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

### Breast Pain

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

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammography diagnostic</td>
<td>Usually not appropriate</td>
<td>Limited</td>
<td>☢☢ 0.1-1mSv</td>
<td></td>
<td>1</td>
<td>1</td>
<td>9 0 2 2 2 0 0 1 0</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33 (28567103)</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 (27916596)</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34 (22331398)</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 (9831579)</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32 (10794575)</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRI breast without IV contrast</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>☢☢ 0 mSv [ped]</td>
<td>☢☢ 0 mSv [ped]</td>
<td>1</td>
<td>1</td>
<td>15 0 1 0 0 0 0 0 0</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 (27916596)</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 (25931836)</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRI breast without and with IV contrast</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>☢☢ 0.1-1mSv</td>
<td>☢☢ 0.1-1mSv</td>
<td>1</td>
<td>1</td>
<td>10 0 2 1 3 0 0 0 0</td>
</tr>
<tr>
<td>US breast</td>
<td>Usually not appropriate</td>
<td>Limited</td>
<td>☢☢ 0.1-1mSv</td>
<td></td>
<td>1</td>
<td>1</td>
<td>15 1 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 (27916596)</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 (25931836)</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital breast tomosynthesis diagnostic</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>☢☢ 0.1-1mSv</td>
<td>☢☢ 0.1-1mSv</td>
<td>1</td>
<td>1</td>
<td>10 0 2 1 3 0 0 0 0</td>
</tr>
</tbody>
</table>

**References**

- 33 (28567103)
- 8 (27916596)
- 34 (22331398)
- 14 (9831579)
- 32 (10794575)
- 8 (27916596)
- 35 (25931836)
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tc-99m sestamibi MBI</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>☢☢☢ 1-10 mSv</td>
<td>1</td>
<td>1</td>
<td>15</td>
<td>0 1 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>US breast</td>
<td>Usually appropriate</td>
<td>Limited</td>
<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
<td>7</td>
<td>7</td>
<td>0 0 0 1 2 2 4 3 4</td>
</tr>
<tr>
<td>Mammography diagnostic</td>
<td>Usually not appropriate</td>
<td>Limited</td>
<td>☢ 0.1-1mSv</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>2 2 0 0 0 2 0 0 0</td>
</tr>
<tr>
<td>MRI breast without IV contrast</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
<td>1</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>MRI breast without and with IV contrast</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
<td>1</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Digital breast tomosynthesis diagnostic</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>☢ 0.1-1mSv</td>
<td>1</td>
<td>1</td>
<td>11</td>
<td>2 2 1 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Tc-99m sestamibi MBI</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>☢☢☢ 1-10 mSv</td>
<td>1</td>
<td>1</td>
<td>15</td>
<td>0 1 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>
Variant 3: Female with clinically significant breast pain (focal and noncyclical). Age 30 to 39. Initial imaging.

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

References
- 9 (27746121)
- 11 (24011215)
- 38 (16174154)
- 28 (23345348)
- 29 (23620367)
- 30 (23255766)
- 9 (27746121)
- 11 (24011215)
- 12 (12008815)
- 14 (9831579)
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness</th>
<th>Expert Consensus</th>
<th>Radiation Dose</th>
<th>Dose Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRI breast without and with IV contrast</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>0.0 mSv</td>
<td>1 1 15 0 0 0 0 0 0 0 0 0 1</td>
</tr>
<tr>
<td>Tc-99m sestamibi MBI</td>
<td>Usually not appropriate</td>
<td>Expert Consensus</td>
<td>1-10 mSv</td>
<td>1 1 14 0 0 1 0 0 1 0 0 0 0 0</td>
</tr>
</tbody>
</table>
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).