

American College of Radiology
ACR Appropriateness Criteria®

Nontraumatic Aortic Disease

Variant 1: Congenital aortic disease. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRA chest and abdomen without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	1	0	5	8
		References		Study Quality											
		28 (16891235)		3											
		27 (18356435)		2											
		23 (25644073)		3											
		24 (25476670)		4											
		21 (28617686)		4											
		15 (27384018)		4											
		17 (15699283)		3											
		22 (16249863)		4											
		29 (11305558)		4											
		26 (25061611)		3											
		25 (27390537)		4											
CTA chest and abdomen with IV contrast	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		8	8	0	0	0	0	0	0	2	7	5
		References		Study Quality											
		19 (23395099)		4											
		20 (16687740)		M											
		6 (29724423)		4											

			73 (30003767)			4										
			75 (29982780)			4										
			44 (29313811)			Good										
			5 (28473082)			4										
Radiography chest	May be appropriate	Limited	☼ <0.1 mSv	☼ <0.03 mSv [ped]	5	5	0	1	0	6	7	1	0	0	0	
		References	Study Quality													
		21 (28617686)	4													
		10 (28377475)	4													
CT chest and abdomen without IV contrast	May be appropriate	Limited	☼☼☼☼ 10-30 mSv		5	5	0	1	0	6	7	1	0	0	0	
		References	Study Quality													
		45 (18664851)	3													
		48 (15068950)	4													
		49 (17374865)	4													
		50 (22624970)	4													
		46 (15136894)	4													
		47 (19462198)	4													
CT chest and abdomen with IV contrast	May be appropriate	Limited	☼☼☼☼ 10-30 mSv		5	5	0	0	1	0	11	3	0	0	0	
		References	Study Quality													
		45 (18664851)	3													
		48 (15068950)	4													
		49 (17374865)	4													
		50 (22624970)	4													
		46 (15136894)	4													
		47 (19462198)	4													
US echocardiography transthoracic resting	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	2	2	2	6	5	2	0	0	0	0	0	

US echocardiography transesophageal	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	3	7	4	0	1	0	0	0	0
Aortography chest and abdomen	Usually not appropriate	Limited	⊕⊕⊕⊕ 10-30 mSv		2	2	2	6	7	0	0	0	0	0	0
		References	Study Quality												
		44 (29313811)	Good												

Variant 3: Degenerative or atherosclerotic aortic disease. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CTA chest and abdomen with IV contrast	Usually appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv		9	9	0	0	0	0	0	0	0	2	12
		References	Study Quality												
		88 (19427980)	1												
		95 (25173340)	4												
		86 (18254665)	2												
		90 (18810452)	3												
		91 (19704327)	4												
		92 (21327586)	3												
		93 (19325064)	4												
		94 (29880113)	4												
		96 (29261347)	3												
		97 (28546046)	4												
		98 (28484713)	3												
		89 (28437714)	3												
		99 (27989994)	4												
		87 (26654390)	4												
MRA chest and abdomen without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	0	1	2	9	2

References	Study Quality
102 (8633452)	2
101 (11930077)	3
106 (20013276)	3
42 (25623219)	4
95 (25173340)	4
105 (18496046)	1
107 (8021526)	1
110 (26251355)	4
99 (27989994)	4
100 (9166568)	4
103 (9714107)	3
104 (8656981)	3
108 (18607152)	4
109 (16445985)	4

MRA chest and abdomen without IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	1	0	2	8	2	1
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References	Study Quality
102 (8633452)	2
101 (11930077)	3
106 (20013276)	3
42 (25623219)	4
95 (25173340)	4
105 (18496046)	1
107 (8021526)	1
110 (26251355)	4
99 (27989994)	4
100 (9166568)	4
103 (9714107)	3
104 (8656981)	3
108 (18607152)	4

FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 3-10 mSv [ped]	2	2	4	5	4	1	0	0	0	0	0
Aortography chest and abdomen	Usually not appropriate	Expert Consensus	☢☢☢☢☢ 10-30 mSv		2	2	3	5	3	1	0	2	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.