Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

ACR Appropriateness Criteria® nonpalpable mammographic findings (excluding calcifications).

Bibliographic Source(s)

Newell MS, D'Orsi C, Mahoney MC, Bailey L, Barke LD, Harvey JA, Hayes MK, Jokich PM, Lee S, Lehman CD, Mainiero MB, Mankoff DA, Patel SB, Reynolds HE, Sutherland ML, Haffty BG, Expert Panel on Breast Imaging. ACR Appropriateness CriteriaÂ® nonpalpable mammographic findings (excluding calcifications). [online publication]. Reston (VA): American College of Radiology (ACR); 2012. 10 p. [29 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Newell MS, Birdwell RL, D'Orsi CJ, Bassett LW, Mahoney MC, Bailey L, Berg WA, Harvey JA, Herman CR, Kaplan SS, Liberman L, Mendelson EB, Parikh JR, Rabinovitch R, Rosen EL, Sutherland ML, Expert Panel on Breast Imaging. ACR Appropriateness Criteria® nonpalpable mammographic findings (excluding calcifications). [online publication]. Reston (VA): American College of Radiology (ACR); 2010. 11 p.

Recommendations

Major Recommendations

ACR Appropriateness Criteria®

Clinical Condition: Nonpalpable Mammographic Findings (Excluding Calcifications)

Variant 1: Architectural distortion seen on screening mammogram. No history of prior surgery or trauma. Next examination to perform. (See Appendix 1 in the original guideline document for additional steps in the workup of these patients.)

Radiologic Procedure	Rating	Comments	RRL*
Mammography diagnostic	9		☢☢
Mammography short-interval follow-up	1		☢☢
US breast	1		O
MRI breast without and with contrast	1		O
MRI breast without contrast	1		O
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative**

Radiologic Procedure	Rating	Comments	RRL*
Image-guided core biopsy breast	1		Varies
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative Radiation Level**

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 2: Architectural distortion seen on screening mammogram. Prior surgery or trauma at area of distortion. No prior examinations available. Next examination to perform. (See Appendix 1 in the original guideline document for additional steps in the workup of these patients.)

Radiologic Procedure	Rating	Comments	RRL*
Mammography diagnostic	6	Use of a scar marker on the original screening study may preclude the need for diagnostic evaluation.	☢☢
Return to screening mammography	4	If the area can be confidently determined to be related to prior surgery (i.e., by scar marker) or the sequelae of trauma (e.g., presence of fat necrosis), consider return to screening mammography.	☢☢
Mammography short-interval follow-up	1		☢☢
US breast	1		O
MRI breast without and with contrast	1		O
MRI breast without contrast	1		O
Image-guided core biopsy breast	1		Varies
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative Radiation Level**

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 3: Mass seen on screening mammogram (assuming mass has not previously been worked up). Indistinct, microlobulated or spiculated margins. Next examination to perform. (See Appendix 2 in the original guideline document for additional steps in the workup of these patients.)

Radiologic Procedure	Rating	Comments	RRL*
Mammography diagnostic	9		☢☢
Mammography short-interval follow-up	1		☢☢
US breast	1		O
MRI breast without and with contrast	1		O
MRI breast without contrast	1		O
Image-guided core biopsy breast	1		Varies
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative Radiation Level**

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 4: Mass seen on screening mammogram (assuming mass has not previously been worked up). Circumscribed margins with no associated suspicious features. New or enlarging compared to prior examinations or no priors available. Next examination to perform. (See Appendix 2 in the original guideline document for additional steps in the workup of these patients.)

Radiologic Procedure	Rating	Comments	RRL*
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative**

Radiologic Procedure	Rating	Comments	RRL*
US breast	9		O
Mammography diagnostic	5	In selected cases, spot/magnification views may help elucidate margins, exclude intramammary node as etiology.	☢☢
Mammography short-interval follow-up	1		☢☢
MRI breast without and with contrast	1		O
MRI breast without contrast	1		O
Image-guided core biopsy breast	1		Varies
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative Radiation Level**

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 5: Multiple bilateral masses seen on screening mammogram. No suspicious features in any mass. Baseline examination or no priors available. Next examination to perform. (See Appendix 3 in the original guideline document for additional steps in the workup of these patients.)

