Breast Imaging

Type of Imaging	Method	Sensitivity (Correct positive tests)	Specificity (Correct negative tests)	<u>Harm</u>	<u>Pain</u>	<u>Nodal</u> detection	Breast type best used for	<u>Price</u>	<u>Other</u>
Mammography	Radiation to form image	39-81% alone	86% - 95%	Radiation Exposure	Breast Compression	Ø	Larger, fatty breasts	\$80 to \$300	Finds exact location of tumor.
Thermography	Digital infra-red Imaging. Detects changes in temperature & vascular activity	25% alone. Combination of Mammogram + Thermography has 89% sensitivity in women under 50.	Variable with machine - low to 95%	No	None	Ø	All breast types	\$175 - \$300	detects physiological changes (increased blood flow)
MRI	Magnetic resonance imaging with ganolidium	67%-80% alone. 94% when combined with Mammography	90%	Ganolidium exposure (metal)	None	Can show axillary nodes	Dense Breasts	Average of \$3,800	Reduces frequency of breast biopsy.
Ultrasound	sound waves (highly operator dependent)	57% alone 90- 100% in combination with mammography. More research is going into making this a more effective primary screening.	62%	No	None	Ø	dense breasts, implants, pregnant, under 30	Average \$300	better at distinguishing cysts from solid mass. Not good at detecting masses under 1 cm in size.
Digital Mammogram	X-ray photons - Lower radiation than standard mammogram	Research is showing it to be slightly more senstive than conventional mammogarm	similar to mammogram	Radiation Exposure	Breast Compression	Ø	Small Dense breasts or breast implants	1.4 to 4 x the cost of conventional mammogram	Costs up to 4 x more than conventional mammogram. Less widely available. Still under research
Self Breast Exam	Hands	54%	Unknown	No	None	Can teach patients to check for nodal enlargement	All breast Types	Free	



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