



US ankle	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	0	0	0	0	0	0	0	0	0
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**Variant 2: Chronic ankle pain. Multiple sites of degenerative joint disease in the hindfoot detected by ankle radiographs. Next study.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Image-guided anesthetic injection hindfoot/ankle	May be appropriate	Limited	Varies		6	6	0	0	0	0	0	0	0	0	0

References	Study Quality
23 (27468671)	4
24 (19321101)	3
25 (25542943)	3
11 (23487336)	4
21 (8751679)	4
22 (9240528)	4

MRI ankle and hindfoot without IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	5	5	0	0	0	0	0	0	0	0	0
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References	Study Quality
13 (11870444)	4
14 (20483139)	3
15 (19685050)	3

CT ankle and hindfoot without IV contrast	May be appropriate	Limited	⊕ <0.1 mSv		4	4	0	0	0	0	0	0	0	0	0
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References	Study Quality
5 (15686236)	2

CT ankle and hindfoot with IV contrast	Usually not appropriate	Limited	⊕ <0.1 mSv		1	1	0	0	0	0	0	0	0	0	0
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References	Study Quality
5 (15686236)	2

CT ankle and hindfoot without and with IV contrast	Usually not appropriate	Limited	⊕ <0.1 mSv		1	1	0	0	0	0	0	0	0	0	0	0
		References			Study Quality											
		5 (15686236)			2											
X-ray arthrography ankle and hindfoot	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv		1	1	0	0	0	0	0	0	0	0	0	0
MRI ankle and hindfoot without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	0	0	0	0	0	0	0	0	0	0
		References			Study Quality											
		13 (11870444)			4											
		14 (20483139)			3											
		15 (19685050)			3											
Bone scan hindfoot/ankle	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv		1	1	0	0	0	0	0	0	0	0	0	0
US ankle and hindfoot	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	0	0	0	0	0	0	0	0	0	0
CT arthrography ankle and hindfoot	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv		1	1	0	0	0	0	0	0	0	0	0	0
MR arthrography ankle and hindfoot	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	0	0	0	0	0	0	0	0	0	0

**Variant 3: Chronic ankle pain. Ankle radiographs normal, suspected osteochondral lesion. Next 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	Strong	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	0	0	0	0	0	0	0	0
		References			Study Quality											
		28 (8848747)			3											
		30 (18635628)			4											





45 (19945971)	4
39 (8915043)	3
44 (15385290)	3
49 (21570324)	4
50 (23966263)	3
16 (3420263)	3

US ankle	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	8	8	0	0	0	0	0	0	0	0	0
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References	Study Quality
36 (9544608)	3
37 (15895226)	3
38 (16085620)	3
45 (19945971)	4
39 (8915043)	3
40 (11477244)	3
44 (15385290)	3
41 (26235856)	2
42 (22338951)	2
43 (25448138)	2
35 (24224598)	4
10 (23685674)	4
11 (23487336)	4

US-guided anesthetic injection ankle tendon sheath	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	0	0	0	0	0	0
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References	Study Quality
11 (23487336)	4

MRI ankle without and with IV contrast	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	3	3	0	0	0	0	0	0	0	0	0
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References	Study Quality
37 (15895226)	3
48 (21119941)	3

45 (19945971)	4
39 (8915043)	3
44 (15385290)	3
49 (21570324)	4
50 (23966263)	3
16 (3420263)	3

CT arthrography ankle	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv		1	1	0	0	0	0	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	0	0	0	0	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	0	0	0	0	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	0	0	0	0	0	0	0	0	0
Fluoroscopy tenography ankle	Usually not appropriate	Limited	⊕ <0.1 mSv		1	1	0	0	0	0	0	0	0	0	0