Radiologic Procedure	Rating	Comments	RRL*
Return to screening mammography	8		☢☢
Mammography short-interval follow-up	3	In selected cases, may be appropriate.	☢☢
US breast	1		O
MRI breast without and with contrast	1		O
MRI breast without contrast	1		O
Image-guided core biopsy breast	1		Varies
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative Radiation Level**

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 6: Multiple bilateral masses seen on screening mammogram. One or more masses suspicious, or a dominant mass is present. Next examination to perform. (See Appendix 3 in the original guideline document for additional steps in the workup of these patients.)

Radiologic Procedure	Rating	Comments	RRL*
Mammography diagnostic	9		☢☢
US breast	5	May proceed directly to US if mass in question is seen in two projections.	O
Mammography short-interval follow-up	1		☢☢
MRI breast without and with contrast	1		O
MRI breast without contrast	1		O
Image-guided core biopsy breast	1		Varies
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative Radiation Level**

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 7: Focal asymmetry or asymmetry (single-view finding) seen on screening mammogram. No priors available. Next examination to perform. (See Appendix 4 in the original guideline document for additional steps in the workup of these patients.)

Radiologic Procedure	Rating	Comments	RRL*
Mammography diagnostic	8		☢☢
Mammography short-interval follow-up	1		☢☢
Return to screening mammography	1		☢☢
US breast	1		O
MRI breast without and with contrast	1		O
MRI breast without contrast	1		O
Image-guided core biopsy breast	1		Varies
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative Radiation Level**

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 8: Focal asymmetry or asymmetry (single-view finding) seen on screening mammogram. New or enlarging from prior examinations. Next examination to perform. (See Appendix 4 in the original guideline document for additional steps in the workup of these patients.)

Radiologic Procedure	Rating	Comments	RRL*
Mammography diagnostic	9		☢☢
Mammography short-interval follow-up	1		☢☢
Return to screening mammography	1		☢☢
US breast	1		O
MRI breast without and with contrast	1		O
MRI breast without contrast	1		O
Image-guided core biopsy breast	1		Varies
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative Radiation Level**

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Summary of Literature Review

Introduction/Background

With improved imaging techniques, screening mammograms enable early detection of smaller cancers. Most lesions detected mammographically are benign. Noncalcified lesions of concern on screening mammograms include masses, bilateral masses, focal asymmetries, and architectural distortion. Benchmark data based on information from the Breast Cancer Surveillance Consortium (BCSC) reports a positive predictive value (PPV_3) in 33% of biopsies performed. The mean cancer detection rate reported for screening mammography is 4.7/1,000 mammograms, with a mean invasive cancer size of 13 mm.

Normal soft-tissue can simulate a mass or focal asymmetry, and additional mammographic and/or ultrasound (US) evaluation may be necessary to determine the presence of a true finding. Masses are three-dimensional structures with convex outward contours. Focal asymmetries are seen on two views but are non-mass-like, often with concave outward contours. If new or enlarging on screening mammography, these should be further evaluated with diagnostic imaging and possibly US. When a mass is detected mammographically, its shape, margin, density, and size should be assessed as outlined in the Breast Imaging Reporting and Data System: *ACR BI-RADS® Mammography, 4th Edition (ACR BI-RADS® Atlas)*.

