

47 (32048533)	2
46 (31177136)	4
45 (19264179)	2
44 (16286125)	2
43 (1716204)	4
42 (4023233)	4
41 (6539790)	3
6 (23122041)	4

CT abdomen and pelvis without IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼☼ 3-10 mSv [ped]	5	5	0	0	0	3	7	3	0	0	0
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References	Study Quality
29 (1852937)	4
28 (28081195)	2
27 (-3186721)	4
26 (25247970)	3
25 (25763725)	4
24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
7 (2297631)	3
6 (23122041)	4

24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
7 (2297631)	3
6 (23122041)	4

CT chest with IV contrast	Usually appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢☢ 3-10 mSv [ped]	8	8	0	0	0	0	0	1	5	5	2
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References	Study Quality
51 (8345604)	4
48 (8048200)	3
33 (9530036)	3
32 (17375035)	3
31 (12471874)	4
30 (11886000)	4
9 (27815687)	4
8 (-3186719)	4

Radiography chest	Usually appropriate	Limited	☢ <0.1 mSv	☢ <0.03 mSv [ped]	8	8	0	0	1	0	0	0	5	4	3
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References	Study Quality
51 (8345604)	4
49 (2238301)	4

48 (8048200)	3
9 (27815687)	4
8 (-3186719)	4

MRI abdomen and pelvis without and with IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	7	7	0	0	0	0	1	2	3	4	1
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References	Study Quality
47 (32048533)	2
46 (31177136)	4
45 (19264179)	2
44 (16286125)	2
43 (1716204)	4
42 (4023233)	4
41 (6539790)	3
6 (23122041)	4

MRI abdomen and pelvis without IV contrast	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	2	4	7	0	0	0
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References	Study Quality
47 (32048533)	2
46 (31177136)	4
45 (19264179)	2
44 (16286125)	2
43 (1716204)	4
42 (4023233)	4
41 (6539790)	3
6 (23122041)	4

CT abdomen and pelvis without IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	0	0	0	3	8	2	0	0	0
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References	Study Quality
29 (1852937)	4
28 (28081195)	2
27 (-3186721)	4

26 (25247970)	3
25 (25763725)	4
24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
7 (2297631)	3
6 (23122041)	4

CT chest without IV contrast	May be appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	5	5	0	0	0	4	8	1	0	0	0
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References	Study Quality
51 (8345604)	4
48 (8048200)	3
33 (9530036)	3
32 (17375035)	3
31 (12471874)	4
30 (11886000)	4
9 (27815687)	4
8 (-3186719)	4

MRI head without and with IV contrast	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	4	2	5	2	0	0	0
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References	Study Quality
11 (31059667)	4

28 (28081195)	2
27 (-3186721)	4
26 (25247970)	3
25 (25763725)	4
24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
7 (2297631)	3
6 (23122041)	4

CT chest without and with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	4	4	5	0	0	0	0	0	0
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References	Study Quality
51 (8345604)	4
48 (8048200)	3
33 (9530036)	3
32 (17375035)	3
31 (12471874)	4
30 (11886000)	4
9 (27815687)	4
8 (-3186719)	4

Bone scan whole body	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	2	2	3	4	3	1	0	0	0	0	0
		References		Study Quality											
		12 (11201467)		4											
US abdomen and retroperitoneum	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	2	2	3	8	2	0	0	0	0	0	0
		References		Study Quality											
		50 (-3189148)		4											

Variant 3: Surveillance of stage IA and IB pure seminoma testicular cancer. Diagnosed by orchiectomy. No clinical suspicion of recurrence.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT abdomen and pelvis with IV contrast	Usually appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	9	9	1	0	0	0	1	0	0	2	7
		References		Study Quality											
		56 (17416851)		1											
		55 (27423685)		4											
		54 (10210337)		3											
		53 (18647907)		4											
		30 (11886000)		4											
		29 (1852937)		4											
		28 (28081195)		2											
		27 (-3186721)		4											
		26 (25247970)		3											
		25 (25763725)		4											
		24 (22180527)		3											
		23 (19863418)		4											
		22 (6975027)		3											
		21 (3055609)		4											

20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
11 (31059667)	4
10 (31277730)	4
9 (27815687)	4
8 (-3186719)	4
7 (2297631)	3
6 (23122041)	4

