

American College of Radiology ACR Appropriateness Criteria®

Suspected Spine Trauma

Variant 1: Age greater than or equal to 16 years and less than 65 years. Suspected acute blunt cervical spine trauma; imaging not indicated by NEXUS or CCR clinical criteria. Patient meets low-risk criteria. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT cervical spine without IV contrast	Usually not appropriate	Strong	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	2	2	8	4	1	0	3	0	0	0	0
			References	Study Quality											
			49 (26239776)	3											
			48 (18469647)	3											
			47 (20065765)	M											
			46 (21619408)	M											
			45 (18404054)	4											
			44 (25997715)	4											
			43 (24033302)	3											
			42 (18188119)	M											
			41 (20336892)	4											
			40 (16374279)	2											
			39 (18073599)	4											
			38 (24731570)	3											
			37 (25769487)	3											
			31 (19509621)	2											
CTA head and neck with IV contrast	Usually not appropriate	Strong	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	15	0	0	0	1	1	0	0	0

References	Study Quality
54 (22695428)	3
53 (14608149)	4
52 (24355656)	3
51 (12435934)	1
50 (24458034)	3
43 (24033302)	3
44 (25997715)	4

CT myelography cervical spine	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	15	2	0	0	0	0	0	0	0
CT cervical spine with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
CT cervical spine without and with IV contrast	Usually not appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0

References	Study Quality
49 (26239776)	3
48 (18469647)	3
47 (20065765)	M
46 (21619408)	M
45 (18404054)	4
44 (25997715)	4
43 (24033302)	3
42 (18188119)	M
41 (20336892)	4
40 (16374279)	2
39 (18073599)	4
38 (24731570)	3
37 (25769487)	3
31 (19509621)	2

Arteriography cervicocerebral	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	16	0	0	0	1	0	0	0	0
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
MRI cervical spine without IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	0	0	0	0	0	0	0

References	Study Quality
56 (27438681)	2
55 (27893647)	2
48 (18469647)	3
47 (20065765)	M
46 (21619408)	M
45 (18404054)	4
44 (25997715)	4
43 (24033302)	3
42 (18188119)	M
41 (20336892)	4
40 (16374279)	2
39 (18073599)	4
38 (24731570)	3
37 (25769487)	3

MRI cervical spine without and with IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
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References	Study Quality
55 (27893647)	2
48 (18469647)	3
47 (20065765)	M
46 (21619408)	M

45 (18404054)	4
44 (25997715)	4
43 (24033302)	3
42 (18188119)	M
41 (20336892)	4
40 (16374279)	2
39 (18073599)	4
38 (24731570)	3
37 (25769487)	3
56 (27438681)	2

Radiography cervical spine	Usually not appropriate	Strong	☼☼ 0.1-1mSv	☼☼ 0.03-0.3 mSv [ped]	1	1	9	3	1	0	2	1	0	0	1
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References	Study Quality
36 (25352931)	4
35 (24139671)	3
34 (22663912)	4
33 (23404352)	3
32 (21085024)	2
31 (19509621)	2

Variant 2: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Imaging indicated by NEXUS or CCR clinical criteria. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT cervical spine without IV contrast	Usually appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	9	9	0	0	0	0	0	0	1	1	15

References	Study Quality
49 (26239776)	3
48 (18469647)	3
47 (20065765)	M

46 (21619408)	M
45 (18404054)	4
44 (25997715)	4
43 (24033302)	3
42 (18188119)	M
41 (20336892)	4
40 (16374279)	2
39 (18073599)	4
38 (24731570)	3
37 (25769487)	3
31 (19509621)	2

Radiography cervical spine	May be appropriate	Strong	☼☼ 0.1-1mSv	☼☼☼ 0.03-0.3 mSv [ped]	5	5	0	0	2	4	10	0	0	0	0
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References	Study Quality
36 (25352931)	4
35 (24139671)	3
34 (22663912)	4
33 (23404352)	3
32 (21085024)	2
31 (19509621)	2