Ultrasound

US can be used to evaluate the cystic versus solid nature of a breast mass. Adhering to strict criteria, this technique can separate cystic from solid masses with an accuracy approaching 100%. Using good-quality, high-frequency equipment, cysts as small as 2-3 mm in diameter can be

demonstrated. However, cysts that are smaller than 8 mm or deeper than 3 cm from the skin can be difficult to characterize as anechoic. After final mammographic evaluation, round or oval masses with circumscribed, partially obscured, indistinct, or microlobulated margins can be further investigated with US to characterize simple cysts, complicated cysts, complex cystic and solid masses, and solid masses. Solid masses can often be further subcategorized as either probably benign (allowing short-term surveillance rather than biopsy) or suspicious, based on multiple sonographic parameters. Masses with mammographic features that are suspicious or highly suggestive of malignancy, or masses with suspicious or typically benign calcifications, do not require US for assessment, although US can be used to guide needle biopsy if the mass is seen sonographically.

US is also useful in evaluating architectural distortions and asymmetries that cannot be dismissed as superimposed tissue after diagnostic mammographic evaluation. US can often confirm the suspicious nature of the finding and can guide biopsy. In cases where the diagnostic workup of such a finding fails to show a persistent suspicious lesion, US can provide additional confirmation of the benign nature of the initial finding when thorough scanning is negative or when a benign sonographic explanatory correlate can be found. However, if a suspicious mammographic finding remains after diagnostic evaluation, negative US should not dissuade biopsy. Elastography, which examines the viscoelastic properties of tissue, is being evaluated as a way to increase the specificity of US, especially regarding evaluation and management of solid masses.

Magnetic Resonance Imaging

The use of magnetic resonance imaging (MRI) to evaluate nonpalpable noncalcified mammographic lesions is controversial. It is not needed in cases where a finding can be fully and confidently evaluated using the routine methods described above. MRI lacks a sufficiently high negative predictive value (NPV) to allow dismissal of a finding deemed suspicious on routine diagnostic evaluation but negative on MRI. Therefore, MRI is not indicated for evaluating the vast majority of cases involving noncalcified mammographic findings. However, there may be a subset of equivocal or problem cases where MRI is of value. This group might include asymmetries and questioned architectural distortions where diagnostic mammography is inconclusive and there is no US correlate or definitive target for biopsy. In these selected cases, MRI may allow detection of a subtle cancer that might otherwise have been left to be followed or, when the MRI finding is negative, may add confidence to the decision to follow. However, as is seen with other MR indications, false positives unrelated to the initial site of concern can result in increased cost and unnecessary biopsies.

Biopsy

After appropriate work-up of a mammographically detected noncalcified suspicious lesion, which will usually include diagnostic mammography and US, a final assessment should be assigned according to the *ACR BI-RADS® Atlas*. Articles have validated the approach of following probably benign lesions (category 3), as outlined in the *ACR BI-RADS® Atlas*, to decrease the number of biopsies of benign lesions and potentially substantially reduce cost. If the noncalcified lesion is placed in category 4 or 5, a biopsy is warranted. This biopsy is most often performed as a percutaneous procedure using stereotactic or US guidance to obtain cores of tissue. Fine-needle aspiration biopsy is a less desirable approach to tissue sampling, requiring a trained cytopathologist for interpretation and showing suboptimal rates of accuracy and tissue sampling sufficiency compared to core needle biopsy. Percutaneous biopsy should be done with the goal of shortening the diagnostic process and/or providing a more cost-effective method of lesion diagnosis as compared with excisional biopsy. For example, if a solid mass is diagnosed as fibroadenoma on core biopsy and then undergoes surgical excision for any of a variety of reasons, we have added cost and lengthened the diagnostic procedure with no gain. On the other hand, a core biopsy may be used to provide histology for a category 5 lesion so that excision and sentinel-node biopsy can be done simultaneously, avoiding separate trips to the operating room.

