

UCSD Healthcare Brings Digital Mammography To San Diego

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Digital mammography, a new technology that may enable physicians to detect more breast cancers than film-based mammography, is now available at UCSD.

San Diego's first full field digital mammography (FFDM) machine is being used for screening mammograms at UCSD's Breast Imaging Center in Hillcrest, and a second machine will be available for screening and diagnostic mammograms in the new Rebecca and John Moores UCSD Cancer Center facility when it opens in spring 2005.

Screening mammograms are conducted for the early detection of breast cancer as part of a normal health checkup. *Diagnostic* mammograms are important for evaluating women with breast symptoms or who have a finding on their screening mammogram that needs further testing.

FFDM is based upon satellite technology developed by NASA to study the atmosphere from space. Although the mammogram is still produced by radiation and breast compression, the image is now stored in a computer instead of on a piece of x-ray film.

Benefits include the following:

Digital mammography has a higher contrast resolution, which may make subtle cancers more apparent.

Digital images can be lightened or darkened for clearer viewing, often reducing the need to call patients back for repeat images and therefore reducing the patient's exposure to radiation.

Computer aided detection programs (CAD) can be added to a digital mammogram machine. This can assist mammographers by consistently scanning every part of every mammogram and reporting any suspicious areas, thereby acting as a second reader to improve detection rates.

Once a mammogram is in a computer format, it can be stored in a variety of ways, retrieved electronically, transmitted by telephone or other data lines, and copied exactly. This will reduce storage costs and the incidence of lost films.

It's quicker than standard mammography. Visits take about 10 minutes or less versus 15 to 20 minutes.

It is no more costly to patients.

"This is clearly the way of the future," said Christopher Comstock, M.D., associate professor of radiology and director of breast imaging services at UCSD. "We're excited about being able to offer this new technology to patients as part of our commitment to a high-quality, comprehensive breast imaging program with the newest and most powerful equipment, and highly skilled specialists."

Linda Olson, M.D., UCSD professor of radiology and member of the Breast Imaging Service, added that FFDM will change patient access.

"In the future, it may make mobile mammography more realistic. Until now we've been limited in the number of women we could screen in a van because of the bulkiness of the film and cassettes," she said. "Now, with digital

you can take a van out, image as many women as you can schedule, and transmit the images electronically for reading."

Duane Blickenstaff, M.D., UCSD professor of radiology and member of the Breast Imaging Service, said second opinions will be easier as well.

"The images can be sent electronically to experts wherever they are," he said. "Patients could even be given a CD of their mammogram."

Comstock said that UCSD is planning to add computer-aided detection (CAD) capabilities as an adjunct to FFDM.

"It's a form of double-reading with a sophisticated computer program, which is expected to increase the ability to find cancers," he said. "For example, if a radiologist finds 85 percent, and a computer finds 85 percent, they may be slightly different findings, so together they may total 90 percent or more."

FFDM and CAD add a new dimension to the Breast Imaging Service, which already employs magnetic resonance technology for imaging and biopsy.

Comstock, an expert in the use of these high-powered, high-tech modalities, is one of few fellowship-trained mammographers in the region. He was trained at the University of Chicago, where computer aided diagnosis in mammography was developed, and he later joined the faculty at Northwestern University in Chicago where he was involved in some of the earliest clinical testing of FFDM. Olson conducted early clinical trials of FFDM at UCSD. Both are members of the Moores UCSD Cancer Center.

Founded in 1979, the Rebecca and John Moores UCSD Cancer Center is one of just 38 centers in the United States to hold a National Cancer Institute designation as a Comprehensive Cancer Center. As such, it ranks among the top centers in the nation conducting basic and clinical cancer research, providing advanced patient care and serving the community through outreach and education programs.

For further information about digital mammography or other services of the UCSD Breast Imaging program, call 619-543-3405.

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