Radiography chest	Usually appropriate	Limited	☼ <0.1 mSv	☼ <0.03 mSv [ped]	8	8	0	0	0	0	2	1	2	2	4
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References	Study Quality
8 (-3186719)	4
59 (19577354)	4
58 (25135991)	4
57 (28866371)	4

MRI abdomen and pelvis without and with IV contrast	Usually appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	7	7	0	0	0	0	1	2	3	4	1
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References	Study Quality
47 (32048533)	2
46 (31177136)	4
45 (19264179)	2
44 (16286125)	2
43 (1716204)	4
42 (4023233)	4
41 (6539790)	3

18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
11 (31059667)	4
10 (31277730)	4
9 (27815687)	4
8 (-3186719)	4
7 (2297631)	3
6 (23122041)	4

US scrotum	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	5	5	0	0	1	5	6	1	0	0	0
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References	Study Quality
8 (-3186719)	4
40 (-3194401)	4

CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Strong	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗⊗ 10-30 mSv [ped]	3	3	2	4	7	0	0	0	0	0	0
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References	Study Quality
56 (17416851)	1
55 (27423685)	4
54 (10210337)	3
53 (18647907)	4
30 (11886000)	4
29 (1852937)	4
28 (28081195)	2
27 (-3186721)	4
26 (25247970)	3
25 (25763725)	4

24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
11 (31059667)	4
10 (31277730)	4
9 (27815687)	4
8 (-3186719)	4
7 (2297631)	3
6 (23122041)	4

CT chest without IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	3	3	0	6	3	2	1	1	0	0	0
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References	Study Quality
54 (10210337)	3
49 (2238301)	4
33 (9530036)	3
32 (17375035)	3
31 (12471874)	4
30 (11886000)	4

CT chest with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	2	2	0	7	6	0	0	0	0	0	0
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References	Study Quality
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54 (10210337)	3
49 (2238301)	4
33 (9530036)	3
32 (17375035)	3
31 (12471874)	4
30 (11886000)	4

CT chest without and with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	5	3	1	0	1	1	0	0	0
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References	Study Quality
54 (10210337)	3
49 (2238301)	4
33 (9530036)	3
32 (17375035)	3
31 (12471874)	4
30 (11886000)	4

MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	3	5	2	0	1	0	0	0	0
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MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	3	3	3	1	0	1	0	0	0
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Bone scan whole body	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	3	4	3	1	0	0	0	0	0
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References	Study Quality
12 (11201467)	4

FDG-PET/CT whole body	Usually not appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	2	4	1	3	1	0	0	0	0
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References	Study Quality
39 (11942962)	4
38 (12634968)	2
37 (10853816)	3
36 (18453520)	2

18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
8 (-3186719)	4
7 (2297631)	3
6 (23122041)	4

Radiography chest	Usually appropriate	Limited	⊕ <0.1 mSv	⊕ <0.03 mSv [ped]	9	9	0	0	0	0	0	0	2	2	7
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References	Study Quality
8 (-3186719)	4

MRI abdomen and pelvis without and with IV contrast	Usually appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	7	7	0	0	0	0	1	2	4	3	1
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References	Study Quality
6 (23122041)	4
47 (32048533)	2
46 (31177136)	4
45 (19264179)	2
44 (16286125)	2
43 (1716204)	4
42 (4023233)	4
41 (6539790)	3

MRI abdomen and pelvis without IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	6	6	0	0	0	2	4	7	0	0	0
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References	Study Quality
6 (23122041)	4
47 (32048533)	2
46 (31177136)	4
45 (19264179)	2

44 (16286125)	2
43 (1716204)	4
42 (4023233)	4
41 (6539790)	3

CT abdomen and pelvis without IV contrast	May be appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	5	5	0	0	0	2	5	6	0	0	0
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References	Study Quality
56 (17416851)	1
55 (27423685)	4
54 (10210337)	3
53 (18647907)	4
30 (11886000)	4
29 (1852937)	4
28 (28081195)	2
27 (-3186721)	4
26 (25247970)	3
25 (25763725)	4
24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
8 (-3186719)	4
7 (2297631)	3

30 (11886000)	4
29 (1852937)	4
28 (28081195)	2
27 (-3186721)	4
26 (25247970)	3
25 (25763725)	4
24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
8 (-3186719)	4
7 (2297631)	3
6 (23122041)	4

