Dense Breasts



Breast density is a proportional measure of the glandular, connective and fatty tissues within a woman's breasts. It is most commonly determined using mammography, a diagnostic test that uses low dose x-rays. Having dense breasts is not an abnormal condition; in fact, about half of all women over 40 have dense breasts.

The exact relationship between breast density and breast cancer is still unknown, but having dense breasts may increase your risk of developing breast cancer. There is no clear evidence that reducing breast density will reduce your risk of breast cancer. Talk with your doctor about breast density and discuss what impact that may have on your breast cancer screening regimen.

What are dense breasts?

Breast density is a measure of the proportion of glandular, connective and fatty tissue within a woman's breasts, which is most commonly determined through mammography.

The breast is made up of glandular, connective, and fatty tissues. Breasts are considered to be dense if they have a lot of glandular and connective tissue and not much fatty tissue. On a mammogram, fatty tissue appears dark (radio-lucent) and the glandular and connective tissues appear white (radio-opaque). Essentially, the "whiter" the breast appears on the mammogram, the denser the breast.

Glandular tissue includes lobules (which produce milk during lactation) and ducts that carry milk from the lobules to the nipple during breastfeeding. Connective tissue (also called fibrous tissue), supports and holds glandular tissue in place. Fatty tissue helps give breasts their size and shape.

It is unclear why some women have dense breasts and others do not. In general, younger women tend to have denser breasts, and some post-menopausal women may lose breast density as a result of hormonal changes experienced during menopause. However, some younger women may have fatty breasts while some elderly women have dense breasts. Much of what determines a woman's breast density is likely genetic. But diet, nutrition, weight gain or loss, and hormonal factors also affect a woman's breast density.

About fifty percent of all women over 40 years old have dense breast tissue, which is normal.

The exact relationship between breast density and breast cancer is still under study with many unknowns. On a mammogram, it is easier to detect an underlying cancer in women with fatty breasts and harder to detect an underlying cancer in women with dense breasts. This is because the dense normal tissue – which appears white on the mammogram – may hide an underlying cancer that also appears white on a mammogram. Also, having dense breasts may be associated with a small increased risk of developing breast cancer.

How are dense breasts evaluated?

Mammography is used most commonly to determine whether a woman has dense breasts.

Copyright© 2026, RadiologyInfo.org

- Mammography (https://www.radiologyinfo.org/en/info/mammo) : A diagnostic test that uses low dose x-rays to examine the breasts. This type of imaging involves exposing the breasts to a small amount of ionizing radiation to obtain pictures of the inside of the breasts. *See the Safety page (https://www.radiologyinfo.org/en/info/safety-xray) for more information about x-rays.*

Radiologists who interpret mammograms subjectively determine the proportion of dense breast tissue (white on mammography) and non-dense fatty tissue (dark on mammography) using a visual scale and assign one of four levels of breast density:

- Almost entirely fatty breast: The breast is almost entirely composed of fatty tissue.
- Scattered areas of fibroglandular density: The majority of the breast is fatty tissue with some scattered areas of dense breast tissue.
- Heterogeneously dense: The majority of the breast is dense glandular and fibrous tissue with some areas of less dense fatty tissue.
- Extremely dense: The breast is almost all dense glandular and fibrous tissue.

The majority of women (8 out of 10) are classified in one of the two middle categories. Only a small fraction of women have either extremely dense breasts, or breasts that are almost entirely fat.

For most purposes, women whose breasts are classified as heterogeneously dense or extremely dense are considered to have dense breasts. Some states have enacted breast density notification laws that require women to be informed when a mammogram indicates that she has dense breasts.

If your mammography report indicates that you have dense breasts, you should talk with your doctor about what this means for you and whether or not you should consider supplemental screening.

Additional tests

Other imaging tests may help find breast cancers that cannot be seen in dense breasts during a mammography exam. If you have dense breasts, you and your doctor may consider supplementing your annual mammogram with one or more of the following imaging tests to screen for breast cancer. However, most women with an average risk of breast cancer and dense breasts do not require any supplemental screening.

