American College of Radiology
ACR Appropriateness Criteria®

Chronic Wrist Pain

Variant 1: Chronic wrist pain. With or without prior injury. Best initial study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography wrist	Usually appropriate		☢ <0.1 mSv		9	n/a	0	0	0	0	0	0	0	0	0
CT arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
MRI wrist 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 wrist 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
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	n/a	0	0	0	0	0	0	0	0	0

US wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	14	0	0	0	0	0	0	0	0

Variant 2: Chronic wrist pain. Routine radiographs normal or nonspecific. Persistent symptoms. Next study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI wrist without IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	9	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	May be appropriate		O 0 mSv	O 0 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
CT arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MRI wrist 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
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	n/a	0	0	0	0	0	0	0	0	0
US wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	12	0	0	2	0	0	0	0	0

Variant 3: Chronic wrist pain. Routine radiographs normal or nonspecific. Suspect inflammatory arthritis. Next study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI wrist without and with IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	9	n/a	0	0	0	0	0	0	0	0	0
MRI wrist without IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0
US wrist	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	1	9	2	0	0	1
CT wrist without IV contrast	Usually not appropriate		☢ <0.1 mSv		3	n/a	0	0	0	0	0	0	0	0	0
CT arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	n/a	0	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	13	0	0	1	0	0	0	0	0

Variant 4: Chronic wrist pain. Radiographs normal or show nonspecific arthritis. Exclude infection. Next study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Aspiration wrist	Usually appropriate		Varies	Varies	9	n/a	0	0	0	0	0	0	0	0	0
MRI wrist without and with IV contrast	May be appropriate (Disagreement)		O 0 mSv	O 0 mSv [ped]	5	3	6	0	1	0	3	1	1	0	1
US wrist	May be appropriate (Disagreement)		O 0 mSv	O 0 mSv [ped]	5	3	5	0	2	0	4	1	1	0	0
CT arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	1	12	0	1	0	1	0	0	0	0
CT wrist without IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
MRI wrist 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
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	n/a	0	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	14	0	0	0	0	0	0	0	0

Variant 5: Ulnar-sided chronic wrist pain. Radiographs normal or nonspecific. Next study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI wrist without IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	9	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	Usually appropriate		O 0 mSv	O 0 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0
CT arthrography wrist	May be appropriate		☢ <0.1 mSv		5	5	1	0	0	1	7	1	3	1	0
MRI wrist without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	3	3	5	0	4	2	1	2	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		3	n/a	0	0	0	0	0	0	0	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	n/a	0	0	0	0	0	0	0	0	0
US wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 6: Radial-sided chronic wrist pain. Radiographs normal or nonspecific. Next study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI wrist without IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	9	n/a	0	0	0	0	0	0	0	0	0

CT arthrography wrist	May be appropriate		☢ <0.1 mSv		6	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	May be appropriate		O 0 mSv	O 0 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0
US wrist	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	5	0	0	1	0	11	1	0	0	0
MRI wrist without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	3	3	5	2	2	0	5	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		3	n/a	0	0	0	0	0	0	0	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	n/a	0	0	0	0	0	0	0	0	0

Variant 7: Chronic wrist pain. Radiographs normal or nonspecific. Suspect Kienböck's disease. Next study.

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

Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		2	n/a	0	0	0	0	0	0	0	0	0
CT arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
US wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	14	0	0	0	0	0	0	0	0

Variant 8: Chronic wrist pain. Kienböck's disease on radiographs. Next study.

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

CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	n/a	0	0	0	0	0	0	0	0	0
US wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	14	0	0	0	0	0	0	0	0

Variant 9: Chronic wrist pain. Palpable mass or suspected occult ganglion cyst. Radiographs normal or nonspecific. Next study.

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

MR arthrography wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	n/a	0	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	13	0	1	0	0	0	0	0	0

Variant 10: Chronic wrist pain. Suspect occult fracture or stress fracture. Radiographs nondiagnostic. Next study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI wrist without IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	9	n/a	0	0	0	0	0	0	0	0	0
CT wrist without IV contrast	Usually appropriate		☢ <0.1 mSv		7	n/a	0	0	0	0	0	0	0	0	0
Radiography wrist additional views	May be appropriate		☢ <0.1 mSv		6	6	0	0	0	0	4	5	2	0	2
Tc-99m bone scan with SPECT/CT wrist	May be appropriate		☢☢☢ 1-10 mSv		5	5	0	0	1	1	8	0	2	0	1
CT arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
MRI wrist 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 wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	13	0	0	0	1	0	0	0	0

Variant 11: Chronic wrist pain. Radiographs show old scaphoid fracture. Evaluate for nonunion, malunion, osteonecrosis, or post-traumatic osteoarthritis. Next study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT wrist without IV contrast	Usually appropriate		☢ <0.1 mSv		8	8	1	0	0	0	1	0	3	3	6
MRI wrist without IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	1	3	4	4	2
MRI wrist without and with IV contrast	May be appropriate		O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	0	5	3	1	1	3
CT arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	10	1	1	0	1	0	1	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	n/a	0	0	0	0	0	0	0	0	0
MR arthrography wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	n/a	0	0	0	0	0	0	0	0	0
US wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	13	0	1	0	0	0	0	0	0

Variant 12: Chronic wrist pain. Radiographs normal or nonspecific. Suspect carpal tunnel syndrome. Next study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US wrist	May be appropriate		O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	1	5	3	0	1	3
MRI wrist without IV contrast	May be appropriate		O 0 mSv	O 0 mSv [ped]	5	5	0	1	0	0	6	3	0	1	2
CT arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	14	0	0	0	0	0	0	0	0
CT wrist with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	1	14	0	0	0	0	0	0	0	0
CT wrist without IV contrast	Usually not appropriate		☢ <0.1 mSv		1	1	12	1	0	0	1	0	0	0	0
CT wrist without and with IV contrast	Usually not appropriate		☢ <0.1 mSv		1	1	14	0	0	0	0	0	0	0	0
X-ray arthrography wrist	Usually not appropriate		☢ <0.1 mSv		1	1	14	0	0	0	0	0	0	0	0
MR arthrography wrist	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	1	14	0	0	0	0	0	0	0	0
MRI wrist without and with IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	1	10	0	1	0	2	0	0	0	0
Tc-99m bone scan wrist	Usually not appropriate		☢☢☢ 1-10 mSv		1	1	14	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.**