FDG-PET/CT whole body	Usually not appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	3	3	2	3	3	2	1	0	0	0	0
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References	Study Quality
39 (11942962)	4
38 (12634968)	2
37 (10853816)	3
36 (18453520)	2
35 (10565755)	3
34 (9591582)	3
52 (17634488)	2

CT chest without and with IV contrast	Usually not appropriate	Limited	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	3	4	1	0	2	0	1	0	0
		References		Study Quality											
		8 (-3186719)		4											
		33 (9530036)		3											
		32 (17375035)		3											
		31 (12471874)		4											
		30 (11886000)		4											
MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	3	5	2	0	1	0	0	0	0
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	3	3	3	1	0	1	0	0	0
Bone scan whole body	Usually not appropriate	Limited	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	3	4	3	1	0	0	0	0	0
		References		Study Quality											
		12 (11201467)		4											
US abdomen and retroperitoneum	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	2	2	3	9	1	0	0	0	0	0	0
		References		Study Quality											
		50 (-3189148)		4											

Variant 5: Surveillance of stage IA and IB pure seminoma and nonseminoma testicular cancer. Diagnosed by orchiectomy. Suspected recurrence.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT abdomen and pelvis with IV contrast	Usually appropriate	Strong	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	9	9	1	0	0	0	0	0	2	0	8
		References		Study Quality											
		56 (17416851)		1											

29 (1852937)	4
28 (28081195)	2
27 (-3186721)	4
26 (25247970)	3
25 (25763725)	4
24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
8 (-3186719)	4
7 (2297631)	3
6 (23122041)	4

CT chest with IV contrast	Usually appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	8	8	0	1	0	0	0	1	2	4	3
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References	Study Quality
33 (9530036)	3
32 (17375035)	3
31 (12471874)	4
30 (11886000)	4
8 (-3186719)	4
49 (2238301)	4
54 (10210337)	3

MRI abdomen and pelvis without and with IV contrast	Usually appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	7	7	0	0	0	0	0	1	6	3	1	
		References	Study Quality													
		6 (23122041)	4													
		46 (31177136)	4													
		45 (19264179)	2													
		44 (16286125)	2													
		43 (1716204)	4													
		42 (4023233)	4													
		41 (6539790)	3													
Radiography chest	Usually appropriate	Limited	⊕ <0.1 mSv	⊛ <0.03 mSv [ped]	7	7	0	1	0	0	0	1	5	4	2	
		References	Study Quality													
		8 (-3186719)	4													
		59 (19577354)	4													
		58 (25135991)	4													
		57 (28866371)	4													
MRI abdomen and pelvis without IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	6	6	0	0	0	2	4	6	1	0	0	
		References	Study Quality													
		6 (23122041)	4													
		47 (32048533)	2													
		46 (31177136)	4													
		45 (19264179)	2													
		44 (16286125)	2													
		43 (1716204)	4													
		42 (4023233)	4													
		41 (6539790)	3													
FDG-PET/CT whole body	May be appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	6	6	0	0	0	3	3	6	1	0	0	

References	Study Quality
39 (11942962)	4
38 (12634968)	2
37 (10853816)	3
36 (18453520)	2
35 (10565755)	3
34 (9591582)	3

CT abdomen and pelvis without IV contrast	May be appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	5	5	0	0	0	2	5	6	0	0	0
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References	Study Quality
56 (17416851)	1
29 (1852937)	4
28 (28081195)	2
27 (-3186721)	4
26 (25247970)	3
25 (25763725)	4
24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
8 (-3186719)	4
7 (2297631)	3
6 (23122041)	4

25 (25763725)	4
24 (22180527)	3
23 (19863418)	4
22 (6975027)	3
21 (3055609)	4
20 (7069838)	3
19 (7051132)	4
18 (7237052)	4
17 (9242768)	2
16 (20032141)	4
15 (6175771)	3
14 (8386073)	4
13 (3791844)	4
8 (-3186719)	4
7 (2297631)	3
6 (23122041)	4

CT chest without and with IV contrast	Usually not appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	2	2	3	8	2	0	0	0	0	0	0
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References	Study Quality
54 (10210337)	3
49 (2238301)	4
33 (9530036)	3
32 (17375035)	3
31 (12471874)	4
30 (11886000)	4
8 (-3186719)	4

MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	2	5	5	0	1	0	0	0	0
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US abdomen and retroperitoneum	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	2	2	4	7	2	0	0	0	0	0	0
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References	Study Quality
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50 (-3189148)

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.