



## Complete Summary

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### GUIDELINE TITLE

ACR Appropriateness Criteria™ for diagnostic imaging in patients with claudication.

### BIBLIOGRAPHIC SOURCE(S)

Bettmann MA, Boxt LM, Gomes AS, Grollman J, Henkin RE, Higgins CB, Kelley MJ, Needleman L, Pagan-Marin H, Polak JF, Stanford W, Levin DC, Gardiner GA. Diagnostic imaging in patients with claudication. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun; 215(Suppl): 61-5. [44 references]

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## SCOPE

### DISEASE/CONDITION(S)

Claudication

### GUIDELINE CATEGORY

Diagnosis

### CLINICAL SPECIALTY

Family Practice  
Geriatrics  
Internal Medicine  
Radiology

### INTENDED USERS

Health Plans  
Hospitals  
Managed Care Organizations  
Physicians  
Utilization Management

#### GUIDELINE OBJECTIVE(S)

To evaluate the appropriateness of initial radiologic examinations for patients with claudication

#### TARGET POPULATION

Patients with claudication

#### INTERVENTIONS AND PRACTICES CONSIDERED

1. Physiological non invasive tests
2. Peripheral angiography
3. Aortic angiography
4. Magnetic resonance angiography
5. Duplex ultrasound (spectral + color)
6. Doppler ultrasound (spectral only)
7. Lumbosacral spine plain film
8. Computed tomographic angiography of aortoiliac system
9. Echocardiography
10. Venous duplex ultrasound
11. Cine angiography

#### MAJOR OUTCOMES CONSIDERED

Utility of radiologic examinations in differential diagnosis

## METHODOLOGY

#### METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

#### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches of recent peer-reviewed medical journals, primarily using the National Library of Medicine's MEDLINE database. The developer identified and collected the major applicable articles

#### 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

Expert Consensus (Delphi Method)  
Weighting According to a Rating Scheme (Scheme Not Given)

## RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

## METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on analysis of the current literature. These tables serve as a basis for developing a narrative specific to each clinical condition.

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed to reach agreement in the formulation of the Appropriateness Criteria. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the topic leader(s). Questionnaires are completed by the participants in their own professional setting without influence of the other members. Voting is conducted using a scoring system from 1-9, indicating the least to the most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds is conducted and opinions are unified to the highest degree possible. Eighty (80) percent agreement is considered a consensus. If consensus cannot be reached by this method, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible.

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

#### 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 and the Chair of the ACR Board of Chancellors.

### RECOMMENDATIONS

#### MAJOR RECOMMENDATIONS

ACR Appropriateness Criteria™

Clinical Condition: Diagnostic Imaging in Patients with Claudication

Radiologic Exam Procedure	Appropriateness Rating	Comments
Physiological non invasive tests	9	
Peripheral Angiography	8	
Aortic Angiography	7	
Magnetic Resonance Angiography	7	Some limitations currently still exist, due to technology (including available software), expertise, and experience.
Duplex Ultrasound (spectral + color)	6	
Doppler Ultrasound (spectral only)	5	
Lumbosacral Spine Plain Film	3	
Computed Tomographic Angiography of Aortoiliac system	3	
Echocardiography	2	

Venous Duplex Ultrasound	2	
Cine Angiography	1	
<u>Appropriateness Criteria Scale</u> 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

### Summary

Multiple clinical and technical factors are involved in determining the proper timing and technique for imaging the lower extremity arterial system in patients with claudication. The purpose of imaging studies is to define the location and extent of vascular lesions before a percutaneous or surgical revascularization procedure. The clinical success of these vascular procedures depends to a large extent on accurate and complete visualization of the entire lower extremity arterial system, or at least of the entire symptomatic extremity and the pelvic vasculature.

Many noninvasive vascular imaging methods have recently been developed and have been shown to be useful in certain clinical situations. All, however, currently have important practical limitations. Although the role of these techniques in evaluating patients with peripheral vascular disease continues to evolve, contrast angiography remains the gold standard. The noninvasive modalities, particularly Duplex examinations and magnetic resonance angiography, supplemented by physical examination and history, can often supply all the information that is necessary to confirm or exclude the presence of peripheral vascular disease as the cause of claudication. Further, they can provide sufficient information to accurately plan medical, surgical, or catheter-directed treatment.

### CLINICAL ALGORITHM(S)

Algorithms were not developed from criteria guidelines.

## 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

Appropriate selection of initial radiologic exam procedures for patients with claudication

#### POTENTIAL HARMS

None identified.

### QUALIFYING STATEMENTS

#### QUALIFYING STATEMENTS

An 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 exams 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.

### INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

#### IOM CARE NEED

Getting Better

#### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

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### ADAPTATION

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

### DATE RELEASED

1995 (revised 1999)

### 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

ACR Appropriateness Criteria™ Committee, Expert Panel on Cardiovascular Imaging.

### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Names of Panel Members: Michael A. Bettmann, MD; Lawrence M. Boxt, MD; Antoinette S. Gomes, MD; Julius Grollman, MD; Robert E. Henkin, MD; Charles B. Higgins, MD; Michael J. Kelley, MD; Laurence Needleman, MD; Heriberto Pagan-Marin, MD; Joseph F. Polak, MD, MPH; William Stanford, MD; David C. Levin, MD; Geoffrey A. Gardiner, MD

### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

### GUIDELINE STATUS

This is the current release of the guideline. It is a revision of a previously issued version (Appropriateness criteria for diagnostic imaging in patients with claudication. Reston [VA]: American College of Radiology [ACR]; 1995. 5 p. [ACR Appropriateness Criteria™]).

The ACR Appropriateness Criteria™ are reviewed after five years, if not sooner, depending upon introduction of new and highly significant scientific evidence. The next review date for this topic is 2004.

#### GUIDELINE AVAILABILITY

Electronic copies: Available (in PDF format) from the [American College of Radiology \(ACR\) Web site](#).

Print copies: Available from ACR, 1891 Preston White Drive, Reston, VA 20191.  
Telephone: (703) 648-8900.

#### AVAILABILITY OF COMPANION DOCUMENTS

None available

#### PATIENT RESOURCES

None available

#### NGC STATUS

This summary was completed by ECRI on February 20, 2001. The information was verified by the guideline developer on March 14, 2001.

#### COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions.

Appropriate instructions regarding downloading, use and reproduction of the American College of Radiology (ACR) Appropriateness Criteria™ guidelines may be found at the American College of Radiology's Web site [www.acr.org](http://www.acr.org).

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