Summary

- Screening mammography potentiates the detection of early, clinically occult cancers, with benchmark data demonstrating mean size at diagnosis to be 13 mm, and a detection rate of 4.7/1,000 screening examinations. While most lesions found on screening mammography are benign, a positive predictive value (PPV_3) of 33% can be achieved for lesions undergoing biopsy after diagnostic evaluation.
- Additional workup, including diagnostic mammography and/or US, may be required to differentiate suspicious findings, such as masses and asymmetries/focal asymmetries, from normal breast tissue. Application of *ACR BI-RADS® Atlas* criteria, terminology and assessments helps guide management and optimizes communication of findings and recommendations.
- US is a useful adjunctive tool in evaluation of abnormal mammographic findings, but requires use of good-quality, high-frequency equipment and application of strict criteria, as outlined in the *ACR BI-RADS® Atlas*. Breast US can help differentiate cysts from solid masses, aid in characterization of solid masses, and guide percutaneous biopsy. Elastography may improve specificity in evaluation of solid masses.
- Breast MRI may be useful as a problem-solving tool in a small, carefully selected group of patients who have inconclusive results after thorough diagnostic evaluation of mammographically detected noncalcified nonpalpable findings.
- Percutaneous biopsy of suspicious lesions can provide accurate tissue diagnosis at decreased cost, precluding the need for surgery in specific benign cases while allowing definitive single-stage surgical treatment in cases returned as malignant. Core needle biopsy, using either stereotactic or US guidance, is preferable to fine-needle aspiration cytology, based on sufficiency and accuracy of sampling.

Abbreviations

- MRI, magnetic resonance imaging
- US, ultrasound

Relative Radiation Level Designations

Relative Radiation Level*	Adult Effective Dose Estimate Range	Pediatric Effective Dose Estimate Range
O	0 mSv	0 mSv
☢	<0.1 mSv	<0.03 mSv
☢☢	0.1-1 mSv	0.03-0.3 mSv
☢☢☢	1-10 mSv	0.3-3 mSv
☢☢☢☢	10-30 mSv	3-10 mSv
☢☢☢☢☢	30-100 mSv	10-30 mSv
*RRL assignments for some of the examinations cannot be made, because the actual patient doses in these procedures vary as a function of a number of factors (e.g., region of the body exposed to ionizing radiation, the imaging guidance that is used). The RRLs for these examinations are designated as "Varies."		

Clinical Algorithm(s)

Algorithms are provided in Appendices 1, 2, 3, and 4 of the original guideline document for:

- Architectural distortion seen on screening mammogram
- Mass seen on screening mammogram (assuming mass has not previously been worked up)
- Multiple bilateral masses seen on screening mammogram
- Focal asymmetry or asymmetry (single-view finding) seen on screening mammogram

Scope

Disease/Condition(s)

- Nonpalpable breast masses (excluding calcifications)
- Breast cancer

Guideline Category

Diagnosis

Evaluation

Clinical Specialty

Family Practice

Internal Medicine

Obstetrics and Gynecology

Oncology

Radiology

Intended Users

Health Plans

Hospitals

Managed Care Organizations

Physicians

Utilization Management

Guideline Objective(s)

To evaluate the appropriateness of radiologic procedures for patients with nonpalpable breast masses

Target Population

Women with nonpalpable breast mass

Interventions and Practices Considered

1. Mammography
    - Diagnostic
    - Return to screening
    - Short-interval follow-up
2. Ultrasound (US) breast
3. Magnetic resonance imaging (MRI) breast
    - Without and with contrast
    - Without contrast
4. Image-guided core biopsy breast

Major Outcomes Considered

Utility of radiologic examinations in differential diagnosis

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Literature Search Procedure

The Medline literature search is based on keywords provided by the topic author. The two general classes of keywords are those related to the condition (e.g., ankle pain, fever) and those that describe the diagnostic or therapeutic intervention of interest (e.g., mammography, MRI).

The search terms and parameters are manipulated to produce the most relevant, current evidence to address the American College of Radiology Appropriateness Criteria (ACR AC) topic being reviewed or developed. Combining the clinical conditions and diagnostic modalities or therapeutic procedures narrows the search to be relevant to the topic. Exploding the term "diagnostic imaging" captures relevant results for diagnostic topics.

The following criteria/limits are used in the searches.

1. Articles that have abstracts available and are concerned with humans.
2. Restrict the search to the year prior to the last topic update or in some cases the author of the topic may specify which year range to use in the search. For new topics, the year range is restricted to the last 5 years unless the topic author provides other instructions.
3. May restrict the search to Adults only or Pediatrics only.
4. Articles consisting of only summaries or case reports are often excluded from final results.

