



		11 (30803729)			4													
CT abdomen without and with IV contrast	Usually appropriate	Strong	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗⊗ 10-30 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0	0	0	0

References	Study Quality
29 (23764074)	4
9 (23665399)	4
21 (7776446)	2
15 (9507823)	4
22 (9836544)	4
17 (15201737)	2
20 (10893575)	2
30 (9146581)	2
31 (21843882)	2
16 (31711833)	4

CT abdomen and pelvis with IV contrast	May be appropriate	Strong	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0	0	0

References	Study Quality
29 (23764074)	4
9 (23665399)	4
2 (28596261)	4
21 (7776446)	2
33 (9888732)	4
34 (12090319)	4
15 (9507823)	4
22 (9836544)	4
17 (15201737)	2
20 (10893575)	2
30 (9146581)	2
31 (21843882)	2
16 (31711833)	4

11 (30803729)	4
32 (30228095)	3
25 (29489406)	3

CT abdomen and pelvis without and with IV contrast	May be appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
29 (23764074)	4
9 (23665399)	4
2 (28596261)	4
21 (7776446)	2
33 (9888732)	4
34 (12090319)	4
15 (9507823)	4
22 (9836544)	4
17 (15201737)	2
20 (10893575)	2
30 (9146581)	2
31 (21843882)	2
16 (31711833)	4
11 (30803729)	4
32 (30228095)	3
25 (29489406)	3

CT chest with IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼☼ 3-10 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4
27 (26880407)	2
37 (20846691)	3
11 (30803729)	4
26 (-3194081)	4

		36 (28863862)		4														
MRI abdomen without IV contrast	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0	0	0

References	Study Quality
9 (23665399)	4
2 (28596261)	4
38 (20429759)	2
39 (30955139)	4
11 (30803729)	4

Radiography chest	May be appropriate	Strong	⊕ <0.1 mSv	⊕ <0.03 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0	0	0

References	Study Quality
28 (24096433)	2
9 (23665399)	4
12 (26617405)	4
27 (26880407)	2
11 (30803729)	4
24 (30205104)	3

US abdomen with IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0	0	0

References	Study Quality
44 (27569091)	2
48 (25404183)	3
49 (24665032)	2
9 (23665399)	4
42 (23092215)	2
47 (21107560)	2
46 (20204642)	2
2 (28596261)	4
11 (30803729)	4
41 (31585824)	3



34 (12090319)	4
38 (20429759)	2
39 (30955139)	4
11 (30803729)	4
32 (30228095)	3
25 (29489406)	3

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4
2 (28596261)	4
33 (9888732)	4
34 (12090319)	4
38 (20429759)	2
39 (30955139)	4
11 (30803729)	4
32 (30228095)	3
25 (29489406)	3

CT abdomen and pelvis without IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼☼ 3-10 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
29 (23764074)	4
9 (23665399)	4
2 (28596261)	4
21 (7776446)	2
33 (9888732)	4
34 (12090319)	4
15 (9507823)	4
22 (9836544)	4
17 (15201737)	2
20 (10893575)	2

30 (9146581)	2
31 (21843882)	2
16 (31711833)	4
11 (30803729)	4
32 (30228095)	3
25 (29489406)	3

FDG-PET/CT skull base to mid-thigh	May be appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
52 (27824726)	Good
56 (26996777)	3
55 (26202597)	3
9 (23665399)	4
2 (28596261)	4
11 (30803729)	4
54 (30120698)	2
53 (30070347)	3

US kidneys retroperitoneal	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4
2 (28596261)	4
40 (31579200)	4
11 (30803729)	4
36 (28863862)	4

CT chest without and with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	3	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4
27 (26880407)	2

37 (20846691)	3
11 (30803729)	4
26 (-3194081)	4
36 (28863862)	4

CTU without and with IV contrast	Usually not appropriate	Limited	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗⊗ 10-30 mSv [ped]	3	3	3	1	6	1	2	2	0	0	0
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References	Study Quality
9 (23665399)	4
2 (28596261)	4
11 (30803729)	4
35 (29525875)	4