References	Study Quality
51 (11159075)	4

X-ray arthrography ankle	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv		1	1	0	0	0	0	0	0	0	0	0
MR arthrography ankle	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	0	0	0	0	0	0	0	0	0
Bone scan ankle	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	0	0	0	0	0	0	0	0	0
Radiography ankle stress views	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕ <0.03 mSv [ped]	1	1	0	0	0	0	0	0	0	0	0

**Variant 5: Chronic ankle pain. Ankle radiographs normal or nonspecific, suspected ankle instability. Next study.**





2 (24560546)	3
61 (26869035)	2
3 (22224329)	3
4 (20493798)	4
15 (19685050)	3

CT arthrography ankle	May be appropriate	Limited	☼ <0.1 mSv		5	5	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
58 (20817846)	3

CT ankle with IV contrast	Usually not appropriate	Expert Consensus	☼ <0.1 mSv	☼☼ 0.03-0.3 mSv [ped]	1	1	0	0	0	0	0	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	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
X-ray arthrography ankle	Usually not appropriate	Expert Consensus	☼ <0.1 mSv		1	1	0	0	0	0	0	0	0	0	0	0
Image-guided anesthetic injection ankle	Usually not appropriate	Expert Consensus	Varies		1	1	0	0	0	0	0	0	0	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	0	0	0	0	0	0	0	0	0	0

References	Study Quality
57 (15256624)	4
54 (12616009)	3
55 (14743024)	3
56 (11128010)	4
53 (25539277)	3
52 (22078461)	3
14 (20483139)	3



				References	Study Quality													
				70 (9275907)	3													
				72 (18064426)	3													
CT ankle without IV contrast	May be appropriate	Limited	☼ <0.1 mSv	☼☼☼ 0.03-0.3 mSv [ped]	5	5	0	0	0	2	10	2	2	1	0			
				References	Study Quality													
				62 (10796931)	4													
Image-guided anesthetic injection ankle	May be appropriate (Disagreement)	Expert Opinion	Varies		5	5	0	3	3	4	4	1	0	2	0			
				References	Study Quality													
				78 (16362423)	4													
				79 (10847526)	3													
3-phase bone scan with SPECT or SPECT/CT ankle	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	8	2	0	3	3	0	0	0	0			
				References	Study Quality													
				7 (23211997)	3													
MRI ankle without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	2	2	8	3	4	2	0	0	0	0	0			
				References	Study Quality													
				73 (16949527)	3													
				68 (11856682)	4													
				64 (10550534)	4													
				67 (15488852)	4													
				76 (20729435)	4													
				62 (10796931)	4													
				75 (14696227)	2													
				74 (20727312)	3													
CT ankle with IV contrast	Usually not appropriate	Limited	☼ <0.1 mSv	☼☼☼ 0.03-0.3 mSv [ped]	1	1	14	2	0	0	0	0	0	0	0			

		References	Study Quality												
		62 (10796931)	4												
CT ankle without and with IV contrast	Usually not appropriate	Limited	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	1	1	14	0	2	0	0	0	0	0	0
		References	Study Quality												
		62 (10796931)	4												
Radiography ankle stress views	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕ <0.03 mSv [ped]	1	1	0	0	0	0	0	0	0	0	0
X-ray arthrography ankle	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv		1	1	0	0	0	0	0	0	0	0	0

**Variant 7: Chronic ankle pain. Ankle radiographs normal, pain of uncertain etiology. Next 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	0	0	0
		References	Study Quality												
		82 (17015602)	3												
		80 (21343690)	4												
		81 (17099238)	4												
		13 (11870444)	4												
CT ankle without IV contrast	May be appropriate	Limited	⊕ <0.1 mSv	⊕⊕ 0.03-0.3 mSv [ped]	5	5	0	0	0	0	11	4	2	0	0
		References	Study Quality												
		85 (15333345)	3												
		80 (21343690)	4												
Bone scan with SPECT or SPECT/CT ankle	May be appropriate (Disagreement)	Expert Opinion	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	5	5	2	3	3	2	4	3	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](http://www.acr.org/ac).