



EUROPEAN COMMISSION  
JOINT RESEARCH CENTRE

Directorate F - Health, Consumers & Reference Materials (Ispra)  
**Health in Society**

# European Commission Initiative on Breast Cancer (ECIBC): European guidelines on breast cancer screening and diagnosis Evidence profile

<b>Healthcare question</b>	Should contrast-enhanced spectral mammography vs. magnetic resonance imaging be used as additional imaging method in assisting surgical treatment planning in women with histologically confirmed invasive breast cancer?
<b>Date</b>	July 2018
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Contrast-enhanced spectral mammography		Magnetic resonance imaging	
Sensitivity	0.39 (95% CI: 0.30 to 0.48)	Sensitivity	0.49 (95% CI: 0.40 to 0.59)
Specificity	0.94 (95% CI: 0.79 to 0.99)	Specificity	0.88 (95% CI: 0.70 to 0.96)

<b>Prevalence</b>	21%	0%
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Outcome	Nº of studies (Nº of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 1,000 patients tested				Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 21%		pre-test probability of 0%		
								Contrast-enhanced spectral mammography	Magnetic resonance imaging	Contrast-enhanced spectral mammography	Magnetic resonance imaging	
<b>True positives</b> (patients with women with histologically confirmed invasive breast cancer)	1 studies 149 patients <sup>a</sup>	cross-sectional (cohort type accuracy study) <sup>1</sup>	not serious	not serious	not serious	serious <sup>b</sup>	none	82 (63 to 101)	103 (84 to 124)	0 (0 to 0)	0 (0 to 0)	⊕⊕⊕○ MODERATE
								21 fewer TP in contrast-enhanced spectral mammography		0 fewer TP in contrast-enhanced spectral mammography		
<b>False negatives</b> (patients incorrectly classified as not having women with histologically confirmed invasive breast cancer)								128 (109 to 147)	107 (86 to 126)	0 (0 to 0)	0 (0 to 0)	
								21 more FN in contrast-enhanced spectral mammography		0 fewer FN in contrast-enhanced spectral mammography		
<b>True negatives</b> (patients without women with histologically confirmed invasive breast cancer)	1 studies 149 patients <sup>a</sup>	cross-sectional (cohort type accuracy study) <sup>1</sup>	not serious	not serious	not serious	serious <sup>b</sup>	none	743 (624 to 782)	695 (553 to 758)	940 (790 to 990)	880 (700 to 960)	⊕⊕⊕○ MODERATE
								48 more TN in contrast-enhanced spectral mammography		60 more TN in contrast-enhanced spectral mammography		

Outcome	Nº of studies (Nº of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 1,000 patients tested				Test accuracy CoE
								pre-test probability of 21%		pre-test probability of 0%		
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	Contrast-enhanced spectral mammography	Magnetic resonance imaging	Contrast-enhanced spectral mammography	Magnetic resonance imaging	
False positives (patients incorrectly classified as having women with histologically confirmed invasive breast cancer)								47 (8 to 166)	95 (32 to 237)	60 (10 to 210)	120 (40 to 300)	
								48 fewer FP in contrast-enhanced spectral mammography		60 fewer FP in contrast-enhanced spectral mammography		

## Explanations

- The numbers represent the number of lesions included in the analysis instead of the number of patients.
- The results are imprecise due to the low number of lesions/patients included.

## References

- Fallenberg EM1, Schmitzberger FF2,Amer H2,Ingold-Heppner B3,Balleyguier C4,Diekmann F5,Engelken F2,Mann RM6,Renz DM7,Bick U2,Hamm B2,Dromain C4.. Contrast-enhanced spectral mammography vs. mammography and MRI - clinical performance in a multi-reader evaluation.. Eur Radiol; 2017.