The search strategy may be revised to improve the output as needed.

Number of Source Documents

The total number of source documents identified as the result of the literature search is not known.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Strength of Evidence Key

Category 1 - The conclusions of the study are valid and strongly supported by study design, analysis and results.

Category 2 - The conclusions of the study are likely valid, but study design does not permit certainty.

Category 3 - The conclusions of the study may be valid but the evidence supporting the conclusions is inconclusive or equivocal.

Category 4 - The conclusions of the study may not be valid because the evidence may not be reliable given the study design or analysis.

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

The topic author drafts or revises the narrative text summarizing the evidence found in the literature. American College of Radiology (ACR) staff draft an evidence table based on the analysis of the selected literature. These tables rate the strength of the evidence for all articles included in the narrative text.

The expert panel reviews the narrative text, evidence table, and the supporting literature for each of the topic-variant combinations and assigns an appropriateness rating for each procedure listed in the table. Each individual panel member forms his/her own opinion based on his/her interpretation of the available evidence.

More information about the evidence table development process can be found in the ACR Appropriateness Criteria® Evidence Table Development document (see the "Availability of Companion Documents" field).

Methods Used to Formulate the Recommendations

Expert Consensus (Delphi)

Description of Methods Used to Formulate the Recommendations

Modified Delphi Technique

The appropriateness ratings for each of the procedures included in the Appropriateness Criteria topics are determined using a modified Delphi methodology. A series of surveys are conducted to elicit each panelist's expert interpretation of the evidence, based on the available data, regarding the appropriateness of an imaging or therapeutic procedure for a specific clinical scenario. American College of Radiology (ACR) staff distributes surveys to the panelists along with the evidence table and narrative. Each panelist interprets the available evidence and rates each procedure. The surveys are completed by panelists without consulting other panelists. The ratings are a scale between 1 and 9, which is further divided into three categories: 1, 2, or 3 is defined as "usually not appropriate"; 4, 5, or 6 is defined as "may be appropriate"; and 7, 8, or 9 is defined as "usually appropriate." Each panel member assigns one rating for each procedure per survey round. The surveys are collected and the results are tabulated, de-identified and redistributed after each round. A maximum of three rounds are conducted. The modified Delphi technique enables each panelist to express individual interpretations of the evidence and his or her expert opinion without excessive bias from fellow panelists in a simple, standardized and economical process.

Consensus among the panel members must be achieved to determine the final rating for each procedure. Consensus is defined as eighty percent (80%) agreement within a rating category. The final rating is determined by the median of all the ratings once consensus has been reached. Up to three rating rounds are conducted to achieve consensus.

If consensus is not reached, the panel is convened by conference call. The strengths and weaknesses of each imaging procedure that has not reached consensus are discussed and a final rating is proposed. If the panelists on the call agree, the rating is accepted as the panel's consensus. The document is circulated to all the panelists to make the final determination. If consensus cannot be reached on the call or when the document is circulated, "No consensus" appears in the rating column and the reasons for this decision are added to the comment sections.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

The guideline developers reviewed published cost analyses.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The recommendations are based on analysis of the current literature and expert panel consensus.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Potential Harms

Magnetic resonance imaging (MRI) may allow detection of a subtle cancer that might otherwise have been left to be followed or, when the MRI finding is negative, may add confidence to the decision to follow. However, as is seen with other MR indications, false positives unrelated to the initial site of concern can result in increased cost and unnecessary biopsies.

