we still recommend only digital plus 3-D mammography.
How do you determine if someone is at high risk for breast cancer?

To think about what your risk of breast cancer is we look at age, family history, and other risk factors. Family history is extremely important because there are genes that can cause breast cancer, especially BRCA1 and BRCA2. If a woman has a strong family history - multiple relatives with breast or ovarian cancer, a young age at diagnosis in those relatives (breast cancer in their 20’s or 30’s), has multiple cancers in a single relative (an aunt with bilateral breast cancer or breast and ovarian cancer), or if there are men in the family with breast cancer - we think about that woman as being at high risk and recommend genetic testing.

Other risk factors that are less important but are still something to think about include: how old you were when you had your period (the older, the lower the risk); how old you were when you had your first child (the younger, the less the risk); a pathologic diagnosis such as a biopsy showing atypical ductal hyperplasia. What this means is your breast is at higher risk and is showing it by showing this abnormality. Even though it is not cancer, it does increase your risk.

To determine your risk we take these various factors and bring them together in what are called risk models. The models take these factors, weight them differently, and come up with a calculation of what your risk is. The reason this is important is that level of risk helps us determine whether or not MRI is useful. For women at the highest risk (we consider that over 20% risk of cancer in their lifetime), the American Cancer Society recommends MRI screening in addition to mammography.

What is gene mutation testing/when is gene mutation testing done?

In some families there is a gene mutation that increases the risk of cancer. The most common genes are BRCA1 and BRCA2. For women with a strong family history we recommend genetic testing to look at these and other genes. Genetic testing can tell you whether or not a mutation is present in one of the major genes that cause cancer. If a mutation is present it helps us to know what risk there is for the individual patient. For a woman with BRCA1 mutation, her risk of breast cancer and ovarian cancer can be quite high. For this reason, genetic testing is now becoming very common. We offer it here at Massachusetts General Hospital after appropriate counseling to be sure the patient understands why we’re doing the testing and the implications. Overall, genetic testing can be extremely useful in the face of a strong family history to help us determine how best to care for you and help prevent cancer in the future.

Who should I contact to learn more about breast density and my breast cancer risk?

Remember, breast density is very common. About 40-50% of women who get a mammogram will be told their breasts are dense. If you’re told your breasts are dense, do not panic. By all means, however, you should know your personal risk level of developing breast cancer and your risk of having a gene mutation. When you talk to your primary care doctor, surgeon, or breast imager ask about your level of risk and whether additional screening is appropriate for you. That’s true regardless of your density. If you have questions about your breast density or your breast cancer risk, we’re happy to answer them here at the Massachusetts General Hospital and can make an appointment to help you to do that.