

Breast Screening Options

This table outlines the differences between mammography, thermography, and ultrasound.

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Mammography	Thermography	Ultrasound
Uses X-rays to produce an image that is a shadow of dense structures. Suspicious areas need to be dense enough to be seen.	Uses infrared sensors to detect heat and increased vascularity (angiogenesis) as the byproduct of biochemical reactions. The heat is compiled into an image for computerized analysis.	High frequency sound waves are bounced off the breast tissue and collected as an echo to produce an image.
Structural imaging. Ability to locate the area of suspicious tissue.	Functional imaging. Detects physiologic changes. Cannot locate the exact area of suspicion inside the breast.	Structural imaging. Ability to locate the area of suspicious tissue.
Early detection method.	Early detection method. Used as an adjunctive imaging test.	Low spatial resolution (cannot see fine detail). Good at distinguishing solid masses from fluid filled cysts. Used as an adjunctive imaging test.
Findings increase suspicion. Cannot diagnose cancer.	Findings increase suspicion. Cannot diagnose cancer.	Findings increase suspicion. Cannot diagnose cancer.
Can detect tumors in the pre- invasive stage.	May provide the first signal that a problem is developing.	Ability to detect some cancers missed by mammography.
No comparison.	A positive infrared image represents the highest known risk factor for the existence of or future development of breast cancer – 10 times more significant than any family history of the disease.	No comparison.
Average 80% Sensitivity (20% of cancers missed), in women over age 50. Sensitivity drops to 60% (40% of cancers missed) in women under age 50.	Average 90% Sensitivity (10% of cancers missed) in all age groups.	Average 83% Sensitivity (17% of cancers missed) in all age groups.
Hormone use decreases sensitivity.	No known effect.	No known effect.
Large, dense, and fibrocystic breasts cause reading difficulties.	No effect.	No known effect.
In most women, the medial upper triangle, peripheral areas next to the chest wall, and the inframammary sulcus cannot be visualized.	All areas visualized.	All areas visualized.