
RSNA Press Release

New Technology May Help Radiologists Find More Breast Cancers

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Media Contacts:

RSNA Media Relations: (630) 590-7762

Maureen Morley
(630) 590-7754
mmorley@rsna.org

Heather Babiar
(630) 590-7738
hbabiar@rsna.org

CHICAGO - Digital tomosynthesis shows promise over conventional film mammography as a more specific breast screening technique and a more accurate diagnostic technology, according to a study presented today at the annual meeting of the Radiological Society of North America (RSNA).

"The results of our preliminary trial suggest that tomosynthesis may decrease false-positive screening mammography findings by half, thereby reducing the number of women who are recalled after screening mammography for a second, more thorough exam," said lead author Steven Poplack, M.D., associate professor of diagnostic radiology and obstetrics and gynecology at the Dartmouth Hitchcock Medical Center/Dartmouth Medical School in Lebanon, N.H.

A patient's experience is much the same for tomosynthesis as it is for a standard mammography exam. Tomosynthesis obtains digital data that can be manipulated and displayed in a variety of ways, including paging through or cine display of thin (one millimeter) sections or slices of breast tissue, which eliminates the problem of overlying tissue that might be mistaken for lesions or that may hide small cancers.

To evaluate the role of tomosynthesis in breast cancer screening and diagnosis, Dr. Poplack and colleagues studied 98 women who were recalled for diagnostic imaging following abnormal screening mammograms. The initial screening mammography exams showed 112 findings in the women.

When the researchers compared the exams and took into account findings seen with tomosynthesis only, they found that approximately 40 percent of the patients would not have been recalled had they originally been screened using tomosynthesis. As a diagnostic imaging technique for follow-up of a potential abnormality in the breast, tomosynthesis was as good if not better than diagnostic mammography in 88 percent of patients.

At A Glance

- Tomosynthesis may be as good as or superior to diagnostic mammography in the vast majority of patients.
- Tomosynthesis can outperform screening mammography at recognizing benign or normal breast tissue.
- Tomosynthesis may reduce the number of false-positive screening mammograms by half.

Dr. Poplack is optimistic about the ability of tomosynthesis to improve the overall accuracy of diagnosing breast disease. "Tomosynthesis is going to reduce the number of false-positive screening exams and will probably allow us to find more early breast cancers," he said.

He pointed to a number of reasons this technology is appealing. "The similarity of tomosynthesis to mammography allows us to build on the current foundation of mammography while improving interpretation," he said. "It is both an evolution of mammography technology and revolutionary new technology."

Dr. Poplack expects that tomosynthesis, which is currently in the research phase, will be routinely be used in both screening and diagnostic mammography at major medical centers in the next several years.

Dr. Poplack's co-authors are Christine Kogel, R.N., Helene Nagy, M.D., and Tor Tosteson, Sc.D.

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Disclosure: Steven Poplack serves as a scientific advisory board member for Hologic Inc., which sponsored this study.

Note: Copies of RSNA 2005 news releases and electronic images will be available online at RSNA.org/press05 beginning Monday, Nov. 28.

RSNA is an association of more than 38,000 radiologists, radiation oncologists, medical physicists and related scientists committed to promoting excellence in radiology through education and by fostering research, with the ultimate goal of improving patient care. The Society is based in Oak Brook, Ill.

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Abstract:

- [Initial Experience with Digital Breast Tomosynthesis in 99 Breasts of 98 Women with Abnormal Digital Screening Mammography](#)