

Mammogram

A mammogram is an X-ray image of the breast. Mammography is the tool that uses X-rays to create mammograms. It is used to find early signs of breast cancer.

Images of the breast can be captured on film (standard) or on a computer (digital). For women with dense breast tissue, digital may be more accurate than standard.

When other imaging methods are needed

Sometimes a lump or other breast problem will not show up on a mammogram. Or the image might not give your doctor enough information. In these cases, your doctor may suggest a different imaging method to get a better picture.

Along with a mammogram, other imaging tests can provide helpful information. *Ultrasound* and breast *magnetic resonance imaging (MRI)* are used most often. These tests give your doctor another breast image. These images may help your doctor make a diagnosis.

These tests are not always able to tell the difference between dense breast tissue, benign (non-cancerous) lumps and cancer. Sometimes they miss tiny calcium deposits that may be an early sign of a tumor. In some cases, screening tests can cause a “false positive.” This could lead to more tests. A false positive is when a test finds something that looks like cancer, but isn’t. Despite their limitations, these tests play a vital role in breast cancer detection and diagnosis.



Ultrasound is safe and painless.

Ultrasound (or sonogram)

Ultrasound uses sound waves to make images of the breast. It is often used as a follow-up test after an abnormal finding on a mammogram, breast MRI or clinical breast exam. Ultrasound is mostly used on pregnant women to look at a growing baby. When used on the breast, it can tell the difference between types of lumps, such as liquid-filled cysts and a solid mass. Doctors use this to find out the size, shape, texture and density of a breast lump.

Breast MRI

A breast MRI uses magnetic fields to create an image of the breast. It can sometimes find cancers in dense breasts that are not seen on mammograms. Breast MRI is often used with mammography for screening some women at a high risk of breast cancer. However, it can be costly and often finds something that looks abnormal, but turns out to be benign (false positive).

Other imaging methods

A number of other imaging tests are available. They have not yet been proven to work well enough for routine use. At present, they are used mainly in research studies. Sometimes they are used to get more information about a tumor found by another test. Each of these tests creates an image that is used to show an abnormal breast finding. New and improved technology in the future may play a role in screening, detection or even monitoring of breast cancer.

Scintigraphy [sin-TĭG-ra-fĕe]

Also called *scintimammography*, this test uses a special camera to show where a *tracer* (a radioactive chemical) has collected inside a tumor. A scanner is then used to see if the breast lump has picked up more of the radioactive material than the rest of the breast tissue.

Lymphatic mapping

This test also uses a special camera and scanner to see where a tracer has collected. It is used to locate sentinel lymph nodes for cancer staging.

PET scan

Cancer cells grow faster than other cells, so they use energy faster, too. To measure how fast glucose (the body's fuel) is being used, a *tracer* (radioactive glucose) is injected into the body. The body is then scanned with a positron emission tomography (PET) machine. The PET machine detects how fast the glucose is being used. If it is being used up faster in certain places, it may show the presence of cancer.

Stereotactic imaging

This special type of mammography machine is used during a biopsy. After mammogram images locate the exact area of concern, a computer merges the pictures to make a 3D image of the breast. The image is used to guide a biopsy needle to the suspicious area of the breast.

Ask your doctor

Before you have an imaging test, ask your doctor why you are having it. Here are some questions to ask:

- Why do you recommend that I have this test?
- How accurate is the test?
- When and how will I get the results?
- If a problem is found, what will we do next?
- Will my insurance cover it?

Related fact sheets in this series:

- Coping with a Cancer Diagnosis
- Biopsy
- Mammography
- When the Diagnosis is Cancer — An Overview