

Surg Technol Int. 2005;14:51-6.

Advances in breast imaging.

Agnese DM. The Ohio State University, Columbus, Ohio.

Although mammography remains the most widely used tool for the early detection of breast cancers and evaluation of palpable abnormalities, a number of other imaging tools are being developed and used. Ultrasonography (US) is an excellent adjunct to conventional mammography. In addition to identifying solid and cystic abnormalities, US can often distinguish benign and malignant solid nodules. Magnetic resonance imaging (MRI) also is useful in assessing the extent of disease within the breast, particularly in women with dense breasts. MRI may be a more sensitive screening tool in women at elevated breast cancer risk. Newer techniques based on the metabolic activity of breast tumors also have been developed. One such technique is scintimammography, which uses radiolabeled tracers to detect breast malignancies. Positron emission tomography (PET), which relies on the high metabolic rate of tumors, also has been described as a method to evaluate breast disease. **Other techniques, such as optical tomography and thermography, rely on angiogenesis and generated heat to identify cancers. These and other tools may help to improve both the sensitivity and specificity of cancer detection.** Ideally, this improved detection results in improved outcomes in those who have breast cancer and avoidance of unnecessary procedures in those who