American College of Radiology
ACR Appropriateness Criteria®

Back Pain — Child

Variant 1: Child. Back pain with none of the following clinical red flags: constant pain, night pain, radicular pain, pain lasting >4 weeks, abnormal neurologic examination. Initial imaging evaluation.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography spine area of interest	Usually not appropriate		Varies	Varies	2	n/a	0	0	0	0	0	0	0	0	0
CT spine area of interest without IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
CT spine 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 spine area of interest with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
MRI complete spine 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 complete spine 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
MRI complete spine 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
CT myelography complete spine	Usually not appropriate		☢☢☢☢☢ 30-100 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
Bone scan whole body with SPECT or SPECT/CT complete spine	Usually not appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 2: Child. Back pain with 1 or more of the following clinical red flags: constant pain, night pain, radicular pain, pain lasting >4 weeks, abnormal neurologic examination. Initial imaging evaluation.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography spine area of interest	Usually appropriate		Varies	Varies	8	n/a	0	0	0	0	0	0	0	0	0
MRI complete spine 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 complete spine without and with IV contrast	May be appropriate		O 0 mSv	O 0 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
CT spine area of interest without IV contrast	Usually not appropriate		Varies	Varies	3	n/a	0	0	0	0	0	0	0	0	0
CT spine area of interest with IV contrast	Usually not appropriate		Varies	Varies	2	n/a	0	0	0	0	0	0	0	0	0
Bone scan whole body with SPECT or SPECT/CT complete spine	Usually not appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	2	n/a	0	0	0	0	0	0	0	0	0
CT spine 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
MRI complete spine 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
CT myelography complete spine	Usually not appropriate		☢☢☢☢☢ 30-100 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 3: Child. Back pain with 1 or more of the following clinical red flags: constant pain, night pain, radicular pain, pain lasting >4 weeks, abnormal neurologic examination. Negative radiographs.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI complete spine without IV contrast	Usually appropriate		O 0 mSv	O 0 mSv [ped]	8	n/a	0	0	0	0	0	0	0	0	0
MRI complete spine without and with 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 spine area of interest without IV contrast	May be appropriate		Varies	Varies	5	n/a	0	0	0	0	0	0	0	0	0
Bone scan whole body with SPECT or SPECT/CT complete spine	May be appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
CT spine area of interest with IV contrast	Usually not appropriate		Varies	Varies	2	n/a	0	0	0	0	0	0	0	0	0
CT spine 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
MRI complete spine 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
CT myelography complete spine	Usually not appropriate		☢☢☢☢☢ 30-100 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 4: Child. Back pain with 1 or more of the following clinical red flags: constant pain, night pain, radicular pain, pain lasting >4 weeks, abnormal neurologic examination. Positive radiographs.

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

CT spine area of interest without IV contrast	May be appropriate		Varies	Varies	5	n/a	0	0	0	0	0	0	0	0	0
Bone scan whole body with SPECT or SPECT/CT complete spine	May be appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
CT spine area of interest with IV contrast	Usually not appropriate		Varies	Varies	3	n/a	0	0	0	0	0	0	0	0	0
CT spine 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
MRI complete spine 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
CT myelography complete spine	Usually not appropriate		☢☢☢☢☢ 30-100 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0

Variant 5: Child. Chronic back pain associated with overuse. Mechanical back pain.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography spine area of interest	Usually appropriate		Varies	Varies	9	n/a	0	0	0	0	0	0	0	0	0
MRI spine 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
CT spine area of interest without IV contrast	May be appropriate		Varies	Varies	6	n/a	0	0	0	0	0	0	0	0	0
Bone scan whole body with SPECT or SPECT/CT complete spine	May be appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0
MRI spine area of interest 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 spine 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 spine area of interest with IV contrast	Usually not appropriate		Varies	Varies	1	n/a	0	0	0	0	0	0	0	0	0
CT myelography complete spine	Usually not appropriate		☢☢☢☢☢ 30-100 mSv	☢☢☢☢ 3-10 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0
MRI spine area of interest 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: Child. Back pain associated with suspected inflammation, infection, or malignancy.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI complete spine 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
Radiography complete spine	Usually appropriate			☢☢☢ 0.3-3 mSv [ped]	8	n/a	0	0	0	0	0	0	0	0	0
CT spine area of interest without IV contrast	May be appropriate		Varies	Varies	5	n/a	0	0	0	0	0	0	0	0	0
MRI complete spine 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
Bone scan whole body with SPECT or SPECT/CT complete spine	May be appropriate		☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
CT spine area of interest with IV contrast	Usually not appropriate		Varies	Varies	3	n/a	0	0	0	0	0	0	0	0	0
MRI complete spine 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 spine area of interest without and with IV contrast	Usually not appropriate		Varies	Varies	2	n/a	0	0	0	0	0	0	0	0	0
CT myelography complete spine	Usually not appropriate		☢☢☢☢☢ 30-100 mSv	☢☢☢☢ 3-10 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.**