

CT chest without and with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	10	2	1	1	0	1	0	0	0
		References	Study Quality												
		12 (26226916)	1												
		11 (26207003)	4												
		13 (25680714)	4												
		14 (24707937)	4												
		10 (31054749)	4												
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☹☹☹☹ 10-30 mSv	☹☹☹☹☹ 3-10 mSv [ped]	1	1	10	2	2	1	0	0	0	0	0
WBC scan chest	Usually not appropriate	Expert Consensus	☹☹☹☹ 10-30 mSv		1	1	11	1	2	0	1	0	0	0	0

Variant 2: Nontraumatic chest wall pain. Known or suspected malignancy. Secondary evaluation after normal chest radiograph. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT chest with IV contrast	Usually appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	8	8	0	0	0	0	0	0	2	12	2
		References	Study Quality												
		29 (21862774)	4												
		15 (21466934)	4												
		27 (27494286)	4												
		31 (24585297)	3												
		32 (21900839)	2												
		30 (21571655)	4												
		28 (19931110)	4												
CT chest without IV contrast	Usually appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	7	7	0	0	1	0	1	0	11	2	1

References	Study Quality
29 (21862774)	4
15 (21466934)	4
27 (27494286)	4
31 (24585297)	3
32 (21900839)	2
30 (21571655)	4
28 (19931110)	4

Bone scan whole body	Usually appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼☼ 3-10 mSv [ped]	7	7	1	0	0	0	1	0	11	3	0
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References	Study Quality
26 (30484853)	4

MRI chest without IV contrast	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	5	8	1	1	0	0
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References	Study Quality
29 (21862774)	4
41 (18373824)	3
15 (21466934)	4
42 (11128398)	2
27 (27494286)	4
38 (29613963)	4
39 (23206603)	4
30 (21571655)	4
28 (19931110)	4

MRI chest without and with IV contrast	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	0	3	10	2	1	0	0
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References	Study Quality
29 (21862774)	4
41 (18373824)	3
15 (21466934)	4
42 (11128398)	2

27 (27494286)	4
38 (29613963)	4
40 (24947314)	3
39 (23206603)	4
30 (21571655)	4
28 (19931110)	4

FDG-PET/CT skull base to mid-thigh	May be appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	1	0	0	3	7	2	1	2	0
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References	Study Quality
37 (21354739)	Good
36 (28884133)	4
33 (22850222)	3
32 (21900839)	2
34 (17954662)	4
35 (24361174)	3

Radiography rib views	May be appropriate	Limited	☼☼☼ 1-10 mSv		5	5	1	2	1	3	9	0	0	0	0
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References	Study Quality
16 (24209723)	4

US chest	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	3	3	4	2	4	2	4	0	0	0	0
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References	Study Quality
43 (25911140)	1
27 (27494286)	4
44 (25038014)	2
39 (23206603)	4
46 (22675711)	2
32 (21900839)	2
45 (17951616)	1

CT chest without and with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	13	3	0	0	0	0	0	0	0
		References		Study Quality											
		29 (21862774)		4											
		15 (21466934)		4											
		27 (27494286)		4											
		31 (24585297)		3											
		30 (21571655)		4											
		28 (19931110)		4											
WBC scan chest	Usually not appropriate	Expert Consensus	☹☹☹☹ 10-30 mSv		1	1	14	2	0	0	0	0	0	0	0

Variant 3: Nontraumatic chest wall pain. Suspected infectious or inflammatory condition. Secondary evaluation after normal chest radiograph. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT chest with IV contrast	Usually appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	8	8	0	0	0	0	0	0	2	10	4
		References		Study Quality											
		51 (25742551)		2											
		50 (20878342)		3											
		52 (28363377)		4											
		48 (24515885)		4											
		53 (22119315)		1											
		54 (21834915)		1											
CT chest without IV contrast	Usually appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	7	7	0	0	0	0	2	1	12	1	0
		References		Study Quality											
		51 (25742551)		2											

50 (20878342)	3
52 (28363377)	4
48 (24515885)	4
53 (22119315)	1
54 (21834915)	1

WBC scan chest	May be appropriate	Limited	⊕⊕⊕⊕ 10-30 mSv		6	6	0	1	0	2	4	5	3	1	0
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References	Study Quality
60 (25475377)	4
56 (25917543)	4
61 (29452615)	4
55 (23359660)	4

MRI chest without IV contrast	May be appropriate (Disagreement)	Expert Opinion	○ 0 mSv	○ 0 mSv [ped]	5	5	0	1	1	2	7	3	2	0	0
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References	Study Quality
58 (20558917)	4
52 (28363377)	4
48 (24515885)	4
49 (22798267)	2
59 (22226453)	1
53 (22119315)	1

MRI chest without and with IV contrast	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	1	9	0	3	2	0
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References	Study Quality
58 (20558917)	4
52 (28363377)	4
48 (24515885)	4
49 (22798267)	2
59 (22226453)	1
53 (22119315)	1

53 (22119315)	1
54 (21834915)	1

Variant 4: Nontraumatic chest wall pain. History of prior chest intervention. Secondary evaluation after normal chest radiograph. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT chest with IV contrast	Usually appropriate	Strong	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	8	8	0	0	0	0	0	0	2	11	3

References	Study Quality
66 (26129745)	4
71 (23415550)	2
8 (22821673)	2
69 (30850215)	4
73 (30403979)	2
70 (25910220)	4
74 (23558226)	4
72 (22815325)	4
65 (21995807)	1
67 (19775906)	4
64 (30300004)	4
68 (15627194)	2

CT chest without IV contrast	Usually appropriate	Strong	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	7	7	0	0	0	0	1	2	10	3	0
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References	Study Quality
66 (26129745)	4
71 (23415550)	2
8 (22821673)	2
69 (30850215)	4
73 (30403979)	2

70 (25910220)	4
74 (23558226)	4
72 (22815325)	4
65 (21995807)	1
67 (19775906)	4
64 (30300004)	4
68 (15627194)	2

MRI chest without IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	5	5	0	1	2	1	7	4	0	1	0
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References	Study Quality
27 (27494286)	4
63 (26351442)	4
69 (30850215)	4
79 (30443994)	4

MRI chest without and with IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	5	5	0	0	1	2	7	4	1	1	0
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References	Study Quality
27 (27494286)	4
63 (26351442)	4
69 (30850215)	4
79 (30443994)	4

FDG-PET/CT skull base to mid-thigh	May be appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	4	4	2	1	1	7	4	1	0	0	0
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References	Study Quality
75 (26756408)	2
77 (30196022)	1
76 (22228342)	4
78 (31456858)	2

US chest	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	4	4	1	2	2	3	6	1	0	0	0
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		References	Study Quality												
		70 (25910220)	4												
Bone scan whole body	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	8	2	4	0	1	0	1	0	0
		References	Study Quality												
		62 (23585956)	4												
		63 (26351442)	4												
		64 (30300004)	4												
Radiography rib views	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		2	2	8	6	1	0	1	0	0	0	0
WBC scan chest	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv		2	2	5	3	2	1	3	1	0	0	0
		References	Study Quality												
		80 (11973486)	2												
		81 (8462208)	4												
CT chest without and with IV contrast	Usually not appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	0	0	1	0	0	0	0	0
		References	Study Quality												
		66 (26129745)	4												
		71 (23415550)	2												
		8 (22821673)	2												
		69 (30850215)	4												
		73 (30403979)	2												
		70 (25910220)	4												
		74 (23558226)	4												
		72 (22815325)	4												
		65 (21995807)	1												
		67 (19775906)	4												
		64 (30300004)	4												
		68 (15627194)	2												

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.