

We are looking at
Breast Imaging in a
whole new **dimension**

3D Tomosynthesis

Breast Tomosynthesis is a three-dimensional (3D) mammogram which allows breast tissue to be examined in thin 'layers', typically of 1mm thickness, minimising any potential confusion of overlapping tissues and has been shown in clinical studies to be superior to conventional 2D mammography alone.

Early Detection is the Key

Doctors and scientists agree that early detection is the best defense against breast cancer. Successful treatment and survival rates for patients are dramatically improved by early detection. If lesions are found early, before spreading to lymph nodes, the five-year survival rate is almost 100 percent¹.

40%

INCREASE in the
detection of invasive
breast cancers

**3D Tomosynthesis significantly
IMPROVES cancer detection**

**and significantly REDUCES call backs
and unnecessary follow-up tests**

Using 3D Tomosynthesis and 2D digital mammography together has been proven to significantly reduce "call-backs" by 20-40%.^{2,3} In addition, 3D Tomosynthesis finds cancers earlier than 2D mammography alone, with a 27% increase in cancer detection and a 40% increase in invasive cancer detection.⁴

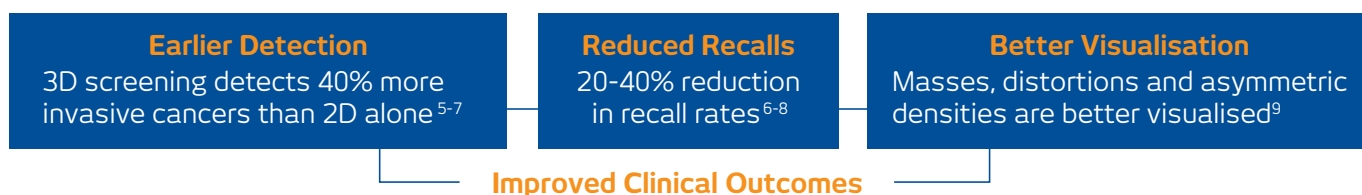
3D Tomosynthesis vs 2D Mammography

2D Mammography

- Many of the limitations of 2D mammography can be attributed to the effects of superimposed tissues.
- When breast tissue is viewed in a single flat image, different structures located at different heights within the breast can overlap.
- Breast cancers may be hidden, resulting in a false-negative result.

3D Tomosynthesis

- Is the current gold standard for mammography.
- The 3-dimensional images produced by tomosynthesis reveal the inner architecture of the breast free from the superimposition of overlying structures.
- A 3D tomosynthesis scan virtually eliminates detection challenges associated with overlapping structures in the breast and reduces the occurrence of both false negatives and false positive results.

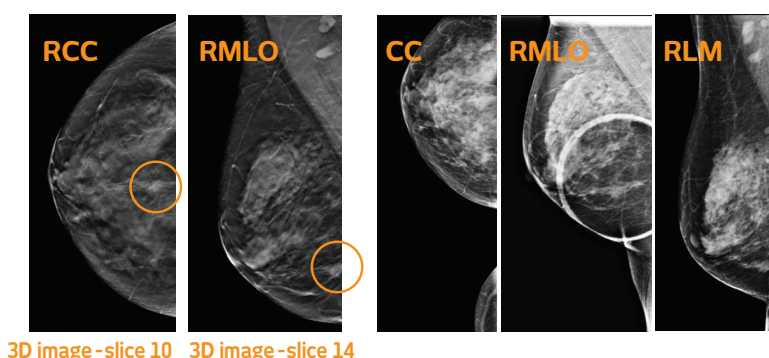
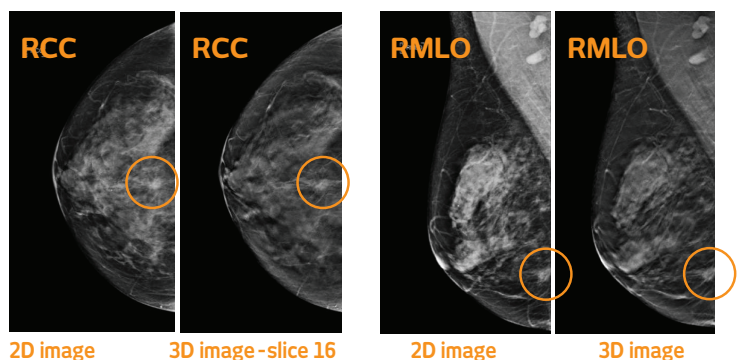


What are the potential benefits?

- Provides clear, high-resolution images that virtually eliminate tissue overlap, enhancing diagnostic accuracy and confidence in confirming a cancer or dismissing false positives.
- The extraordinary sharp image detail helps better visualisation of masses & asymmetric densities for clearer diagnostic rulings.
- Very low x-ray energy is used during the examination ensuring radiation exposure is within the recommended guidelines.
- Has the potential to reduce the number of exposures, without sacrificing any valuable patient data, which can result in a reduced x-ray dose for patients.

Case study: Invasive ductal carcinoma

- > Routine screening with combination 3D+2D
- > History of left benign biopsy
- > 2D exam illustrates asymmetric density, likely at Right 6:00 area
- > 3D Right CC and MLO illustrate the asymmetric density to correlate
- > 3D Right CC and MLO illustrate a spiculated mass
- > Diagnosis: invasive ductal carcinoma



1. American Cancer Society, Facts and Figures 2012. 2. 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. 3. 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. 4. 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 Apr; 267(1): 47-56. Epub 2013 Jan 7. 5. Levine, Gary. <http://imaging-radiation-oncology.advanceweb.com/Features/Articles/3-D-Mammography-Advancing.aspx> February 27, 2012. 6. Skaane P, Gullien R, Eben EB, et. al. Reading time of FFDM and tomosynthesis in a population-based screening program. Radiological Society of North America annual meeting, Chicago, IL, 2011. 7. FDA PMA submission P080003. 8. Bernardi D, Ciatto S, Pellegrini M, et. al. Prospective study of breast tomosynthesis as a triage to assessment in screening. Breast Cancer Res Treat. 2012 Jan 22. 9. Zuley M, Bandos A, Ganott M, et al. "Digital Breast Tomosynthesis versus Supplemental Diagnostic Mammographic Views for Evaluation of Noncalcified Breast Lesions." Radiology. 2013 Jan; 266(1):89-95. Epub 2012 Nov 9.