

		References	Study Quality												
		38 (19433414)	4												
		30 (31436026)	4												
		49 (29538011)	4												
		22 (25837448)	4												
MRI sacroiliac joints without IV contrast	Usually not appropriate	Strong	0 0 mSv	0 0 mSv [ped]	3	3	5	1	2	1	4	2	0	0	0
		References	Study Quality												
		17 (19297345)	3												
		36 (18975311)	2												
		16 (3262757)	4												
		37 (10493676)	2												
		22 (25837448)	4												
MRI sacroiliac joints without and with IV contrast	Usually not appropriate	Strong	0 0 mSv	0 0 mSv [ped]	2	2	7	1	0	2	4	0	1	0	0
		References	Study Quality												
		17 (19297345)	3												
		36 (18975311)	2												
		16 (3262757)	4												
		37 (10493676)	2												
		22 (25837448)	4												
CT sacroiliac joints without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	8	0	4	1	2	0	0	0	0
CT sacroiliac joints without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv		1	1	12	1	2	0	0	0	0	0	0
CT sacroiliac joints with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	12	1	2	0	0	0	0	0	0
US sacroiliac joints	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	11	3	0	0	0	1	0	0	0

CT spine area of interest without IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	8	1	4	1	1	0	0	0	0
CT spine area of interest without and with IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	12	1	2	0	0	0	0	0	0
CT spine area of interest with IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	12	1	2	0	0	0	0	0	0
MRI spine area of interest without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	10	2	1	0	2	0	0	0	0
MRI spine area of interest without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	8	0	2	1	3	1	0	0	0
Fluoride PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv		1	1	12	1	2	0	0	0	0	0	0
Bone scan with SPECT or SPECT/CT spine area of interest	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	11	2	2	0	0	0	0	0	0
Bone scan with SPECT or SPECT/CT sacroiliac joints	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	11	2	2	0	0	0	0	0	0
US spine area of interest	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	11	3	0	0	0	1	0	0	0

Variant 2: Inflammatory back pain. Suspected axial spondyloarthritis. Additional imaging following radiographs. 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 sacroiliac joints without and with IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	1	2	2	0	3	8
			References	Study Quality											
			107 (19446974)				2								
			38 (19433414)				4								
			80 (21900284)				3								

36 (18975311)	2
63 (18006539)	3
83 (20496416)	2
110 (20032094)	3
108 (23418080)	4
75 (19116919)	4
78 (12694111)	4
79 (19454404)	4
19 (19297344)	3
93 (30770520)	2
77 (31422357)	4
104 (31292710)	2
98 (29449501)	3
76 (30544144)	3
94 (30097454)	2
81 (30247978)	1
86 (29513924)	4
95 (29629794)	3
105 (31096431)	4
100 (30086145)	2
91 (29177804)	2
111 (28749173)	2
109 (28593478)	3
45 (28283515)	2
3 (28110981)	4
99 (27994095)	2
101 (27908306)	2
106 (27865027)	3
92 (27651143)	2
90 (26709251)	2
82 (26681230)	4

89 (26286018)	3
1 (27355535)	4
13 (19416801)	2
37 (10493676)	2
22 (25837448)	4
41 (8970049)	2
85 (23203670)	1
88 (24925836)	2
96 (24703519)	3
97 (18806131)	2
102 (18034343)	3
103 (24034836)	4

MRI sacroiliac joints without IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	0	1	1	1	4	8
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References	Study Quality
107 (19446974)	2
38 (19433414)	4
80 (21900284)	3
36 (18975311)	2
63 (18006539)	3
83 (20496416)	2
110 (20032094)	3
108 (23418080)	4
75 (19116919)	4
78 (12694111)	4
79 (19454404)	4
19 (19297344)	3
93 (30770520)	2
77 (31422357)	4
104 (31292710)	2
98 (29449501)	3

76 (30544144)	3
94 (30097454)	2
81 (30247978)	1
86 (29513924)	4
95 (29629794)	3
105 (31096431)	4
100 (30086145)	2
91 (29177804)	2
111 (28749173)	2
109 (28593478)	3
45 (28283515)	2
3 (28110981)	4
99 (27994095)	2
101 (27908306)	2
106 (27865027)	3
92 (27651143)	2
90 (26709251)	2
82 (26681230)	4
89 (26286018)	3
1 (27355535)	4
13 (19416801)	2
37 (10493676)	2
22 (25837448)	4
41 (8970049)	2
85 (23203670)	1
88 (24925836)	2
96 (24703519)	3
97 (18806131)	2
102 (18034343)	3
103 (24034836)	4

