

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

Chronic Ankle Pain

Variant 1: Adult. Chronic ankle pain. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations									
							1	2	3	4	5	6	7	8	9	
Radiography ankle	Usually appropriate	Limited	⊕ <0.1 mSv	⊕ <0.03 mSv [ped]	9	9	1	0	0	0	0	0	0	0	0	10
		References		Study Quality												
		56 (24067992)		3												
		18 (24560546)		3												
CT ankle with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	1	0	0	0	0	0	
CT ankle without IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	6	1	2	2	0	0	0	0	0	
CT ankle without and with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	1	0	0	0	0	0	
MRI ankle without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	8	1	1	1	0	0	0	0	0	
MRI ankle without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	9	0	1	1	0	0	0	0	0	
		References		Study Quality												
		79 (15895226)		3												
		84 (21119941)		3												
		32 (20729435)		4												

			67 (26515772)													
			50 (12682790)													
Bone scan ankle	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	9	0	2	0	0	0	0	0	0	0
US ankle	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	8	1	1	0	0	0	1	0	0	0
			References				Study Quality									
			38 (20489099)				2									
			39 (18064426)				3									
			79 (15895226)				3									
			56 (24067992)				3									

Variant 2: Adult. Chronic ankle pain. Suspected osteoarthritis or early impingement. Radiographs performed. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations									
							1	2	3	4	5	6	7	8	9	
MRI ankle without IV contrast	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	8	8	0	0	0	0	0	3	1	2	5	
CT ankle without IV contrast	Usually appropriate	Limited	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	7	7	0	0	0	0	0	1	6	4	0	
CT arthrography ankle	Usually not appropriate	Limited	⊕ <0.1 mSv		1	1	7	0	0	3	0	1	0	0	0	
CT ankle with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	1	0	0	0	0	0	
CT ankle without and with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	1	0	0	0	0	0	
MR arthrography ankle	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	7	0	1	1	1	1	0	0	0	

MRI ankle without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	7	1	1	1	1	0	0	0	0
		References		Study Quality											
		79 (15895226)		3											
		84 (21119941)		3											
		32 (20729435)		4											
		67 (26515772)		3											
		50 (12682790)		2											
Bone scan ankle	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	9	0	2	0	0	0	0	0	0
		References		Study Quality											
		51 (21477540)		2											
US ankle	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	6	0	2	1	1	0	1	0	0
		References		Study Quality											
		39 (18064426)		3											
		79 (15895226)		3											
		56 (24067992)		3											

Variant 3: Adult. Chronic ankle pain. Suspected osteochondral lesion. Radiographs performed. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI ankle without IV contrast	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	0	0	0	0	2	1	8
CT ankle without IV contrast	Usually appropriate	Limited	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	7	7	0	0	0	0	1	4	6	0	0
CT arthrography ankle	May be appropriate	Limited	⊕ <0.1 mSv		5	5	1	0	0	2	4	1	2	1	0

CT ankle with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	0	1	0	0	0	0
CT ankle without and with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	0	1	0	0	0	0
MR arthrography ankle	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	8	0	1	0	1	1	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	8	0	0	2	1	0	0	0	0
		References	Study Quality												
		67 (26515772)	3												
		50 (12682790)	2												
Bone scan ankle	Usually not appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	8	0	2	1	0	0	0	0	0
		References	Study Quality												
		51 (21477540)	2												
US ankle	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	9	0	1	0	0	0	1	0	0
		References	Study Quality												
		39 (18064426)	3												
		56 (24067992)	3												

Variant 4: Adult. Chronic ankle pain. Suspected tarsal coalition. Radiographs performed. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT ankle without IV contrast	Usually appropriate	Limited	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	9	9	0	0	1	0	2	0	0	2	6

MRI ankle without IV contrast	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	1	0	0	0	1	3	6
CT arthrography ankle	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv		1	1	8	1	1	1	0	0	0	0	0
CT ankle with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	1	0	0	0	0	0
CT ankle without and with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	1	0	0	0	0	0
MR arthrography ankle	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	8	1	1	1	0	0	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	8	1	1	1	0	0	0	0	0

References	Study Quality
32 (20729435)	4
67 (26515772)	3
50 (12682790)	2

Bone scan ankle	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	8	1	2	0	0	0	0	0	0
US ankle	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	9	0	1	0	0	1	0	0	0

References	Study Quality
39 (18064426)	3
56 (24067992)	3

Variant 5: Adult. Chronic ankle pain. Suspected instability or ligamentous injury. Radiographs performed. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI ankle without IV contrast	Usually	Limited	○ 0 mSv	○ 0 mSv	9	9	0	0	0	1	0	0	0	2	8

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations													
							1	2	3	4	5	6	7	8	9					
	appropriate			[ped]																
Radiography ankle stress views	May be appropriate	Strong	⊕ <0.1 mSv	⊕ <0.03 mSv [ped]	6	6	0	0	0	1	2	3	1	3	1					
		References		Study Quality																
		56 (24067992)		3																
US ankle	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	5	5	0	1	0	1	8	1	0	0	0					
		References		Study Quality																
		39 (18064426)		3																
		56 (24067992)		3																
CT ankle without IV contrast	Usually not appropriate	Limited	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	2	2	5	2	1	1	2	0	0	0	0					
CT arthrography ankle	Usually not appropriate	Moderate	⊕ <0.1 mSv		1	1	6	1	0	3	0	1	0	0	0					
CT ankle with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	8	1	1	1	0	0	0	0	0					
CT ankle without and with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	8	1	1	1	0	0	0	0	0					
MR arthrography ankle	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	9	1	1	0	0	0	0	0	0					
MRI ankle without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	7	1	1	1	1	0	0	0	0					
Bone scan ankle	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	9	0	2	0	0	0	0	0	0					

Variant 6: Adult. Chronic ankle pain. Suspected tendon pathology. Radiographs performed. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI ankle without IV contrast	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	0	1	0	0	0	2	8
US ankle	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	8	8	0	0	0	0	0	2	3	3	3
		References		Study Quality											
		39 (18064426)		3											
CT arthrography ankle	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv		1	1	7	0	1	2	1	0	0	0	0
CT ankle with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	1	0	0	0	0	0
CT ankle without IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	8	0	1	1	1	0	0	0	0
CT ankle without and with IV contrast	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	9	0	1	1	0	0	0	0	0
MR arthrography ankle	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	7	0	1	3	0	0	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	8	0	0	1	2	0	0	0	0
Bone scan ankle	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	9	0	2	0	0	0	0	0	0

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.