

# Mammography



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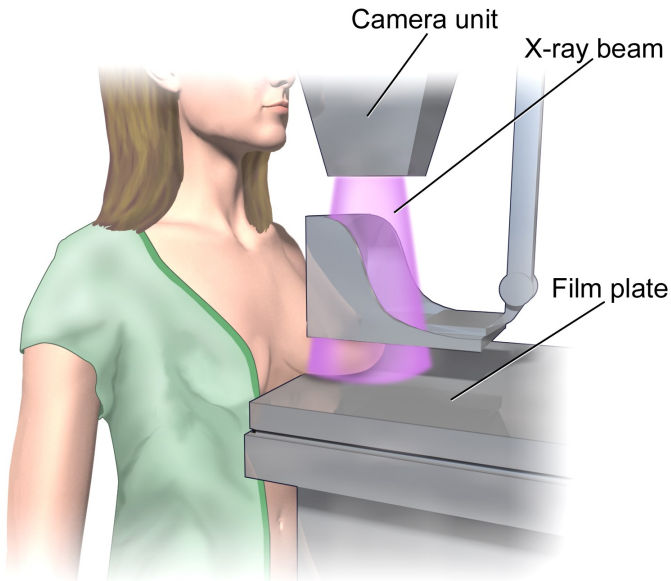


*St. Maarten Medical Center*

## What is Mammography?

Mammography is specialized medical imaging that uses a low-dose x-ray system to see inside the breasts. A mammography exam, called a mammogram, aids in the early detection and diagnosis of breast diseases in women.

An x-ray (radiograph) is a noninvasive medical test that helps radiologists diagnose and treat medical conditions. Imaging with x-rays involves exposing a part of the body to a small dose of ionizing radiation to produce pictures of the inside of the body. X-rays are the oldest and most frequently used form of medical imaging.



**Digital mammography**, also called full-field digital mammography (FFDM), is a mammography system in which the x-ray film is replaced by electronics that convert x-rays into mammographic pictures of the breast. These systems are similar to those found in digital cameras and their efficiency enables better pictures with a lower radiation dose. These images of the breast are transferred to a computer for review by the radiologist and for long term storage. The patient's experience during a digital mammogram is

similar to having a conventional film mammogram.

**Computer-aided detection (CAD)** systems search digitized mammographic images for abnormal areas of density, mass, or calcification that may indicate the presence of cancer. The CAD system highlights these areas on the images, alerting the radiologist to carefully assess this area.

## What are some common uses of the procedure?

Mammograms are used as a screening tool to detect early breast cancer in women experiencing no symptoms. They can also be used to detect and diagnose breast disease in women experiencing symptoms such as a lump, pain, skin dimpling or nipple discharge.

### Screening Mammography

Mammography plays a central part in early detection of breast cancers because it can show changes in the breast up to two years before a patient or physician can feel them. Research has shown that annual mammograms lead to early detection of breast cancers, when they are most curable and breast-conservation therapies are available.

### Diagnostic Mammography

Diagnostic mammography is used to evaluate a patient with abnormal clinical findings—such as a breast lump or nipple discharge—that have been found by the woman or her doctor. Diagnostic mammography may also be done after an abnormal screening mammogram in order to evaluate the area of concern on the screening exam.

## How should I prepare for the mammogram?

Before scheduling a mammogram you discuss any new findings or problems in your breasts with your doctor. In addition, inform your doctor of any prior surgeries, hormone use, and family or personal history of breast cancer.

Do not schedule your mammogram for the week before your menstrual period if your breasts are usually tender during this time. The best time for a mammogram is one week following your period. Always inform your doctor or x-ray technologist if there is any possibility that you are pregnant.

It is recommended that you:

- Do not wear deodorant, talcum powder or lotion under your arms or on your breasts on the day of the exam. These can appear on the mammogram as calcium spots.
- Describe any breast symptoms or problems to the technologist performing the exam.
- Obtain your prior mammograms and make them available to the radiologist if they were done at a different location. This is needed for comparison with your current exam and can often be obtained on a CD.
- Ask when your results will be available; do not assume the results are normal if you do not hear from your doctor or the mammography facility.

## How is the procedure performed?

Mammography is performed on an outpatient basis.

