

“Every woman over 40 should be
examined for breast cancer once a year.”

American Cancer Society

► What to expect during your exam

A 3D mammography exam is very similar to a traditional mammogram. Just as with a digital mammogram, the technologist will position you, compress your breast under a paddle and take images from different angles. A 3D mammography exam may be used as a screening tool in conjunction with a traditional digital mammogram or may be used by itself for a diagnostic mammogram.

During the 3D mammography part of the exam, the X-ray arm sweeps in a slight arc over the breast, taking multiple breast images in just seconds. Your doctor is then able to view your breast tissue in one millimeter layers. Instead of viewing all the complexities of your breast tissue in one flat image, the doctor can examine the tissue one page or “slice” at a time.

There is no additional compression required with 3D mammography, and it only takes a few seconds longer for each view. The technologist will view the images at their computer workstation to ensure they have captured adequate images for review by a radiologist, who studies them and reports results to either your physician or directly to you.

Early Detection is the Key

Because our primary goal has always been to deliver the highest quality care to our patients, we are adding breast tomosynthesis to our breast health services.

We have chosen the Selenia® Dimensions® breast tomosynthesis system from Hologic because clinical studies show that it is a more accurate mammogram.²

Please call our office at 617-983-7272 to
schedule your annual mammogram.

Brigham and Women's Faulkner Hospital's Breast Imaging Services are licensed by the Department of Public Health, certified by the FDA/MQSA and accredited by the American College of Radiology.



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3D Mammography

The most exciting advancement in
mammography in over 30 years



Breast tomosynthesis

A 3D mammogram

► Screening for breast cancer

Doctors and scientists agree that early detection is the best defense against breast cancer. Successful treatment and survival rates for breast cancer patients are dramatically affected by early detection of breast cancers. If we find breast cancer early, before it has spread to lymph nodes, the five-year survival rate is almost 100 percent.¹ Until now, the best way to do that has been with digital mammography.

While digital mammography is still one of the most advanced technologies available today, it is only a 2-dimensional picture of the breast. The breast is a 3-dimensional object composed of different

structures, such as blood vessels, milk ducts, fat, and ligaments. All of these structures, which are located at different heights within the breast, can overlap and cause confusion when viewed as a 2-dimensional, flat image. This confusion of overlapping tissue is a leading reason why small breast cancers may be missed and normal tissue may appear abnormal, leading to unnecessary call backs.

Hologic – a world leader in digital mammography – has developed a new technology called 3D mammography (also called breast tomosynthesis), which has been shown in clinical studies to be superior to digital mammography.²

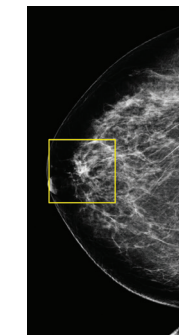
► What is 3D mammography?

3D mammography is a new technology in the fight against breast cancer that allows doctors to examine your breast tissue one layer at a time. 3D mammography uses high-powered computing to convert digital breast images into a stack of very thin layers or “slices”– building what is essentially a “3-dimensional mammogram”. A good analogy for 3D mammography is like thinking of the pages in a book. If you look down at the cover you cannot see all of the pages – but when you open it up, you can go through the entire book page-by-page to see everything between the covers. 3D mammography is designed with the same concept in mind.

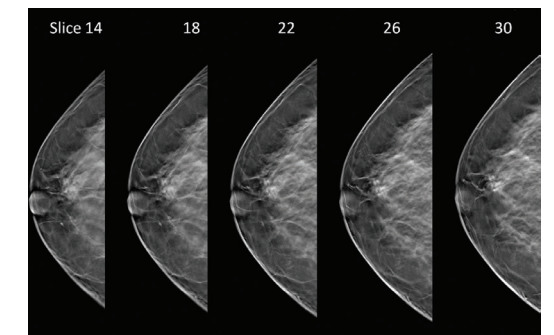
Very low X-ray energy is used during the screening examination so your radiation exposure is below the FDA guidelines. Using 3D mammography and digital mammography together for screening has been proven to significantly reduce “call-backs” by 20-40%.^{3,4} In addition, 3D mammography finds cancers earlier than 2D mammography alone, with a 27% increase in cancer detection and a 40% increase in invasive cancer detection.⁵

3D mammography may also be used during a diagnostic mammogram if you happen to be called back for this type of exam.

Images from a breast exam: 2D vs 3D Slices



2D image



3D image slices

In a “conventional” 2D mammogram there appears to be an area of concern that the doctor may want to further investigate with another mammogram or a biopsy. Looking at the same breast tissue in 3D mammography image slices, the doctor can now see that the tissue is in fact normal breast tissue that was overlapping in the traditional mammogram creating the illusion of an abnormal area. In this scenario this patient likely avoided a callback for an additional mammogram thanks to the 3D mammography exam technology.

1. American Cancer Society, Facts and Figures 2012.
2. Rafferty EA, Park JM, Philpotts LE, et al. Assessing Radiologist Performance Using Combined Digital Mammography and Breast Tomosynthesis Compared with Digital Mammography Alone: Results of a Multicenter, Multireader Trial. *Radiology*. 2013 Jan; 266(1):104-13. Epub 2012 Nov 20.
3. Philpotts L, Raghu M, Durand M, et al. Initial Experience With Digital Breast Tomosynthesis in Screening Mammography. Presented at the ARRS 2012, Scientific Session 22 - Breast Imaging: Screening/Emerging Technologies.
4. Haas B et al. Performance of Digital Breast Tomosynthesis Compared to Conventional Digital Mammography for Breast Cancer Screening. *Radiological Society of North America annual meeting*. Chicago, IL, 2012.
5. Skaane P, Bandos A, Gullien R, et al. Comparison of Digital Mammography Alone and Digital Mammography Plus Tomosynthesis in a Population-based Screening Program. *Radiology*. 2013 Jan 7 [Epub ahead of print].



The Selenia Dimensions system is designed to maximize patient comfort during the exam.