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

## Breast Imaging of Pregnant and Lactating Women

**Variant 1:** Breast cancer screening during lactation. 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 screening</td>
<td>Usually appropriate</td>
<td>☢☢ 0.1-1mSv</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>4 4</td>
</tr>
<tr>
<td>Digital breast tomosynthesis screening</td>
<td>Usually appropriate</td>
<td>☢☢ 0.1-1mSv</td>
<td>8</td>
<td>8</td>
<td>0</td>
<td>4</td>
<td>1 1 2 7</td>
</tr>
<tr>
<td>US breast</td>
<td>May be appropriate</td>
<td>O 0 mSv</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>4</td>
<td>0 0 0 0</td>
</tr>
<tr>
<td>MRI breast without and with IV contrast</td>
<td>Usually not appropriate</td>
<td>O 0 mSv</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>3 0 4 2 0 0 0</td>
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<tr>
<td>MRI breast without IV contrast</td>
<td>Usually not appropriate</td>
<td>O 0 mSv</td>
<td>1</td>
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<td>15</td>
<td>0</td>
<td>1 0 0 0 0 0 0 0</td>
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<tr>
<td>Tc-99m sestamibi MBI</td>
<td>Usually not appropriate</td>
<td>☢☢☢ 1-10 mSv</td>
<td>1</td>
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<td>15</td>
<td>1</td>
<td>0 0 0 0 0 0 0 0</td>
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</tbody>
</table>

**Variant 2:** Breast cancer screening during pregnancy. Age younger than 30 at high risk. 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>
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<tbody>
<tr>
<td>Mammography screening</td>
<td>Usually appropriate</td>
<td>☢☢ 0.1-1mSv</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>8 2 4</td>
</tr>
</tbody>
</table>
### Digital breast tomosynthesis screening
- Usually appropriate
- ☢☢ 0.1-1mSv
  - Median: 7
  - SOE: 7
  - Adults RRL: 1
  - Peds RRL: 0
  - Median: 3
  - Final Tabulations: 3 3 3 3 3 3 3 3 3

### US breast
- May be appropriate
- O 0 mSv
  - Median: 5
  - SOE: 5
  - Adults RRL: 0
  - Peds RRL: 1
  - Median: 10
  - Final Tabulations: 4 0 0 0

### MRI breast without IV contrast
- Usually not appropriate
- O 0 mSv
  - Median: 1
  - SOE: 1
  - Adults RRL: 15
  - Peds RRL: 0
  - Final Tabulations: 0 0 0 0 0 0 0 0 0

### MRI breast without and with IV contrast
- Usually not appropriate
- O 0 mSv
  - Median: 1
  - SOE: 1
  - Adults RRL: 15
  - Peds RRL: 0
  - Final Tabulations: 0 0 0 0 0 0 0 0 0

### Tc-99m sestamibi MBI
- Usually not appropriate
- ☢☢☢ 1-10 mSv
  - Median: 1
  - SOE: 1
  - Adults RRL: 15
  - Peds RRL: 1
  - Final Tabulations: 0 0 0 0 0 0 0 0 0

### Variant 3: Breast cancer screening during pregnancy. Age 30 to 39 years at elevated risk (intermediate or high risk). 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>
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<tbody>
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<td>0 0 0 0 1 1 7 3 4</td>
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<tr>
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<td>0</td>
<td>0 0 0 1 4 3 3 4</td>
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<tr>
<td>US breast</td>
<td>May be appropriate</td>
<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
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<td>1 1 2 10 2 0 0 0</td>
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<tr>
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<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
<td>1</td>
<td>1</td>
<td>16</td>
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<tr>
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<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
<td>1</td>
<td>1</td>
<td>16</td>
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<tr>
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<td>1</td>
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<td>0</td>
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### Variant 4: Breast cancer screening during pregnancy. Age 40 years or older, any risk level. Initial imaging.
<table>
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<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>
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<tr>
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<td>☢☢ 0.1-1mSv</td>
<td>9</td>
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<td>0</td>
<td>0</td>
<td>1 0 1 3 11</td>
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<td>☢☢ 0.1-1mSv</td>
<td>9</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1 0 2 13</td>
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<tr>
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<td>O 0 mSv</td>
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<td>O 0 mSv</td>
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<td>O 0 mSv</td>
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<td>☢☢☢ 1-10 mSv</td>
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<td>16</td>
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**Variant 5:** Pregnant women with a palpable breast mass. Initial imaging.

<table>
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<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
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<th>Final Tabulations</th>
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<tr>
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<td>O 0 mSv</td>
<td>9</td>
<td>9</td>
<td>0</td>
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<td>10 4 1 1 0</td>
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<tr>
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<td>Varies</td>
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<td>1</td>
<td>12</td>
<td>1 1 0 0 2 0 0 0 0</td>
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### Image-guided fine needle aspiration breast

Usually not appropriate  
Varies  
Varies  
1  
1  
12  
1  
2  
1  
0  
0  
0  
0  
0  
0  
0

### MRI breast without IV contrast

Usually not appropriate  
0 mSv  
0 mSv [ped]  
1  
1  
15  
0  
0  
0  
1  
0  
0  
0  
0  
0

### MRI breast without and with IV contrast

Usually not appropriate  
0 mSv  
0 mSv [ped]  
1  
1  
16  
0  
0  
0  
0  
0  
0  
0  
0  
0

### Tc-99m sestamibi MBI

Usually not appropriate  
☢☢☢ 1-10 mSv  
1  
1  
15  
0  
0  
0  
1  
0  
0  
0  
0  
0  
0  
0

### Variant 6: Clinically suspicious nipple discharge during pregnancy. 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>
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<th>Final Tabulations</th>
</tr>
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<tbody>
<tr>
<td>US breast</td>
<td>Usually appropriate</td>
<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
<td>9</td>
<td>9</td>
<td>0 0 0 0 0 1 0 3 12</td>
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<tr>
<td>Mammography diagnostic</td>
<td>Usually appropriate</td>
<td>☢☢ 0.1-1mSv</td>
<td>7</td>
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<tr>
<td>Digital breast tomosynthesis diagnostic</td>
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</tr>
<tr>
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<td>O 0 mSv</td>
<td>O 0 mSv [ped]</td>
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<tr>
<td>MRI breast without and with IV contrast</td>
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<td>O 0 mSv [ped]</td>
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<tr>
<td>Tc-99m sestamibi MBI</td>
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<td>1</td>
<td>1</td>
<td>16 0 0 0 0 0 0 0 0</td>
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### Variant 7: Locoregional staging of newly diagnosed breast cancer during pregnancy. 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>
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<tbody>
<tr>
<td>Mammography diagnostic</td>
<td>Usually appropriate</td>
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<td>9</td>
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<td>0</td>
<td>1</td>
<td>0 0 0 0 0 1 2 12</td>
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<tr>
<td>US axilla</td>
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<tr>
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<td>O 0 mSv [ped]</td>
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<td>15</td>
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<tr>
<td>MRI breast without and with IV contrast</td>
<td>Usually not appropriate</td>
<td>O 0 mSv [ped]</td>
<td>1</td>
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<td>15</td>
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</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.