CTA head and neck with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	0	0	0	1	0	0	1	0
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References	Study Quality
53 (14608149)	4
52 (24355656)	3
51 (12435934)	1
50 (24458034)	3

CT myelography cervical spine	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	16	0	0	0	1	0	0	0	0
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CT cervical spine with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	0	2	0	0	0	0	0	0
CT cervical spine without and with IV contrast	Usually not appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	0	2	0	0	0	0	0	0

References	Study Quality
49 (26239776)	3
48 (18469647)	3
47 (20065765)	M
46 (21619408)	M
45 (18404054)	4
44 (25997715)	4
43 (24033302)	3
42 (18188119)	M
41 (20336892)	4
40 (16374279)	2
39 (18073599)	4
38 (24731570)	3
37 (25769487)	3
31 (19509621)	2

Arteriography cervicocerebral	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	0	0	1	0	0	0	0
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	1	0	0	0	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
MRI cervical spine without IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	9	6	1	0	0	0	0	0	0

References	Study Quality
56 (27438681)	2
55 (27893647)	2

48 (18469647)	3
47 (20065765)	M
46 (21619408)	M
45 (18404054)	4
44 (25997715)	4
43 (24033302)	3
42 (18188119)	M
41 (20336892)	4
40 (16374279)	2
39 (18073599)	4
38 (24731570)	3
37 (25769487)	3

MRI cervical spine without and with IV contrast	Usually not appropriate	Strong	0 0 mSv	0 0 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
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References	Study Quality
56 (27438681)	2
55 (27893647)	2
48 (18469647)	3
47 (20065765)	M
46 (21619408)	M
45 (18404054)	4
44 (25997715)	4
43 (24033302)	3
42 (18188119)	M
41 (20336892)	4
40 (16374279)	2
39 (18073599)	4
38 (24731570)	3
37 (25769487)	3

Variant 3: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Confirmed or suspected cervical spinal cord or nerve root injury, with or without traumatic injury identified on cervical CT. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations									
							1	2	3	4	5	6	7	8	9	
MRI cervical spine without IV contrast	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	0	0	0	0	0	0	17
		References		Study Quality												
		58 (20388006)		4												
		43 (24033302)		3												
		41 (20336892)		4												
CT myelography cervical spine	May be appropriate	Limited	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗ 0.3-3 mSv [ped]	5	5	0	0	1	3	10	1	1	0	0	
		References		Study Quality												
		57 (15734929)		4												
		43 (24033302)		3												
		41 (20336892)		4												
		40 (16374279)		2												
CTA head and neck with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	14	0	1	1	0	0	1	0	0	
Arteriography cervicocerebral	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	17	0	0	0	0	0	0	0	0	
MRA neck without IV contrast	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	1	1	15	0	1	1	0	0	0	0	0	
		References		Study Quality												
		59 (25632417)		4												
MRA neck without and with IV contrast	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	1	1	14	0	3	0	0	0	0	0	0	

		References	Study Quality												
		59 (25632417)	4												
MRI cervical spine without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	12	0	2	0	1	1	1	0	0
		References	Study Quality												
		58 (20388006)	4												
		43 (24033302)	3												
		41 (20336892)	4												
Radiography cervical spine	Usually not appropriate	Expert Consensus	☼☼ 0.1-1mSv	☼☼☼ 0.03-0.3 mSv [ped]	1	1	15	0	1	0	1	0	0	0	0

Variant 4: Age greater than or equal to 16 years. Acute cervical spine injury detected on radiographs. Treatment planning for mechanically unstable spine.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT cervical spine without IV contrast	Usually appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	9	9	0	0	0	0	1	0	0	0	15
		References	Study Quality												
		31 (19509621)	2												
MRI cervical spine without IV contrast	Usually appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	0	0	1	0	0	3	12
		References	Study Quality												
		62 (23075855)	2												
		61 (17906580)	4												
		60 (24090539)	2												
		42 (18188119)	M												
		41 (20336892)	4												
		40 (16374279)	2												
		39 (18073599)	4												
		38 (24731570)	3												

