



# Breast Imaging Vision by 2025 and Beyond: Diagnostic - Management - Decisions and Monitoring

**Prof. Miri Sklair-Levy, MD**

Current mammographic screening programs were designed in the 70's. Since then, women aged 40-50, undergo the same screening examination, 2D or 3D mammography, generally at 2-3 years interval.

However, in recent years we became aware to the limitations of mammography, especially in women with dense breast. There is an accumulation of data on different levels of risk for women to develop breast cancer, as well as knowledge regarding the variable biology of breast cancer.

Therefore, mammographic and non-mammographic screening and diagnostic methods, adjunct to mammography were developed.

Those include anatomic imaging as Ultrasound, especially as an adjunct to mammography in women with dense breasts and metabolic/functional vascular breast imaging following contrast administration, like breast MRI and Contrast Enhanced Mammography (CEM).

Breast MRI has been proven to be the most accurate modality for high-risk screening populations, assessment of neoadjuvant systemic therapy responses. It was also found useful in addressing inconclusive screening or diagnostic studies.

Many and more recent studies showed CEM as a potential alternative to MRI, simultaneously demonstrating vascular/metabolic imaging and standard mammograms. Contrast mammography is primarily used in the diagnostic setting to help identify breast malignancy and to exclude a benign process with more confidence. CEM can be performed as an adjunct to diagnostic imaging or in place of traditional diagnostic mammography. Accordingly, CEM dramatically improves the cancer detection and decreases the misdiagnosis rate, especially in dense breasts.

## Future Directions

Contrast mammography is widely accepted as diagnostic imaging. The role of CEM in breast cancer screening is being studied. This vascular /metabolic imaging may represent potential answers to shortcomings of mammographic screening. And may ultimately streamline increasingly individualized breast cancer screening and care, together with the current research focused on the radiomic features embedded in CEM.

## NOTES

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