American College of Radiology
ACR Appropriateness Criteria®

Scoliosis-Child

Variant 1: Child. Congenital scoliosis. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography complete spine	Usually appropriate	Limited		☢☢☢ 0.3-3 mSv [ped]	9	9	0	0	0	0	1	0	0	1	16
References				Study Quality											
12 (24782912)				4											
21 (17945129)				4											
22 (21057122)				4											
23 (15114284)				4											
MRI complete spine without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	1	0	0	1	2	0	3	7	4
References				Study Quality											
24 (23197014)				4											
11 (15292418)				3											
CT spine area of interest without IV contrast	May be appropriate (Disagreement)	Expert Opinion	Varies	Varies	5	5	1	2	2	3	6	3	0	0	0
References				Study Quality											
27 (19907198)				4											
26 (21150659)				2											
25 (19644327)				4											
MRI complete spine without and with IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	7	5	4	0	1	1	0	0	0

	References	Study Quality													
	24 (23197014)	4													
	11 (15292418)	3													
CT spine area of interest without and with IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	16	2	0	0	0	0	0	0	0
	References	Study Quality													
	27 (19907198)	4													
	26 (21150659)	2													
	25 (19644327)	4													
CT spine area of interest with IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	16	2	0	0	0	0	0	0	0
	References	Study Quality													
	27 (19907198)	4													
	26 (21150659)	2													
	25 (19644327)	4													
Bone scan complete spine	Usually not appropriate	Expert Consensus		☢☢☢☢ 3-10 mSv [ped]	1	1	17	1	0	0	0	0	0	0	0

Variant 2: Child (0 to 9 years of age). Early onset idiopathic scoliosis. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography complete spine	Usually appropriate	Limited		☢☢☢ 0.3-3 mSv [ped]	9	9	0	0	0	0	0	0	0	0	18
	References	Study Quality													
	12 (24782912)	4													
	28 (23223957)	4													
MRI complete spine without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	2	1	5	3	5	2

References	Study Quality
30 (19454995)	4
28 (23223957)	4
9 (16845359)	4
29 (20173173)	4

MRI complete spine without and with IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	8	4	2	1	1	2	0	0	0

References	Study Quality
30 (19454995)	4
28 (23223957)	4
9 (16845359)	4
29 (20173173)	4

CT spine area of interest without IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	11	2	2	1	1	0	1	0	0
CT spine area of interest without and with IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	16	2	0	0	0	0	0	0	0
CT spine area of interest with IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	16	2	0	0	0	0	0	0	0
Bone scan complete spine	Usually not appropriate	Expert Consensus		☢☢☢☢ 3-10 mSv [ped]	1	1	16	2	0	0	0	0	0	0	0

Variant 3: Adolescent (10 to 17 years of age). Adolescent idiopathic scoliosis. No risk factors. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography complete spine	Usually appropriate	Strong		☢☢☢ 0.3-3 mSv [ped]	9	9	0	0	0	0	0	0	0	0	18

References	Study Quality
2 (22009775)	4

29 (20173173)	4
31 (21191550)	4
33 (21221052)	3
34 (15507812)	3
36 (21336177)	2
32 (17572623)	2
35 (24220308)	3
37 (17978661)	3
38 (18007242)	3
39 (17108820)	3

MRI complete spine without IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	8	5	3	1	0	0	0	0	0

References	Study Quality
5 (20479697)	4
4 (15466727)	3

MRI complete spine without and with IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	1	1	10	6	1	0	0	1	0	0	0

References	Study Quality
5 (20479697)	4
4 (15466727)	3

CT spine area of interest without IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	13	2	0	1	0	1	0	0	1

References	Study Quality
16 (18458587)	3
17 (22020579)	3
40 (22362109)	3
41 (20173177)	4

CT spine area of interest without and with IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	17	0	1	0	0	0	0	0	0

References	Study Quality
16 (18458587)	3

References	Study Quality
17 (22020579)	3
40 (22362109)	3
41 (20173177)	4

CT spine area of interest with IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	17	1	0	0	0	0	0	0	0

References	Study Quality
16 (18458587)	3
17 (22020579)	3
40 (22362109)	3
41 (20173177)	4

Bone scan complete spine	Usually not appropriate	Expert Consensus		☢☢☢☢ 3-10 mSv [ped]	1	1	17	1	0	0	0	0	0	0	0

Variant 4: Adolescent (10 to 17 years of age). Adolescent idiopathic scoliosis. Risk factors. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography complete spine	Usually appropriate	Strong		☢☢☢ 0.3-3 mSv [ped]	9	9	0	0	0	0	0	0	0	1	17

References	Study Quality
2 (22009775)	4
29 (20173173)	4
31 (21191550)	4
33 (21221052)	3
34 (15507812)	3
36 (21336177)	2
32 (17572623)	2
35 (24220308)	3
37 (17978661)	3
38 (18007242)	3

		39 (17108820)		3												
MRI complete spine without IV contrast	Usually appropriate	Moderate	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	5	4	1	5	3	
		References		Study Quality												
		45 (23472665)		4												
		3 (19308396)		4												
		7 (19506867)		4												
		9 (16845359)		4												
		5 (20479697)		4												
		43 (20081514)		4												
		8 (23143092)		4												
		42 (23064856)		4												
		6 (21178850)		3												
		44 (21194284)		4												
		46 (25421548)		2												
		4 (15466727)		3												
		47 (21194283)		3												
MRI complete spine without and with IV contrast	Usually not appropriate	Moderate	O 0 mSv	O 0 mSv [ped]	2	2	7	3	2	3	2	0	1	0	0	
		References		Study Quality												
		45 (23472665)		4												
		3 (19308396)		4												
		7 (19506867)		4												
		9 (16845359)		4												
		5 (20479697)		4												
		43 (20081514)		4												
		8 (23143092)		4												
		42 (23064856)		4												
		6 (21178850)		3												
		44 (21194284)		4												
		46 (25421548)		2												

		4 (15466727)		3												
		47 (21194283)		3												
CT spine area of interest without IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	10	2	2	1	2	0	0	1	0	
		References		Study Quality												
		16 (18458587)		3												
		17 (22020579)		3												
		40 (22362109)		3												
		41 (20173177)		4												
CT spine area of interest without and with IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	16	1	0	0	0	1	0	0	0	
		References		Study Quality												
		16 (18458587)		3												
		17 (22020579)		3												
		40 (22362109)		3												
		41 (20173177)		4												
CT spine area of interest with IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	16	1	1	0	0	0	0	0	0	
		References		Study Quality												
		16 (18458587)		3												
		17 (22020579)		3												
		40 (22362109)		3												
		41 (20173177)		4												
Bone scan complete spine	Usually not appropriate	Expert Consensus		☢☢☢☢ 3-10 mSv [ped]	1	1	15	3	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.**