MRI sacroiliac joints and spine area of interest without IV contrast	Usually appropriate	Strong	0 mSv	0 mSv [ped]	8	8	1	0	0	0	1	2	2	3	6
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References	Study Quality
107 (19446974)	2
59 (22736088)	4
63 (18006539)	3
129 (22595499)	2
110 (20032094)	3
108 (23418080)	4
9 (15650011)	2
123 (22586174)	4
116 (19019894)	3
117 (22893316)	4
10 (19404934)	2
118 (20083538)	2
11 (19666937)	3
19 (19297344)	3
114 (31161154)	1
111 (28749173)	2
60 (28663306)	4
109 (28593478)	3
112 (28365579)	4
3 (28110981)	4
61 (27889235)	4
119 (27483411)	4
62 (27608795)	4
122 (26669910)	3
89 (26286018)	3
124 (26275972)	4
1 (27355535)	4
12 (18562734)	3

22 (25837448)	4
113 (24451240)	2
115 (24574227)	4
120 (19565558)	2
121 (25510605)	2
125 (15458963)	3
126 (12687557)	3
127 (16206370)	2
128 (15778243)	2

MRI sacroiliac joints and spine area of interest without and with IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	7	7	0	0	0	1	2	1	5	5	2
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References	Study Quality
107 (19446974)	2
59 (22736088)	4
63 (18006539)	3
129 (22595499)	2
110 (20032094)	3
108 (23418080)	4
9 (15650011)	2
123 (22586174)	4
116 (19019894)	3
117 (22893316)	4
10 (19404934)	2
118 (20083538)	2
11 (19666937)	3
19 (19297344)	3
114 (31161154)	1
111 (28749173)	2
60 (28663306)	4
109 (28593478)	3
112 (28365579)	4

3 (28110981)	4
61 (27889235)	4
119 (27483411)	4
62 (27608795)	4
122 (26669910)	3
89 (26286018)	3
124 (26275972)	4
1 (27355535)	4
12 (18562734)	3
22 (25837448)	4
113 (24451240)	2
115 (24574227)	4
120 (19565558)	2
121 (25510605)	2
125 (15458963)	3
126 (12687557)	3
127 (16206370)	2
128 (15778243)	2

CT sacroiliac joints without IV contrast	May be appropriate	Strong	☢☢☢ 1-10 mSv		5	5	0	0	1	1	6	4	1	1	1
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References	Study Quality
55 (17939334)	2
47 (22081446)	2
54 (23842966)	4
19 (19297344)	3
56 (30351251)	1
45 (28283515)	2
3 (28110981)	4
57 (26670154)	3
1 (27355535)	4
22 (25837448)	4

22 (25837448)	4
41 (8970049)	2
50 (20395643)	3
51 (6229308)	4
52 (25649319)	2

CT sacroiliac joints without and with IV contrast	Usually not appropriate	Strong	☹☹☹☹ 10-30 mSv		1	1	12	0	1	1	1	0	0	0	0
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References	Study Quality
55 (17939334)	2
47 (22081446)	2
54 (23842966)	4
19 (19297344)	3
56 (30351251)	1
45 (28283515)	2
3 (28110981)	4
57 (26670154)	3
1 (27355535)	4
22 (25837448)	4
43 (12759287)	2
44 (17610316)	3

CT sacroiliac joints with IV contrast	Usually not appropriate	Strong	☹☹☹ 1-10 mSv		1	1	12	1	1	0	1	0	0	0	0
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References	Study Quality
55 (17939334)	2
47 (22081446)	2
54 (23842966)	4
19 (19297344)	3
56 (30351251)	1
45 (28283515)	2
3 (28110981)	4
57 (26670154)	3

1 (27355535)	4
22 (25837448)	4
43 (12759287)	2
44 (17610316)	3

US sacroiliac joints	Usually not appropriate	Strong	0 0 mSv	0 0 mSv [ped]	1	1	11	1	1	1	0	1	0	0	0
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References	Study Quality
130 (10470902)	3
133 (22552315)	2
132 (17216679)	3
136 (30099591)	Good
131 (24914033)	2
22 (25837448)	4
134 (15934066)	1
135 (19565547)	2

CT sacroiliac joints and spine area of interest without and with IV contrast	Usually not appropriate	Limited	Varies		1	1	12	0	1	1	0	1	0	0	0
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References	Study Quality
59 (22736088)	4
63 (18006539)	3
54 (23842966)	4
19 (19297344)	3
49 (29538011)	4
58 (29127092)	3
60 (28663306)	4
61 (27889235)	4
62 (27608795)	4
22 (25837448)	4

