

ACR Appropriateness Criteria[®] Breast Implant Evaluation

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Abstract

Breast implant imaging varies depending on patient age, implant type, and symptoms. For asymptomatic patients (any age, any implant), imaging is not recommended. Rupture of saline implants is often clinically evident, as the saline is resorbed and there is a change in breast contour. With saline implants and equivocal clinical findings, ultrasound (US) is the examination of choice for patients less than 30 years of age, either mammography/digital breast tomosynthesis or US may be used for those 30 to 39 years of age, and mammography/digital breast tomosynthesis is used for those 40 years and older. For patients with suspected silicone implant complication, MRI without contrast or US is used for those less than 30 years of age; MRI without contrast, mammography/digital breast tomosynthesis, or US may be used for those 30 to 39 years of age; and MRI without contrast or mammography/digital breast tomosynthesis is used for those 40 years and older. Patients with unexplained axillary adenopathy and silicone implants (current or prior) are evaluated with axillary US. For patients 30 years and older, mammography/digital breast tomosynthesis is performed in conjunction with US. Last, patients with suspected breast implant–associated anaplastic large-cell lymphoma are first evaluated with US, regardless of age or implant type.

The American College of Radiology Appropriateness Criteria are evidence-based guidelines for specific clinical conditions that are reviewed annually by a multidisciplinary expert panel. The guideline development and revision include an extensive analysis of current medical literature from peer reviewed journals and the application of well-established methodologies (RAND/UCLA Appropriateness Method and Grading of Recommendations Assessment, Development, and Evaluation or GRADE) to rate the appropriateness of imaging and treatment procedures for specific clinical scenarios. In those instances where evidence is lacking or equivocal, expert opinion may supplement the available evidence to recommend imaging or treatment.

Key Words: Appropriateness Criteria, Appropriate Use Criteria, AUC, Breast implant, Breast implant–associated anaplastic large-cell lymphoma (BIA-ALCL), Implant rupture, Intracapsular and extracapsular rupture, Saline implant, Silicone implant

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The American College of Radiology seeks and encourages collaboration with other organizations on the development of the ACR Appropriateness Criteria through society representation on expert panels. Participation by representatives from collaborating societies on the expert panel does not necessarily imply individual or society endorsement of the final document. Reprint requests to: publications@acr.org.

Conflict of Interest: The authors have no conflicts of interest related to the material discussed in this article.

Disclaimer: The ACR Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those examinations generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the FDA have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

ACR Appropriateness Criteria® Breast Implant Evaluation. Variants 1 to 12 and Tables 1 and 2.

Variant 1. Evaluation of saline breast implants. Asymptomatic patient. Any age. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
Mammography screening	Usually Not Appropriate	☼☼
Digital breast tomosynthesis screening	Usually Not Appropriate	☼☼
US breast	Usually Not Appropriate	0
MRI breast without IV contrast	Usually Not Appropriate	0
MRI breast without and with IV contrast	Usually Not Appropriate	0

IV = intravenous; US = ultrasound.

Variant 2. Evaluation of saline breast implants. Clinical examination equivocal for implant rupture. Age younger than 30 years. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
US breast	Usually Appropriate	0
Mammography diagnostic	Usually Not Appropriate	☼☼
Digital breast tomosynthesis diagnostic	Usually Not Appropriate	☼☼
MRI breast without IV contrast	Usually Not Appropriate	0
MRI breast without and with IV contrast	Usually Not Appropriate	0

IV = intravenous; US = ultrasound.

Variant 3. Evaluation of saline breast implants. Clinical examination equivocal for implant rupture. Age 30–39 years. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
Mammography diagnostic	Usually Appropriate	☼☼
Digital breast tomosynthesis diagnostic	Usually Appropriate	☼☼
US breast	Usually Appropriate	0
MRI breast without IV contrast	Usually Not Appropriate	0
MRI breast without and with IV contrast	Usually Not Appropriate	0

IV = intravenous; US = ultrasound.

Variant 4. Evaluation of saline breast implants. Clinical examination equivocal for implant rupture. Age 40 years or older. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
Mammography diagnostic	Usually Appropriate	☼☼
Digital breast tomosynthesis diagnostic	Usually Appropriate	☼☼
US breast	May Be Appropriate	0
MRI breast without IV contrast	Usually Not Appropriate	0
MRI breast without and with IV contrast	Usually Not Appropriate	0

IV = intravenous; US = ultrasound.

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