Frequently Asked Questions

Q: What is the difference between conventional mammography and tomosynthesis?
A: In mammography, a single x-ray image of a compressed breast is produced. In tomosynthesis, several low-dose x-rays are made from different angles, which will be used to reconstruct image slices and allow the doctors to “see through” the breast tissue. The total radiation dose you receive from DBT is the same as from screening mammography.

Q: How long will this study last?
A: Your participation in this study would last approximately 40 minutes to 1 hour including the time for you to fill out the consent form.

Q: What are the risks and benefits of this study?
A: You will get additional radiation from being in this study. The radiation dose will be no more than 300 millirems (mrem; a unit of radiation) for two tomosynthesis scans with average breast thickness. This is about equal to the amount of radiation you get in one year of daily life. The risk from this amount of radiation is too small to be measure directly. It is considered to be low-risk when compared with other every day risks. There is NO benefit directly to you by participating in this study. However, the long-term clinical benefits of breast tomosynthesis at minimal compression for you and other patients in the future may include a significantly improved screening experience due to decreased discomfort.

Comparison of Lesion Conspicuity and Dose in Breast Tomosynthesis with Minimal vs Standard Compression
Objective:
The objective of the present study is to demonstrate that a decrease in compressive force to less than 40% of that used in standard mammography and tomosynthesis does not result in any significant reduction in lesion conspicuity.

Eligibility Criteria:
- You will be eligible if you are over the age of 30 and
- you are scheduled for a diagnostic workup or biopsy for a suspicious lesion with microcalcification

You will undergo two tomosynthesis scans with a CC-view compression, with a total glandular dose that is equivalent to screening mammography. The order in which the two tomosynthesis scans are performed is randomized for each patient. You might have first scan with the minimum compression force of 2-4 daN, or with regular compression force of ~10 daN. A certified Mammographic Technologist, will acquire breast DBT images. Only the breast that contains the lesion in question will be imaged. The breast will be positioned the same way as in CC view digital mammography, while the X-ray source moves in an arc around the breast and 25 low dose exposures made during ~20 seconds of exposure-time. The compression force will NOT be released between two scans, which will take about 1-2 minutes. Minimal compression could result in increased probability of breast motion. Plastic skin markers will be placed on your breast (at locations equidistant from the compression paddle and the breast support plate) so that their projections can be used to track motion of your breast during tomosynthesis scan.

Comparison of Lesion Conspicuity and Dose in Breast Tomosynthesis with Minimal vs. Standard Compression

Background:
Breast Cancer death rates have dropped (despite a rise in the incidence of breast cancer cases), primarily due to population-based breast cancer screening. Compared with projection mammography, which is the standard imaging technology for breast cancer screening, digital breast tomosynthesis (DBT) makes several projection images from different angles of the breast using approximately the same amount of dose. In tomosynthesis, however, image reconstruction techniques are used to produce cross-sectional images of the breast in any plane that is parallel to the detector. This reduces the effects of overlapping breast tissue and potentially increases lesion detectability. Breast tomosynthesis offer the possibility of reduced breast compression and ultimately improved screening for earlier detection of breast cancer.