During mammography, a specially qualified radiologic technologist will position your breast in the mammography unit. Your breast will be placed on a special platform and compressed with a clear plastic paddle. The technologist will gradually compress your breast.

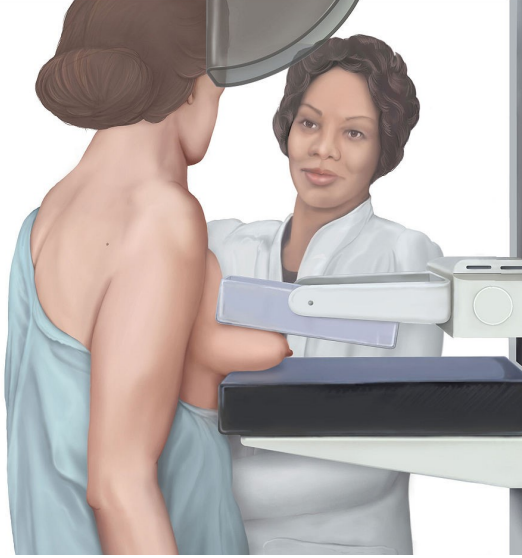
Breast compression is necessary in order to:

- Even out the breast thickness so that all of the tissue can be visualized.
- Spread out the tissue so that small abnormalities are less likely to be hidden by overlying breast tissue.
- Allow the use of a lower x-ray dose since a thinner amount of breast tissue is being imaged.
- Hold the breast still in order to minimize blurring of the image caused

by motion.

- Reduce x-ray scatter to increase sharpness of picture.

You will be asked to change positions between images. The routine views are a top-to-bottom view and an angled side view. The process will be repeated for the other breast.



You must hold very still and may be asked to keep from breathing for a few seconds while the x-ray picture is taken to reduce the possibility of a blurred image. The radiology technician will walk behind a wall or into the next room to activate the x-ray machine.

When the examination is complete, you may be asked to wait until the radiologist determines that all the necessary images have been obtained.

The examination process should take about 30 minutes.

## **What will I experience during and after the procedure?**

You will feel pressure on your breast as it is squeezed by the compression paddle. Some women with sensitive breasts may experience discomfort. If this is the case, schedule the procedure when your breasts are least tender.

Be sure to inform the technologist if pain occurs as compression is increased. If discomfort is significant, less compression will be used. Always remember compression allows better quality mammograms.

## Who interprets the results and how do I get them?

The radiologist, specifically trained to supervise and interpret radiology examinations, will analyze the images and send a signed report to your General physician, who will discuss the results with you.

Follow-up examinations may be necessary. Your doctor will discuss this with you.

## What are the limitations of Mammography?

Initial mammographic images themselves are not usually enough to determine the existence of a benign or malignant disease with certainty. If a finding or spot seems suspicious, your radiologist may recommend further diagnostic studies.

Interpretations of mammograms can be difficult because a normal breast looks different for each woman. Also, the appearance of an image may be compromised if there is powder or salve on the breasts or if you have undergone breast surgery. Because some breast cancers are hard to visualize, a radiologist may want to compare the image to views from previous examinations. It is very important to realize that not all breast cancers can be seen on mammography.

Increased breast density has attracted attention from a number of state legislatures for multiple reasons, including:

- Increased breast density makes it difficult to see a cancer on mammography.
- Increased breast density may increase the risk of getting breast cancer.

The radiologist reading your mammogram determines your breast density and reports it to your doctor. Some states also require the facility to notify you if you have dense breasts.

Breast implants can also impede accurate mammogram readings because both silicone and saline implants are not transparent on x-rays and can block a clear view of the tissues behind them, especially if the implant has been placed in front of, rather than beneath, the chest muscles. Experienced technologists and radiologists know how to carefully compress the breasts to improve the view without rupturing the implant.

When making an appointment for a mammogram, women with implants should ask if the facility uses special techniques designed to accommodate them. Before the mammogram is taken, they should make sure the technologist is experienced in performing mammography on patients with breast implants.

While mammography is the best screening tool for breast cancer available today, mammograms do not detect all breast cancers. This is called a false negative result. On the other hand, when a mammogram looks abnormal and no cancer is present, this is called a false-positive result.

Research is being done on a variety of breast imaging techniques that can contribute to the early detection of breast cancer and improve the accuracy in distinguishing non-cancerous breast conditions from breast cancers.

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