		37 (25769487)		3													
CT myelography cervical spine	Usually not appropriate	Limited	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕ 0.3-3 mSv [ped]	1	1	9	1	2	1	2	1	0	0	0		
		References	Study Quality														
		57 (15734929)	4														
		43 (24033302)	3														
		41 (20336892)	4														
		40 (16374279)	2														
CT cervical spine with IV contrast	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	16	0	0	0	0	0	0	0	0	0	0
CT cervical spine without and with IV contrast	Usually not appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	1	1	16	0	0	0	0	0	0	0	0	0	0
		References	Study Quality														
		31 (19509621)	2														
MRI cervical spine without and with IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	14	0	1	0	1	0	0	0	0	0	0
		References	Study Quality														
		62 (23075855)	2														
		61 (17906580)	4														
		60 (24090539)	2														
		42 (18188119)	M														
		41 (20336892)	4														
		40 (16374279)	2														
		39 (18073599)	4														
		38 (24731570)	3														
		37 (25769487)	3														

Variant 5: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Clinical or imaging findings suggest arterial injury with or without positive cervical spine CT. Next imaging study.

39 (18073599)	4
38 (24731570)	3
80 (18073612)	2
79 (25076462)	3
78 (22491556)	3
77 (28993912)	4
62 (23075855)	2
56 (27438681)	2
55 (27893647)	2

MRI cervical spine without and with IV contrast	Usually not appropriate	Strong	0 0 mSv	0 0 mSv [ped]	1	1	14	0	1	0	1	0	1	0	0
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References	Study Quality
41 (20336892)	4
40 (16374279)	2
39 (18073599)	4
38 (24731570)	3
48 (18469647)	3
47 (20065765)	M
46 (21619408)	M
45 (18404054)	4
44 (25997715)	4
62 (23075855)	2
56 (27438681)	2
55 (27893647)	2
80 (18073612)	2
79 (25076462)	3
78 (22491556)	3
77 (28993912)	4

Radiography cervical spine	Usually not appropriate	Limited	☼☼ 0.1-1mSv	☼☼ 0.03-0.3 mSv [ped]	1	1	14	0	1	1	0	1	0	0	0
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References	Study Quality
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76 (16508493)	3
75 (20583514)	3
74 (21265348)	3
35 (24139671)	3

Variant 7: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Clinical or imaging findings suggest ligamentous injury. Next imaging study after CT cervical spine without IV contrast.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations									
							1	2	3	4	5	6	7	8	9	
MRI cervical spine without IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	0	0	2	1	1	13	
		References	Study Quality													
		42 (18188119)	M													
		41 (20336892)	4													
		40 (16374279)	2													
		39 (18073599)	4													
		38 (24731570)	3													
		48 (18469647)	3													
		47 (20065765)	M													
		46 (21619408)	M													
		45 (18404054)	4													
		44 (25997715)	4													
		83 (27448661)	4													
		80 (18073612)	2													
		79 (25076462)	3													
		78 (22491556)	3													
		62 (23075855)	2													
CTA head and neck with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0	

CT myelography cervical spine	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	16	1	0	0	0	0	0	0	0
Arteriography cervicocerebral	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
MRI cervical spine without and with IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	14	0	1	0	1	0	1	0	0

References	Study Quality
47 (20065765)	M
46 (21619408)	M
45 (18404054)	4
44 (25997715)	4
42 (18188119)	M
41 (20336892)	4
48 (18469647)	3
40 (16374279)	2
39 (18073599)	4
38 (24731570)	3
83 (27448661)	4
80 (18073612)	2
79 (25076462)	3
78 (22491556)	3
62 (23075855)	2

Radiography cervical spine	Usually not appropriate	Strong	☼☼ 0.1-1mSv	☼☼ 0.03-0.3 mSv [ped]	1	1	10	0	1	3	3	0	0	0	0
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References	Study Quality
35 (24139671)	3

34 (22663912)	4
33 (23404352)	3
32 (21085024)	2
82 (11791052)	4
81 (23809183)	2
76 (16508493)	3
75 (20583514)	3
74 (21265348)	3
62 (23075855)	2
42 (18188119)	M

