American College of Radiology
ACR Appropriateness Criteria®

Chronic Extremity Joint Pain–Suspected Inflammatory Arthritis

Variant 1: Chronic extremity joint pain. Suspect rheumatoid arthritis.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography appendicular skeleton area of interest	Usually appropriate		☢ <0.1 mSv		9	n/a	0	0	0	0	0	0	0	0	0
US appendicular skeleton area of interest	Usually appropriate		O 0 mSv	O 0 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0
MRI appendicular skeleton area of interest without IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0
MRI appendicular skeleton area of interest without and with IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0
CT appendicular skeleton area of interest without IV contrast	May be appropriate		Varies	Varies	4	n/a	0	0	0	0	0	0	0	0	0
CT appendicular skeleton area of interest with IV contrast	Usually not appropriate		Varies	Varies	3	n/a	0	0	0	0	0	0	0	0	0
FDG-PET/CT whole body	Usually not appropriate		☢☢☢☢ 10-30 mSv		2	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan whole body	Usually not appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	2	n/a	0	0	0	0	0	0	0	0	0
CT appendicular skeleton area of interest without and with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0

Variant 2: Chronic extremity joint pain. Suspect seronegative spondyloarthropathy.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography appendicular skeleton area of interest	Usually appropriate		☢ <0.1 mSv		9	n/a	0	0	0	0	0	0	0	0	0
US appendicular skeleton area of interest	Usually appropriate		O 0 mSv	O 0 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0
MRI appendicular skeleton area of interest without and with IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0
MRI appendicular skeleton area of interest 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
CT appendicular skeleton area of interest without IV contrast	May be appropriate		Varies	Varies	4	n/a	0	0	0	0	0	0	0	0	0
CT appendicular skeleton area of interest with IV contrast	Usually not appropriate		Varies	Varies	3	n/a	0	0	0	0	0	0	0	0	0
FDG-PET/CT whole body	Usually not appropriate		☢☢☢☢ 10-30 mSv		2	n/a	0	0	0	0	0	0	0	0	0
CT appendicular skeleton area of interest without and with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan whole body	Usually not appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 3: Chronic extremity joint pain. Suspect gout.

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
Radiography appendicular skeleton area of interest	Usually appropriate		☢ <0.1 mSv		9	n/a	0	0	0	0	0	0	0	0	0
US appendicular skeleton area of interest	Usually appropriate		O 0 mSv	O 0 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0
CT appendicular skeleton area of interest without IV contrast	Usually appropriate		Varies	Varies	7	n/a	0	0	0	0	0	0	0	0	0
MRI appendicular skeleton area of interest 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
MRI appendicular skeleton area of interest without and with IV contrast	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
CT appendicular skeleton area of interest without and with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
CT appendicular skeleton area of interest with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
FDG-PET/CT whole body	Usually not appropriate		☢☢☢☢ 10-30 mSv		1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan whole body	Usually not appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 4: Chronic extremity joint pain. Suspect calcium pyrophosphate dihydrate disease (pseudogout).

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography area of interest	Usually appropriate		Varies	Varies	9	n/a	0	0	0	0	0	0	0	0	0

US area of interest	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
CT area of interest without IV contrast	May be appropriate		Varies	Varies	5	n/a	0	0	0	0	0	0	0	0	0
MRI area of interest 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
MRI area of interest without and with IV contrast	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
CT area of interest without and with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
CT area of interest with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan whole body	Usually not appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
FDG-PET/CT whole body	Usually not appropriate		☢☢☢☢ 10-30 mSv		1	n/a	0	0	0	0	0	0	0	0	0

Variant 5: Chronic extremity joint pain. Suspect erosive osteoarthritis.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography area of interest	Usually appropriate		Varies	Varies	9	n/a	0	0	0	0	0	0	0	0	0
US area of interest	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
MRI area of interest 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
MRI area of interest without and with IV contrast	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0

CT area of interest without IV contrast	May be appropriate		Varies	Varies	4	n/a	0	0	0	0	0	0	0	0	0
CT area of interest without and with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
CT area of interest with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan whole body	Usually not appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
FDG-PET/CT whole body	Usually not appropriate		☢☢☢☢ 10-30 mSv		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.**