

**American College of Radiology  
ACR Appropriateness Criteria®**

**Breast Pain**

**Variant 1: Woman with clinically insignificant breast pain (nonfocal [greater than one quadrant], diffuse, or cyclical) without other suspicious clinical finding. Any age. Initial imaging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Mammography diagnostic	Usually not appropriate	Limited	☼☼ 0.1-1mSv		1	1	9	0	2	2	2	0	0	1	0
		References		Study Quality											
		33 (28567103)		3											
		8 (27916596)		4											
		34 (22331398)		3											
		14 (9831579)		4											
		32 (10794575)		4											
MRI breast without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	0	1	0	0	0	0	0	0
MRI breast without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	0	1	0	0	0	0	0	0
US breast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	0	0	0	0	0	0	0
		References		Study Quality											
		8 (27916596)		4											
		35 (25931836)		3											
Digital breast tomosynthesis diagnostic	Usually not appropriate	Expert Consensus	☼☼ 0.1-1mSv		1	1	10	0	2	1	3	0	0	0	0

Tc-99m sestamibi MBI	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	15	0	1	0	0	0	0	0	0
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**Variant 2: Woman with clinically significant breast pain (focal and noncyclical). Age less than 30. Initial imaging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US breast	Usually appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	7	7	0	0	0	1	2	2	4	3	4

References	Study Quality
9 (27746121)	3
35 (25931836)	3
11 (24011215)	3
37 (21098212)	3
12 (12008815)	3
14 (9831579)	4

Mammography diagnostic	Usually not appropriate	Limited	☹☹ 0.1-1mSv		1	1	10	2	2	0	0	0	2	0	0
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References	Study Quality
36 (7268931)	3

MRI breast without IV contrast	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	1	1	15	0	0	0	0	0	1	0	0
MRI breast without and with IV contrast	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	1	1	15	0	0	0	0	0	1	0	0
Digital breast tomosynthesis diagnostic	Usually not appropriate	Expert Consensus	☹☹ 0.1-1mSv		1	1	11	2	2	1	0	0	0	0	0
Tc-99m sestamibi MBI	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	15	0	1	0	0	0	0	0	0

**Variant 3: Woman with clinically significant breast pain (focal and noncyclical). Age 30 to 39. Initial imaging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations									
							1	2	3	4	5	6	7	8	9	
Mammography diagnostic	Usually appropriate	Limited	⊕⊕ 0.1-1mSv		9	9	0	0	0	1	1	0	3	3	8	
		References	Study Quality													
		9 (27746121)	3													
		10 (3371473)	4													
		39 (23175484)	2													
Digital breast tomosynthesis diagnostic	Usually appropriate	Strong	⊕⊕⊕ 0.1-1mSv		9	9	0	0	0	0	2	0	1	3	10	
		References	Study Quality													
		39 (23175484)	2													
		28 (23345348)	2													
		29 (23620367)	2													
		30 (23255766)	3													
		40 (29494322)	2													
		41 (29429017)	2													
US breast	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	7	7	0	0	0	0	1	2	8	0	5	
		References	Study Quality													
		9 (27746121)	3													
		11 (24011215)	3													
		12 (12008815)	3													
		14 (9831579)	4													
MRI breast without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	0	0	0	0	1	0	0	0	

MRI breast without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	0	0	0	0	1	0	0	0
Tc-99m sestamibi MBI	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv		1	1	15	0	0	1	0	0	0	0	0

**Variant 4: Woman with clinically significant breast pain (focal and noncyclical). Age greater than or equal to 40. Initial imaging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations									
							1	2	3	4	5	6	7	8	9	
Mammography diagnostic	Usually appropriate	Limited	⊕⊕ 0.1-1mSv		9	9	0	0	0	0	0	0	4	1	11	
		References	Study Quality													
		9 (27746121)	3													
		11 (24011215)	3													
		38 (16174154)	3													
Digital breast tomosynthesis diagnostic	Usually appropriate	Strong	⊕⊕ 0.1-1mSv		9	9	0	0	0	1	0	0	5	1	9	
		References	Study Quality													
		28 (23345348)	2													
		29 (23620367)	2													
		30 (23255766)	3													
US breast	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	7	7	0	1	0	1	1	4	6	1	2	
		References	Study Quality													
		9 (27746121)	3													
		11 (24011215)	3													
		12 (12008815)	3													
		14 (9831579)	4													
MRI breast without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	0	0	0	1	0	0	0	0	

MRI breast without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	0	0	0	0	0	0	0	1
Tc-99m sestamibi MBI	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv		1	1	14	0	1	0	0	1	0	0	0

## **Appendix Key**

A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

**Appropriateness Category:** The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

**SOE:** Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References:** The citation number and PMID for the reference(s) associated with the recommendation.
- **Study Quality:** The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

**RRL:** Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

**Rating:** The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

**Median:** The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

**Final tabulations:** A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at [www.acr.org/ac](http://www.acr.org/ac).