



Mammography

A high-quality mammogram is an effective tool for early detection of breast cancer. Mammography machines produce x-rays that pass through the soft parts of bodies and capture a two-dimensional image of the dense parts, including tumors and cysts.

Like microwaves, radio waves, and visible light, the x-rays produced by a mammography machine are a form of electromagnetic radiation. Unlike microwaves, radio waves, and visible light, x-rays are ionizing radiation, which is capable of removing electrons from atoms and damaging living cells and the DNA of those cells. However, since mammography machines only produce radiation during operation and the amount of radiation used is small, resulting medical problems are unlikely.

Who is protecting you

The States

State radiation programs, in cooperation with the Food and Drug Administration (FDA), manage the inspection of mammography equipment and facilities.

U.S. Food and Drug Administration (FDA)

Congress enacted the Mammography Quality Standards Act (MQSA) in 1992 to ensure that all women have access to the high-quality mammograms necessary to detect breast cancer in its earliest, most treatable stages. As a result of MQSA, FDA developed and implemented mammography quality standards regulations. In addition, MQSA mandates that facilities ask about breast implants prior to performing mammograms, deliver the mammogram results directly to the patients, transfer mammograms to other facilities upon request, and limit discussions with patients to any concerns a patient may have about the procedure. Only a certified radiologist may interpret the results.

The FDA regulates mammography facilities, equipment, and personnel. All mammography facilities must be certified by the American College of Radiology; have qualified personnel with the necessary credentials; and adhere to quality control measures, patient dose maximums, and image quality standards.

What you can do to protect yourself

Most people's exposure to x-rays is almost entirely from dental and medical x-rays, including mammograms. The best way to protect yourself from excessive exposure to x-rays is to make sure the technician performing the procedure has the proper qualifications and receive assurance the x-ray machine has been inspected recently and is properly calibrated. You can also talk with your healthcare providers about when to schedule x-rays, how often you should have x-rays, and whether other procedures can provide equivalent information.

Resources

You can explore this radiation source further through the resources at the following URL:
<http://www.epa.gov/radtown/mammography.htm#resources>

We provide these resources on-line rather than here so we can keep the links up-to-date.