- *Breast tomosynthesis*, also called three-dimensional (3-D) mammography and digital breast tomosynthesis (DBT), is an advanced form of breast imaging being used by many healthcare providers to examine breasts. In breast tomosynthesis, multiple images of the breast are captured from different angles and reconstructed or "synthesized" into a three-dimensional image set.

  Large population studies have shown that screening with breast tomosynthesis results in improved breast cancer detection rates and fewer "call-backs" in which women are called back for additional testing because of an abnormal finding. Early studies suggest that tomosynthesis may be beneficial in women with dense breasts. *See the Breast Tomosynthesis (https://www.radiologyinfo.org/en/info/tomosynthesis) page for more information*

- Breast ultrasound (https://www.radiologyinfo.org/en/info/breastus) uses sound waves to capture images of areas of the

Copyright© 2026, RadiologyInfo.org

breast that may be difficult to see with mammography. It can also help to determine whether a breast lump (https://www.radiologyinfo.org/en/info/breastlumps) is solid or fluid. Although breast ultrasound may help to find cancer in women with dense breasts, there are a large number of false positive exams (exams that show a potential abnormality that may even need a biopsy, but proves to not be cancer), and breast ultrasound does not have the same evidence supporting its benefit in screening as mammography does. Most women with dense breasts and a low or average risk of breast cancer do not require supplemental screening with ultrasound.

- Breast MRI (https://www.radiologyinfo.org/en/info/breastmr) is performed using a powerful magnetic field, radio frequency pulses and a computer to produce detailed pictures of the inside of the breasts. MRI may detect some smaller cancers than cannot be found on ultrasound, mammogram, or tomosynthesis, and is particularly useful in women who are at high risk of breast cancer.

How are dense breasts treated?

There are currently no recommendations for reducing breast density, and there is no clear evidence that reducing breast density will reduce breast cancer risk. Talk with your doctor about whether you have dense breasts and how that may impact your breast cancer screening regimen.

Which test, procedure or treatment is best for me?

- *Breast Cancer Screening (https://www.radiologyinfo.org/en/info/acs-breast-cancer-screening)*
- *Breast Imaging of Pregnant and Lactating Women (https://www.radiologyinfo.org/en/info/acs-breast-imaging-pregnant-lactating)*
- *Supplemental Breast Cancer Screening Based on Breast Density (https://www.radiologyinfo.org/en/info/acs-bc-screening-breast-density-based)*

Disclaimer

This information is copied from the RadiologyInfo Web site (http://www.radiologyinfo.org) which is dedicated to providing the highest quality information. To ensure that, each section is reviewed by a physician with expertise in the area presented. All information contained in the Web site is further reviewed by an ACR (American College of Radiology) - RSNA (Radiological Society of North America) committee, comprising physicians with expertise in several radiologic areas.

However, it is not possible to assure that this Web site contains complete, up-to-date information on any particular subject. Therefore, ACR and RSNA make no representations or warranties about the suitability of this information for use for any particular purpose. All information is provided "as is" without express or implied warranty.

Please visit the RadiologyInfo Web site at **http://www.radiologyinfo.org** to view or download the latest information.

Note: Images may be shown for illustrative purposes. Do not attempt to draw conclusions or make diagnoses by comparing these images to other medical images, particularly your own. Only qualified physicians should interpret images; the radiologist is the physician expert trained in medical imaging.

Copyright

This material is copyrighted by either the Radiological Society of North America (RSNA), 820 Jorie Boulevard, Oak Brook, IL 60523-2251 or the American College of Radiology (ACR), 1891 Preston White Drive, Reston, VA 20191-4397. Commercial reproduction or multiple distribution by any traditional or electronically based reproduction/publication method is prohibited.

Copyright ® 2026 Radiological Society of North America, Inc.