

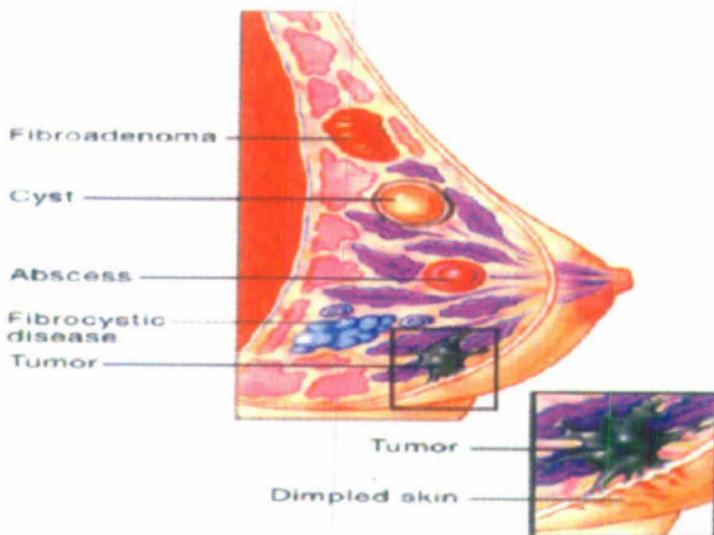


SAIFEE HOSPITAL

under the auspices of Saifee Hospital Trust Reg. No. E-5448 (Bom)

DEPARTMENT OF NUCLEAR MEDICINE

Breast Imaging Patient Information (Scinti Mammography)



Using nuclear medicine to look for Breast

The breast refers generally to the front of the chest and medically specifically to the mammary gland. The mammary gland is a milk-producing structure that is composed largely of fat cells (cells capable of storing fat). The fat deposits are laid down in the breast under the influence of the female hormone, estrogen. Just as the surge of estrogen at adolescence encourages this process, androgens, such as testosterone, discourage it.

Within the mammary gland there is a complex network of branching ducts (tubes or channels). These ducts exit from sac-like structures called lobules.

The lobules in the breast are the glands that can produce milk in females (or rarely in males) given the appropriate hormonal stimulation.

The breast ducts transport milk from the lobules out to the nipple. The ducts exit from the breast at the nipple.

What is a scinti mammography scan?

Scinti mammography employs a radioactive tracer, Technetium 99m Tetrofosmin myoview, injected into a vein to identify abnormal cells based on the difference in metabolic characteristics between cancer cells and non cancerous cells. The localization of the tracer can be imaged using sensitive detection devices.

Who is it for?

Scintimammography is an imaging technique that uses a radioisotope (a radioactive substance) to help visualize the breast. This imaging technique can detect breast cancer sometimes in situations in which there is considerable uncertainty, as with dense breast tissue.

Dense breast tissue is particularly difficult to decipher by standard mammography. As a consequence, women with dense breasts have an unusually high incidence of false positives with standard mammography -- test results that appear "falsely" positive in the absence of cancer. The false positives lead to unneeded biopsies and anxiety.

Scintimammography with technetium tetrofosmin (Tc-99 tetrofosmin) is especially valuable in these women with dense breasts, who tend to be young women before the menopause.

Breast malignancies typically show increased uptake of the Tc-99 tetrofosmin as compared to benign growths. In one study, the Tc-99 tetrofosmin test had an accuracy of nearly 90%, while standard mammography yielded a significantly lower value.

How do you prepare?

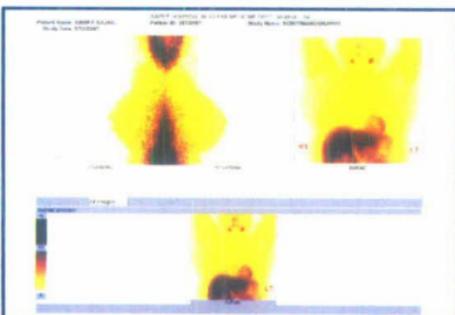
- No preparation is necessary for the test. You may eat, drink, and take your medications as usual before the test.
- You will be asked to sign a consent form that gives your permission to do the procedure. Read the form carefully and ask questions if something is not clear. Notify the nuclear medicine physician if you are allergic to or sensitive to medications contrast dyes, or iodine.
- If you are pregnant or suspect you may be pregnant, you should notify your physician.
- Based upon your medical condition, your physician may request other specific preparation.

How is it done?

A small amount of a radioactive tracer is injected into an arm vein, like taking a blood sample, only the tracer is injected instead of having blood removed. No injection is made in the breast. Occasionally, for reasons of clarification of the condition of both armpit areas, the tracer is injected into a foot vein. The tracer then travels throughout the body via the bloodstream, and is characteristically taken up in normal muscle cells, the kidneys, and to a lesser degree in other normal tissues. It is excreted through the liver into the bile and out the bowel. Most workers in the field believe that the differences in concentration of the tracer are related to the number of mitochondria, which are metabolic structures in the cells. Normal breast tissue takes up very little tracer, which allows metabolically active cancers to be easily seen

You will lie down on your stomach, with your breasts allowed to hang free. The breast will not be squeezed or manipulated in any uncomfortable way. A large camera type device will be placed next to your side, and an image obtained, which will require about 10 minutes. You should remain still and breathe normally until the technologist tells you the image is complete. If you move during the image, the picture will be fuzzy and difficult for the doctor to read. Then the procedure will be repeated on the other side. Some laboratories have a double headed camera and can take the two sides at the same time. And finally, a view will be taken from the front. Some laboratories do this with the patient sitting up. In addition, some laboratories perform special section pictures. In order to do this, the camera device has to rotate completely around the body. Depending upon how many heads the camera has, this may require from 30 to 60 minutes.

Receiving an intravenous injection is associated with the same discomfort as having a blood sample drawn. The tracer itself has no side effects or discomfort. Some people have a metallic taste when the tracer is initially injected. This promptly disappears. It can be tiring to lie on your stomach for 30 minutes on a table that may not have too much padding and may be somewhat narrow to allow the camera head to get close to you.



Normal Scintimammography



Focal lesion (Hotspot) seen in the left breast

After the test

Once the study is complete, it will be evaluated for quality. If there was too much motion, the study may need to be repeated. If there was no motion, you will be free to leave and resume normal activity.

Once inside your body, the tracers don't remain active for long. The radioactivity disappears within one to three days. You should feel no side effects after the procedure, and no aftercare is necessary. If you're breast-feeding, your doctor might ask you to stop for 24 hours after the tracer injection.