CT sacroiliac joints and spine area of interest with IV contrast	Usually not appropriate	Limited	Varies		1	1	12	1	1	1	0	0	0	0	0
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References	Study Quality
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59 (22736088)	4
63 (18006539)	3
54 (23842966)	4
19 (19297344)	3
49 (29538011)	4
58 (29127092)	3
60 (28663306)	4
61 (27889235)	4
62 (27608795)	4
22 (25837448)	4

Fluoride PET/CT skull base to mid-thigh	Usually not appropriate	Strong	☠☠☠☠ 10-30 mSv		1	1	10	1	2	1	1	0	0	0	0
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References	Study Quality
73 (20505935)	3
64 (22471910)	3
67 (31088514)	1
70 (30620270)	2
65 (29329443)	1
71 (29067775)	4
66 (27137206)	3
68 (26136491)	2
69 (22788874)	2
72 (26053386)	4

US sacroiliac joints and spine area of interest	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	1	1	11	1	2	0	0	1	0	0	0
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References	Study Quality
130 (10470902)	3
132 (17216679)	3
131 (24914033)	2
22 (25837448)	4

115 (24574227)	4
120 (19565558)	2
121 (25510605)	2
125 (15458963)	3
126 (12687557)	3
127 (16206370)	2
128 (15778243)	2

MRI spine area of interest without and with IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	8	8	0	0	0	1	1	2	3	2	7
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References	Study Quality
59 (22736088)	4
63 (18006539)	3
129 (22595499)	2
9 (15650011)	2
123 (22586174)	4
10 (19404934)	2
11 (19666937)	3
19 (19297344)	3
114 (31161154)	1
60 (28663306)	4
3 (28110981)	4
61 (27889235)	4
62 (27608795)	4
122 (26669910)	3
89 (26286018)	3
124 (26275972)	4
1 (27355535)	4
12 (18562734)	3
22 (25837448)	4
115 (24574227)	4
120 (19565558)	2

121 (25510605)	2
125 (15458963)	3
126 (12687557)	3
127 (16206370)	2
128 (15778243)	2

CT spine area of interest without IV contrast	Usually appropriate	Limited	Varies	Varies	7	7	0	0	0	0	5	2	5	1	2
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References	Study Quality
59 (22736088)	4
63 (18006539)	3
54 (23842966)	4
19 (19297344)	3
49 (29538011)	4
58 (29127092)	3
60 (28663306)	4
3 (28110981)	4
61 (27889235)	4
62 (27608795)	4
1 (27355535)	4
22 (25837448)	4

Bone scan with SPECT or SPECT/CT spine area of interest	Usually not appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	2	2	7	1	3	2	1	0	1	0	0
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References	Study Quality
42 (15309502)	2
53 (28798229)	2
22 (25837448)	4
41 (8970049)	2
50 (20395643)	3
51 (6229308)	4
52 (25649319)	2

CT spine area of interest without and with IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	11	0	1	1	1	0	1	0	0
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References	Study Quality
59 (22736088)	4
63 (18006539)	3
54 (23842966)	4
19 (19297344)	3
49 (29538011)	4
58 (29127092)	3
60 (28663306)	4
3 (28110981)	4
61 (27889235)	4
62 (27608795)	4
1 (27355535)	4
22 (25837448)	4

CT spine area of interest with IV contrast	Usually not appropriate	Limited	Varies	Varies	1	1	11	0	2	1	1	0	0	0	0
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References	Study Quality
59 (22736088)	4
63 (18006539)	3
54 (23842966)	4
19 (19297344)	3
49 (29538011)	4
58 (29127092)	3
60 (28663306)	4
3 (28110981)	4
61 (27889235)	4
62 (27608795)	4
1 (27355535)	4
22 (25837448)	4

143 (28085226)	2
141 (26990518)	4
29 (29860356)	4
148 (30625261)	4
22 (25837448)	4
144 (21622969)	2
145 (26903442)	4
146 (26663907)	4
150 (9870884)	2

Radiography sacroiliac joints	Usually appropriate	Strong	☼☼ 0.1-1mSv		7	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
30 (31436026)	4
149 (30220240)	Good
147 (28970213)	1
142 (28684556)	4
143 (28085226)	2
141 (26990518)	4
29 (29860356)	4
148 (30625261)	4
22 (25837448)	4
144 (21622969)	2
145 (26903442)	4
146 (26663907)	4
150 (9870884)	2