MRU without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	3	3	3	3	4	1	2	1	0	1	0
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References	Study Quality
9 (23665399)	4
2 (28596261)	4
11 (30803729)	4
35 (29525875)	4

MRU without IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	2	2	6	4	3	0	1	1	0	0	0
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References	Study Quality
9 (23665399)	4
2 (28596261)	4
11 (30803729)	4
35 (29525875)	4

Bone scan whole body	Usually not appropriate	Limited	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4









20 (10893575)	2
30 (9146581)	2
16 (31711833)	4

CT abdomen and pelvis without and with IV contrast	May be appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
70 (26154677)	2
71 (24345460)	3
29 (23764074)	4
9 (23665399)	4
69 (20227295)	4
2 (28596261)	4
33 (9888732)	4
34 (12090319)	4
22 (9836544)	4
17 (15201737)	2
20 (10893575)	2
30 (9146581)	2
16 (31711833)	4
10 (30563753)	3
32 (30228095)	3
25 (29489406)	3

CT chest with IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼☼ 3-10 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4
27 (26880407)	2
37 (20846691)	3
11 (30803729)	4
26 (-3194081)	4

		36 (28863862)		4														
MRI abdomen without IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0	0	0

References	Study Quality
72 (27401340)	4
73 (26797360)	2
29 (23764074)	4
74 (20173161)	2

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
72 (27401340)	4
73 (26797360)	2
29 (23764074)	4
9 (23665399)	4
74 (20173161)	2
2 (28596261)	4
33 (9888732)	4
34 (12090319)	4
11 (30803729)	4
32 (30228095)	3
25 (29489406)	3

Radiography chest	May be appropriate	Strong	⊕ <0.1 mSv	⊕ <0.03 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
28 (24096433)	2
9 (23665399)	4
12 (26617405)	4
2 (28596261)	4
27 (26880407)	2
11 (30803729)	4

US abdomen with IV contrast	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
44 (27569091)	2
48 (25404183)	3
49 (24665032)	2
42 (23092215)	2
47 (21107560)	2
41 (31585824)	3
45 (31509441)	2
43 (30384977)	2

CT abdomen and pelvis with IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
70 (26154677)	2
71 (24345460)	3
29 (23764074)	4
9 (23665399)	4
69 (20227295)	4
2 (28596261)	4
33 (9888732)	4
34 (12090319)	4
22 (9836544)	4
17 (15201737)	2
20 (10893575)	2
30 (9146581)	2
16 (31711833)	4
11 (30803729)	4
32 (30228095)	3
25 (29489406)	3

CT chest without IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4
27 (26880407)	2
37 (20846691)	3
11 (30803729)	4
26 (-3194081)	4
36 (28863862)	4

MRI abdomen and pelvis without IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	5	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
72 (27401340)	4
73 (26797360)	2
29 (23764074)	4
9 (23665399)	4
74 (20173161)	2
2 (28596261)	4
33 (9888732)	4
34 (12090319)	4
11 (30803729)	4
32 (30228095)	3
25 (29489406)	3

CT abdomen without IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
70 (26154677)	2
71 (24345460)	3
29 (23764074)	4
69 (20227295)	4

22 (9836544)	4
17 (15201737)	2
20 (10893575)	2
30 (9146581)	2
16 (31711833)	4

CT abdomen and pelvis without IV contrast	May be appropriate	Strong	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
70 (26154677)	2
71 (24345460)	3
29 (23764074)	4
9 (23665399)	4
69 (20227295)	4
2 (28596261)	4
33 (9888732)	4
34 (12090319)	4
22 (9836544)	4
17 (15201737)	2
20 (10893575)	2
30 (9146581)	2
16 (31711833)	4
11 (30803729)	4
32 (30228095)	3
25 (29489406)	3

