

New technology offers the next generation of mammography

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Breast cancer is the second most common type of cancer among women in the United States, with approximately 200,000 new diagnoses each year. Early detection is key in the treatment of breast cancer and the biggest advancement for detection in 30 years has arrived at University Hospitals (UH) Case Medical Center - tomosynthesis, an innovative technology that provides three-dimensional detailed imaging of the breast.

"Tomosynthesis offers women the next generation in breast cancer detection," says Donna Plecha, MD, Director of Breast Imaging at UH Case Medical Center and Assistant Professor at Case Western Reserve University School of Medicine. "This revolutionary technology provides exceptionally sharp images and is an important new tool in our arsenal to detect breast cancer early when it is treatable."

Breast cancer is a significant health problem and statistics indicate that one in eight women will develop the disease in her lifetime. The stage at which the cancer is discovered influences a woman's chance of survival and annual mammography after the age of 40 enables physicians to identify the smallest abnormalities. In fact, when breast cancer is detected early and confined to the breast, the five-year survival rate is 97 percent.

"Annual screening mammograms starting at the age of 40 saves lives," says Paula Silverman, MD, Medical Director of the Breast Cancer Program, Seidman Cancer Center at UH Case Medical Center and

Associate Professor at Case Western Reserve School of Medicine.

"Breast cancers caught in the initial stages by mammography are more likely to be cured and are less likely to require chemotherapy or as extensive surgery."

University Hospitals was involved with early studies of tomosynthesis and now patients at the Breen Breast Health Pavilion at UH Case Medical Center in Cleveland's University Circle and UH Chagrin Highlands Health Center in Orange Village, Ohio, are among the first in the nation to be offered the system. UH uses the Selenia® Dimensions® 3D digital mammography system, manufactured by Hologic and recently approved by the FDA, combining advanced digital mammography and tomosynthesis-generated images to provide a more detailed, highly focused picture of the breast.

The system acquires multiple, low-dose images at different angles, similar to Computed Tomography (CT) of the body. These images are then used to produce a series of one-millimeter thick slices that can be viewed as a 3D reconstruction of the breast. Women getting a mammogram will not feel any difference on the new machines. The tomosynthesis unit looks similar to the previous mammogram machines and the amount of breast compression is identical to the conventional mammogram.

The technology gives radiologists the ability to identify and characterize individual breast structures and clearly see features which might be obscured in a traditional two-dimensional mammogram by overlapping normal breast anatomy that may mimic or mask a tumor. Dense tissue and overlapping tissue structures may lead to false positive or false negative results with standard [mammography](#).

Tomosynthesis additionally has the potential to decrease the number of women who need to return for additional testing. Nationally, about 10

percent of women who undergo a regular screening mammogram are recalled for additional mammogram images after an abnormality is detected which can be very stressful.

"This cutting edge technology helps radiologists detect, screen and find breast cancers at very early stage tumors when they're small," adds Dr. Plecha. "It also helps us to pinpoint the location, size and shape of the cancer. Our only and best defense against [breast cancer](#) is catching it early and curing it at a more treatable stage and tomosynthesis provides us with an important new tool to decrease cancer mortality and save lives."

More information: To view a UH news video about tomosynthesis, go to: www.uhhospitals.org/tomosynthesis

Provided by University Hospitals Case Medical Center

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