

When a mammogram is not enough

Although it is the best screening method widely available for finding breast cancer early, a mammogram (an X-ray picture of the breast) is not the only way a doctor can look at an image of your breast. Sometimes a lump or other breast problem will not show up on the mammogram. Or the mammogram might not give your doctor enough information. In these cases, your doctor may recommend a different method in order to get a better picture.

Other imaging tests can provide valuable information that a mammogram cannot. Of these methods, *ultrasound* is used most often. *Magnetic resonance imaging* (MRI), *positron emission tomography* (PET) and *scintigraphy* are used less often. All of these tests give your doctor an image of your breast. This image can be analyzed to 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. And, sometimes they miss tiny calcium deposits that may be the earliest sign of a tumor. In some cases, these tests might cause a “false alarm” and may lead to more tests. But despite their limitations, these tests — especially ultrasound — can play a useful role in breast cancer diagnosis.



Ultrasound is safe and painless.

Ultrasound (or sonogram)

Ultrasound is commonly used with pregnant women to look at a developing baby. When used on the breast, it can tell the difference between types of lumps, such as liquid-filled cysts and solid masses. Doctors use ultrasound to find out the size, shape, texture and density of a breast lump.

When getting an ultrasound, the doctor or technologist will first spread a thin layer of gel over your breast. Then the doctor will guide the ultrasound device back and forth across the breast. This device sends out sound waves that you cannot hear or feel. The sound waves make different kinds of echoes when they bounce off various types of tissue in your body. A computer converts the echoes to a picture on a video screen. The test is safe, painless and uses no radiation.



Imaging methods

A number of new imaging methods are now available for detecting breast cancer. However, because they are new, they have not been proven to work well enough for routine use. At present, they are used mainly in research studies, and sometimes to get more information about a tumor found by another method. Each of these new methods generates a computerized image that the doctor can analyze for the presence of an abnormal breast lump.

Scintigraphy [sin-TĪG-ra-fee]

Also called *scintimammography*, this test uses a special camera to show where a *tracer* (a radioactive chemical) has been taken up and 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.

MRI

A magnetic resonance imaging (MRI) machine uses a large magnet and radio waves to measure several properties of tissue in your body. It makes precise images of the breast and can sometimes detect cancers in dense breasts that are not seen on mammograms. MRI can also be used to see if a silicone breast implant has leaked or ruptured.

PET scan

Cancer cells grow faster than other cells, so they use up energy faster, too. To measure how fast glucose (the body's fuel) is being used, a *tracer* (radioactive glucose) is injected into the body and 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 indicate the presence of a cancerous tumor.

Stereotactic imaging

This special type of mammography machine is used during a biopsy. After mammograms are taken from different angles to locate the exact position of a breast abnormality, a computer merges the pictures to make a three-dimensional image of the breast. The image is used to precisely guide a biopsy needle to the suspicious area of the breast.

Resources

National Cancer Institute. Cancer Facts.
http://cis.nci.nih.gov/fact/5_14.htm

Dr. Susan Love's Breast Book, 3rd ed., by Susan M. Love with Karen Lindsey. 2000 (Addison-Wesley).
See Chapter 11.

Ask your doctor

Before you have an imaging test, be sure to find out why you are having it and how much it will cost. Here are some questions you may want to ask your doctor:

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

Related fact sheets in this series:

- mammography
- when the diagnosis is cancer — an overview
- coping with a cancer diagnosis

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