US kidneys retroperitoneal	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4
2 (28596261)	4
11 (30803729)	4









Radiography skeletal survey	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0	
			References	Study Quality												
			9 (23665399)	4												
			2 (28596261)	4												
			11 (30803729)	4												

**Variant 3: Follow-up for clinically localized renal cell carcinoma; active surveillance.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations									
							1	2	3	4	5	6	7	8	9	
MRI abdomen without and with IV contrast	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	9	n/a	0	0	0	0	0	0	0	0	0	
			References	Study Quality												
			9 (23665399)	4												
			87 (22826399)	3												
			2 (28596261)	4												
			11 (30803729)	4												
CT abdomen with IV contrast	Usually appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	8	n/a	0	0	0	0	0	0	0	0	0	
			References	Study Quality												
			82 (27331922)	Good												
			86 (25794069)	3												
			9 (23665399)	4												
			78 (25698065)	1												
			2 (28596261)	4												
CT abdomen without and with IV contrast	Usually appropriate	Strong	☹☹☹☹ 10-30 mSv	☹☹☹☹☹ 10-30 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0	
			References	Study Quality												

82 (27331922)	Good
86 (25794069)	3
9 (23665399)	4
78 (25698065)	1
2 (28596261)	4

US abdomen with IV contrast	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	7	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
73 (26797360)	2
90 (28429490)	3
89 (24475802)	3

CT abdomen and pelvis with IV contrast	May be appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
82 (27331922)	Good
86 (25794069)	3
75 (25781204)	4
9 (23665399)	4
8 (21766302)	Good
76 (21353376)	2
78 (25698065)	1
77 (22564495)	3
81 (21167561)	3
2 (28596261)	4
33 (9888732)	4
34 (12090319)	4
83 (31864937)	2
11 (30803729)	4
84 (28951284)	4

CT abdomen and pelvis without and with IV contrast	May be appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
82 (27331922)	Good
86 (25794069)	3
75 (25781204)	4
9 (23665399)	4
8 (21766302)	Good
76 (21353376)	2
78 (25698065)	1
77 (22564495)	3
81 (21167561)	3
2 (28596261)	4
33 (9888732)	4
34 (12090319)	4
83 (31864937)	2
11 (30803729)	4
84 (28951284)	4

MRI abdomen without IV contrast	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4
87 (22826399)	3
2 (28596261)	4
11 (30803729)	4

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	6	n/a	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
82 (27331922)	Good
75 (25781204)	4







References	Study Quality
9 (23665399)	4
76 (21353376)	2
12 (26617405)	4
77 (22564495)	3
81 (21167561)	3
2 (28596261)	4

CT abdomen and pelvis without IV contrast	May be appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	4	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
82 (27331922)	Good
86 (25794069)	3
75 (25781204)	4
9 (23665399)	4
8 (21766302)	Good
76 (21353376)	2
78 (25698065)	1
77 (22564495)	3
81 (21167561)	3
2 (28596261)	4
33 (9888732)	4
34 (12090319)	4
83 (31864937)	2
11 (30803729)	4
84 (28951284)	4

CT chest without and with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	3	n/a	0	0	0	0	0	0	0	0	0
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References	Study Quality
9 (23665399)	4
2 (28596261)	4





		11 (30803729)			4													
MRI head without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality													
		9 (23665399)			4													
		2 (28596261)			4													
		11 (30803729)			4													
MRU without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	10	1	4	0	0	0	0	0	0	0	0	0
		References			Study Quality													
		9 (23665399)			4													
		2 (28596261)			4													
		11 (30803729)			4													
Radiography abdomen	Usually not appropriate	Limited	☼☼ 0.1-1mSv	☼☼ 0.03-0.3 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality													
		9 (23665399)			4													
		2 (28596261)			4													
		11 (30803729)			4													
Radiography skeletal survey	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	n/a	0	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality													
		9 (23665399)			4													
		2 (28596261)			4													
		11 (30803729)			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](http://www.acr.org/ac).