Variant 8: Age greater than or equal to 16 years. Suspected acute cervical spine blunt trauma. Follow-up imaging on patient with no unstable injury demonstrated initially, but kept in collar for neck pain. No new neurologic symptoms. Includes whiplash associated disorders.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT cervical spine without IV contrast	May be appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	5	5	5	0	1	0	9	0	1	0	0
MRI cervical spine without IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	1	8	5	0	1	0

References	Study Quality
62 (23075855)	2
42 (18188119)	M
89 (20531071)	3
88 (22310029)	3
87 (15853463)	2
86 (19672633)	3
85 (22187629)	1
97 (18708935)	3
96 (23273320)	3

95 (23143091)	Good
94 (18512085)	4
93 (19802673)	3
92 (19912072)	4
91 (19083212)	4
103 (21920865)	4
102 (21289550)	2

Radiography cervical spine	May be appropriate	Strong	☼☼ 0.1-1mSv	☼☼ 0.03-0.3 mSv [ped]	5	5	0	0	0	2	7	3	1	0	3
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References	Study Quality
74 (21265348)	3
35 (24139671)	3
75 (20583514)	3
101 (27984030)	Good
100 (17108836)	4

CTA head and neck with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	0	1	1	0	0	0	0	0
CT myelography cervical spine	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	17	0	0	0	0	0	0	0	0
CT cervical spine with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	17	0	0	0	0	0	0	0	0
CT cervical spine without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	17	0	0	0	0	0	0	0	0
Arteriography cervicocerebral	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	17	0	0	0	0	0	0	0	0
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	0	1	1	0	0	0	0	0

MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	15	0	1	1	0	0	0	0	0
MRI cervical spine without and with IV contrast	Usually not appropriate	Strong	0 0 mSv	0 0 mSv [ped]	1	1	16	0	1	0	0	0	0	0	0

References	Study Quality
89 (20531071)	3
88 (22310029)	3
87 (15853463)	2
86 (19672633)	3
85 (22187629)	1
103 (21920865)	4
102 (21289550)	2
97 (18708935)	3
96 (23273320)	3
95 (23143091)	Good
94 (18512085)	4
93 (19802673)	3
92 (19912072)	4
91 (19083212)	4
62 (23075855)	2
42 (18188119)	M

Variant 9: Age greater than or equal to 16 years. Blunt trauma meeting criteria for thoracic and lumbar imaging. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT thoracic and lumbar spine without IV contrast	Usually appropriate	Strong	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	9	9	0	0	0	0	1	0	1	0	15

References	Study Quality
110 (27663571)	2

109 (20699755)	3
108 (14566120)	2
107 (-3131250)	3
104 (23422283)	2

Radiography thoracic and lumbar spine	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	5	5	0	0	0	1	12	3	0	0	0
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References	Study Quality
108 (14566120)	2
107 (-3131250)	3
106 (16612322)	4
105 (12913630)	3
104 (23422283)	2

CT myelography thoracic and lumbar spine	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	0	1	0	0	1	0	0	0
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CT thoracic and lumbar spine with IV contrast	Usually not appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	14	0	2	0	0	0	1	0	0
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References	Study Quality
110 (27663571)	2
109 (20699755)	3
108 (14566120)	2
107 (-3131250)	3
104 (23422283)	2

CT thoracic and lumbar spine without and with IV contrast	Usually not appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	0	2	0	0	0	0	0	0
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References	Study Quality
110 (27663571)	2
109 (20699755)	3
108 (14566120)	2
107 (-3131250)	3
104 (23422283)	2

CT thoracic and lumbar spine without and with IV contrast	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	16	0	0	0	0	0	0	0	0	0	
		References	Study Quality														
		57 (15734929)	4														
		43 (24033302)	3														
		41 (20336892)	4														
		40 (16374279)	2														
MRI thoracic and lumbar spine without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	13	0	2	0	1	0	0	0	0	0	
		References	Study Quality														
		111 (14769351)	4														
		43 (24033302)	3														
		41 (20336892)	4														

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.