

**American College of Radiology**  
**ACR Appropriateness Criteria®**

## Suspected Acute Aortic Syndrome

**Variant 1: Acute chest pain; suspected acute aortic syndrome.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CTA chest with IV contrast	Usually appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	9	9	0	0	0	0	0	1	1	2	14
		References		Study Quality											
		27 (28360261)		3											
		17 (25415694)		2											
		21 (12008187)		3											
		24 (7824707)		2											
		26 (8668776)		2											
		22 (12819341)		2											
		23 (1934367)		3											
		25 (8416265)		1											
		32 (18790585)		4											
		33 (19703877)		4											
		30 (15115998)		3											
CTA chest abdomen pelvis with IV contrast	Usually appropriate	Limited	☼☼☼☼☼ 30-100 mSv	☼☼☼☼☼ 10-30 mSv [ped]	8	8	0	0	0	0	1	1	7	3	6
		References		Study Quality											
		21 (12008187)		3											
		34 (12598026)		4											

		35 (16831999)			M											
CT chest with IV contrast	Usually appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	7	7	0	0	2	0	4	3	5	3	1	
CT chest without and with IV contrast	Usually appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	7	7	0	0	1	0	5	1	3	3	5	
		References			Study Quality											
		17 (25415694)			2											
MRA chest without and with IV contrast	Usually appropriate	Strong	○ ○ 0 mSv	○ ○ 0 mSv [ped]	7	7	1	0	0	1	1	3	9	2	1	
		References			Study Quality											
		24 (7824707)			2											
		26 (8668776)			2											
		39 (8416269)			4											
		40 (1735142)			3											
		25 (8416265)			1											
		38 (9395943)			3											
		35 (16831999)			M											
MRA chest abdomen pelvis without and with IV contrast	Usually appropriate	Expert Consensus	○ ○ 0 mSv	○ ○ 0 mSv [ped]	7	7	0	0	0	0	0	1	14	2	0	
US echocardiography transesophageal	Usually appropriate	Limited	○ ○ 0 mSv	○ ○ 0 mSv [ped]	7	7	0	0	0	0	0	0	12	4	1	
		References			Study Quality											
		47 (24030294)			3											
		40 (1735142)			3											
		43 (1934402)			3											
		45 (1555267)			3											
		46 (10593804)			4											
		44 (8772749)			3											
Radiography chest	Usually appropriate	Limited	☼ <0.1 mSv	☼ <0.03 mSv [ped]	7	7	0	0	1	0	2	1	6	2	6	

		References		Study Quality												
		41 (5848976)		4												
		10 (10589336)		4												
		42 (24055476)		3												
CTA coronary arteries with IV contrast	May be appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	6	6	0	0	0	0	8	4	2	2	1	
MRA chest without IV contrast	May be appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	6	6	0	0	0	2	6	9	0	0	0	
		References		Study Quality												
		37 (11930077)		3												
		36 (20013276)		3												
Aortography chest	May be appropriate	Limited	☹☹☹ 1-10 mSv		5	5	1	0	4	3	7	2	0	1	0	
		References		Study Quality												
		3 (12900496)		4												
		14 (1621436)		4												
		13 (8074043)		3												
		1 (26205591)		3												
MRA chest abdomen pelvis without IV contrast	May be appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	5	5	0	0	0	4	9	4	0	0	0	
US echocardiography transthoracic resting	May be appropriate	Strong	○ ○ mSv	○ ○ mSv [ped]	5	5	0	0	0	1	10	3	3	0	0	
		References		Study Quality												
		39 (8416269)		4												
		40 (1735142)		3												
		25 (8416265)		1												
		48 (2563839)		3												
		49 (20037148)		2												
		44 (8772749)		3												

CT chest without IV contrast	May be appropriate	Strong	☢☢☢ 1-10 mSv	☢☢☢☢☢ 3-10 mSv [ped]	4	4	1	1	7	3	3	2	1	0	0
		References		Study Quality											
		15 (23521452)		2											
		16 (24939821)		2											
MRI chest abdomen pelvis without IV contrast	May be appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	4	4	0	5	3	7	2	0	0	0	0
MRI chest abdomen pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	3	3	0	4	5	2	4	1	1	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](http://www.acr.org/ac).