Radiography sacroiliac joints	Usually appropriate	Strong	☼☼ 0.1-1mSv		7	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
30 (31436026)	4
149 (30220240)	Good
147 (28970213)	1

142 (28684556)	4
143 (28085226)	2
141 (26990518)	4
29 (29860356)	4
148 (30625261)	4
22 (25837448)	4
144 (21622969)	2
145 (26903442)	4
146 (26663907)	4
150 (9870884)	2

Radiography sacroiliac joints and spine area of interest	Usually appropriate	Strong	☼☼☼ 1-10 mSv		7	7	0	0	0	2	2	2	3	2	4
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References	Study Quality
30 (31436026)	4
149 (30220240)	Good
155 (28939631)	2
154 (29611287)	2
143 (28085226)	2
151 (27696754)	3
141 (26990518)	4
29 (29860356)	4
148 (30625261)	4
156 (29984487)	2
22 (25837448)	4
144 (21622969)	2
145 (26903442)	4
150 (9870884)	2
152 (22127957)	2
153 (23956249)	4
157 (15051621)	2

MRI sacroiliac joints without IV contrast	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	6	6	0	1	0	1	4	2	3	2	2
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References	Study Quality
107 (19446974)	2
110 (20032094)	3
108 (23418080)	4
30 (31436026)	4
111 (28749173)	2
109 (28593478)	3
22 (25837448)	4
137 (20191486)	2
138 (16208659)	4

MRI sacroiliac joints and spine area of interest without IV contrast	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	6	6	0	1	0	1	3	4	3	1	2
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References	Study Quality
107 (19446974)	2
129 (22595499)	2
110 (20032094)	3
108 (23418080)	4
9 (15650011)	2
30 (31436026)	4
111 (28749173)	2
109 (28593478)	3
22 (25837448)	4
125 (15458963)	3
126 (12687557)	3
127 (16206370)	2
128 (15778243)	2
137 (20191486)	2
138 (16208659)	4
139 (17407241)	3

		140 (16082639)			2													
MRI sacroiliac joints without and with IV contrast	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	5	5	0	1	0	4	4	5	0	1	1			

References	Study Quality
107 (19446974)	2
110 (20032094)	3
108 (23418080)	4
30 (31436026)	4
111 (28749173)	2
109 (28593478)	3
22 (25837448)	4
137 (20191486)	2
138 (16208659)	4

MRI sacroiliac joints and spine area of interest without and with IV contrast	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	5	5	1	0	0	4	6	3	0	1	1			
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References	Study Quality
107 (19446974)	2
129 (22595499)	2
110 (20032094)	3
108 (23418080)	4
9 (15650011)	2
30 (31436026)	4
111 (28749173)	2
109 (28593478)	3
22 (25837448)	4
125 (15458963)	3
126 (12687557)	3
127 (16206370)	2
128 (15778243)	2
137 (20191486)	2
138 (16208659)	4

		158 (26321072)				3												
		159 (23385982)				4												
CT sacroiliac joints and spine area of interest without and with IV contrast	Usually not appropriate	Limited	Varies			1	1	12	1	2	0	0	0	0	0	0	0	0
		References		Study Quality														
		49 (29538011)		4														
		58 (29127092)		3														
		22 (25837448)		4														
CT sacroiliac joints and spine area of interest with IV contrast	Usually not appropriate	Limited	Varies			1	1	11	2	2	0	0	0	0	0	0	0	0
		References		Study Quality														
		49 (29538011)		4														
		58 (29127092)		3														
		22 (25837448)		4														
Fluoride PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv			1	1	11	1	2	1	0	0	0	0	0	0	0
Bone scan with SPECT or SPECT/CT sacroiliac joints	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]		1	1	10	1	4	0	0	0	0	0	0	0	0
Bone scan with SPECT or SPECT/CT sacroiliac joints and spine area of interest	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]		1	1	10	1	4	0	0	0	0	0	0	0	0
US sacroiliac joints and spine area of interest	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]		1	1	11	3	0	0	1	0	0	0	0	0	0
		References		Study Quality														
		132 (17216679)		3														
		158 (26321072)		3														
		159 (23385982)		4														

Variant 5: Axial spondyloarthritis with spine ankylosis. Suspected fracture. Initial imaging.

35 (20421858)	4
162 (31054754)	4
32 (28816877)	4
22 (25837448)	4
160 (18421455)	4
161 (15191110)	4

Fluoride PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv		1	1	14	1	0	0	0	0	0	0	0
Bone scan with SPECT or SPECT/CT spine area of interest	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	10	1	0	1	2	0	1	0	0
US spine area of interest	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	13	2	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.