Relative Radiation Level (RRL)

Potential adverse health effects associated with radiation exposure are an important factor to consider when selecting the appropriate imaging procedure. Because there is a wide range of radiation exposures associated with different diagnostic procedures, a relative radiation level indication has been included for each imaging examination. The RRLs are based on effective dose, which is a radiation dose quantity that is used to estimate population total radiation risk associated with an imaging procedure. Patients in the pediatric age group are at inherently higher risk from exposure, both because of organ sensitivity and longer life expectancy (relevant to the long latency that appears to accompany radiation exposure). For these reasons, the RRL dose estimate ranges for pediatric examinations are lower as compared to those specified for adults. Additional information regarding radiation dose assessment for imaging examinations can be found in the American College of Radiology (ACR) Appropriateness Criteria® Radiation Dose Assessment Introduction document (see the "Availability of Companion Documents" field).

Qualifying Statements

Qualifying Statements

The American College of Radiology (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 U.S. Food and Drug Administration (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.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Clinical Algorithm

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

Newell MS, D'Orsi C, Mahoney MC, Bailey L, Barke LD, Harvey JA, Hayes MK, Jokich PM, Lee S, Lehman CD, Mainiero MB, Mankoff DA, Patel SB, Reynolds HE, Sutherland ML, Haffty BG, Expert Panel on Breast Imaging. ACR Appropriateness CriteriaÂ® nonpalpable mammographic findings (excluding calcifications). [online publication]. Reston (VA): American College of Radiology (ACR); 2012. 10 p. [29 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

1996 (revised 2012)

Guideline Developer(s)

American College of Radiology - Medical Specialty Society

Source(s) of Funding

The American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria®.

Guideline Committee

Committee on Appropriateness Criteria, Expert Panel on Breast Imaging

Composition of Group That Authored the Guideline

Panel Members: Mary S. Newell, MD (*Principal Author and Panel Vice-chair*); Carl D'Orsi, MD (*Co-Author*); Mary C. Mahoney, MD (*Panel Chair*); Lisa Bailey, MD; Lora D. Barke, DO; Jennifer A. Harvey, MD; Mary K. Hayes, MD; Peter M. Jokich, MD; Su-Ju Lee, MD; Constance D. Lehman, MD, PhD; Martha B. Mainiero, MD; David A. Mankoff, MD, PhD; Samir B. Patel, MD; Handel E. Reynolds, MD; M. Linda Sutherland, MD; Bruce G. Haffty, MD

Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Newell MS, Birdwell RL, D'Orsi CJ, Bassett LW, Mahoney MC, Bailey L, Berg WA, Harvey JA, Herman CR, Kaplan SS, Liberman L, Mendelson EB, Parikh JR, Rabinovitch R, Rosen EL, Sutherland ML, Expert Panel on Breast Imaging. ACR Appropriateness Criteria® nonpalpable mammographic findings (excluding calcifications). [online publication]. Reston (VA): American College of Radiology (ACR); 2010. 11 p.

Guideline Availability

Electronic copies: Available from the American College of Radiology (ACR) Web site.

Print copies: Available from the American College of Radiology, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

Availability of Companion Documents

The following are available:

- ACR Appropriateness Criteria®. Overview. Reston (VA): American College of Radiology; 2 p. Electronic copies: Available in Portable Document Format (PDF) from the American College of Radiology (ACR) Web site.
- ACR Appropriateness Criteria®. Literature search process. Reston (VA): American College of Radiology; 1 p. Electronic copies: Available in PDF from the ACR Web site.
- ACR Appropriateness Criteria®. Evidence table development – diagnostic studies. Reston (VA): American College of Radiology; 2013 Nov. 3 p. Electronic copies: Available in PDF from the ACR Web site.
- ACR Appropriateness Criteria®. Radiation dose assessment introduction. Reston (VA): American College of Radiology; 2 p. Electronic copies: Available in PDF from the ACR Web site.
- ACR Appropriateness Criteria®. Procedure information. Reston (VA): American College of Radiology; 1 p. Electronic copies: Available in PDF from the ACR Web site.
- ACR Appropriateness Criteria® nonpalpable mammographic findings (excluding calcifications). Evidence table. Reston (VA): American College of Radiology; 2012. 9 p. Electronic copies: Available from the ACR Web site.

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI on February 13, 2006. This NGC summary was updated by ECRI Institute on November 8, 2010 and on April 17, 2013.

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