American College of Radiology
ACR Appropriateness Criteria®

Acute Trauma to the Ankle

Variant 1: **Adult or child >5 years old. Patient meets Ottawa Ankle Rules: 1. Inability to bear weight immediately after the injury, OR 2.Point tenderness over the medial malleolus, the posterior edge or inferior tip of the lateral malleolus, talus, or calcaneus, OR 3. Inability to ambulate for 4 steps in the emergency department.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
X-ray ankle	Usually appropriate		☢ <0.1 mSv		9	n/a	0	0	0	0	0	0	0	0	0

Variant 2: **Adult or child >5 years old. Acute injury to the ankle; does not meet the Ottawa Ankle Rules. No point tenderness over the malleoli, talus, or calcaneus on physical examination. Able to walk. Neurologically intact (including no peripheral neuropathy). First study.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
X-ray ankle	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle without IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

MRI ankle without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
US ankle	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 3: Adult or child >5 years old. Acute injury to the ankle. Does not meet Ottawa Ankle Rules. Patient is not neurologically intact and/or has a peripheral neuropathy that involves the ankle and foot. First study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
X-ray ankle	Usually appropriate		☢ <0.1 mSv		9	n/a	0	0	0	0	0	0	0	0	0
CT ankle without IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
US ankle	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 4: Adult or child >5 years old. Acute injury to the ankle with persistent pain. Radiographs not obtained at time of injury. Initial study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
X-ray ankle	Usually appropriate		☢ <0.1 mSv		9	n/a	0	0	0	0	0	0	0	0	0
CT ankle without IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
US ankle	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 5: Adult or child >5 years old. Acute injury to the ankle with >1 week persistent pain. Initial radiographs negative.

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	May be appropriate		O 0 mSv	O 0 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0
X-ray ankle	May be appropriate		☢ <0.1 mSv		5	n/a	0	0	0	0	0	0	0	0	0
CT ankle without IV contrast	May be appropriate		☢ <0.1 mSv		5	n/a	0	0	0	0	0	0	0	0	0
US ankle	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0

CT ankle without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 6: Adult or child >5 years old. Acute injury to the ankle. Radiographs demonstrate talus fracture. Next 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		☢ <0.1 mSv		9	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without IV contrast	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
X-ray ankle Broden's view	May be appropriate		☢ <0.1 mSv		5	n/a	0	0	0	0	0	0	0	0	0
CT ankle without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 7: Adult or child >5 years old. Acute injury to the ankle. Radiographs suggest an osteochondral injury. 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		O 0 mSv	O 0 mSv	8	n/a	0	0	0	0	0	0	0	0	0

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
	appropriate			[ped]											
CT ankle without IV contrast	May be appropriate		☢ <0.1 mSv		5	n/a	0	0	0	0	0	0	0	0	0
CT ankle without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 8: Adult or child >5 years old. Acute injury to the ankle. Radiographs and/or physical examination suggest syndesmotic injury. Next study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
X-ray tibia/fibula	Usually appropriate		☢ <0.1 mSv	☢ <0.03 mSv [ped]	9	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	8	n/a	0	0	0	0	0	0	0	0	0
CT ankle without IV contrast	May be appropriate		☢ <0.1 mSv		5	n/a	0	0	0	0	0	0	0	0	0
CT ankle without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT ankle with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MRI ankle without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	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.**