American College of Radiology ACR Appropriateness Criteria[®]

Thoracoabdominal Aneurysm or Dissection: Treatment Planning and Follow-Up

Variant 1: Follow-up of known thoracoabdominal aortic aneurysm or dissection without repair. Without or with new symptoms.

	Appropriate	eness	700			D. (]	Final	Та	bulati	ons		
Procedure	Category	y	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CTA chest abdomen pelvis with IV contrast	Usually appropriat	, ite	Limited	ଷତତତତ 30- 100 mSv	-	9	9	0	0	0	0		0 1	1	2	18
			References		Study	y Quality										
			35 (24625611)			4										
			36 (28027791)			4										
			34 (19884165)			3										
			31 (24503676)			4										
			33 (25623219)			4		_			_					
MRA chest abdomen pelvis without and with IV contrast	Usually appropriat	, .te	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	1		1 0	2	12	6
			References		Study	y Quality										
			51 (24399340)			2										
			50 (20200628)			2										
			49 (20171907)			1										
			48 (24740558)			3										
			45 (27553926)			1										
			44 (28388971)			2										
			43 (31054559)			4										
			41 (7824707)			2										
			40 (28987425)			4										

			39 (20013276)			3										
			38 (22386146)			2										
			34 (19884165)			3										
			33 (25623219)			4										
			37 (17968882)			3										
			46 (30664117)			2										
			47 (28905233)			2					-		1			
MRA chest abdomen pelvis without IV contrast	Usu: approj		Strong	O 0 mSv	v O 0 mSv [ped]	7	7	0	1	0	0	2	0	13	5	1
			References		Study	y Quality										
			52 (30694008)			3										
			53 (22415593)			3										
			51 (24399340)			2										
			45 (27553926)			1										
		37 (17968882)			3											
			39 (20013276)			3										
			44 (28388971)			2										
			50 (20200628)			2										
CTA chest and abdomen with IV contrast	May approj		Expert Consensus	֎֎֎֎ 10- mSv	-30	6	6	0	0	1	0	7	10	3	0	1
MRA chest and abdomen without IV contrast	May approj		Expert Consensus	O 0 mSv	v O 0 mSv [ped]	6	6	0	0	1	0	6	9	3	3	0
MRA chest and abdomen without and with IV contrast	May approj		Expert Consensus	O 0 mSv	v O 0 mSv [ped]	6	6	0	0	0	0	4	10	4	3	1
CT chest abdomen pelvis with IV contrast	May approj		Expert Consensus	ଡଡଡଡ 10- mSv	-30 🕸 🏵 😌 3- 10 mSv [ped]	5	5	0	0	0	1	12	2	7	0	0
CT chest abdomen pelvis without IV contrast	May approj		Strong	୫୫୫୫ 10- mSv	00002	5	5	0	0	3	6	11	1	1	0	0
			References		Study	y Quality										
			30 (30835189)			1										

		33 (25623219)			4										
		31 (24503676)			4										
		29 (22451563)			2										
CT chest abdomen pelvis without and with IV contrast	May be appropriate	Expert Consensus	ବ୍ୟତ୍ୟକ 10-30 mSv	&&&& 10-30 mSv [ped]	5	5	0	0	0	1	11	6	3	1	0
CT chest and abdomen without and with IV contrast	May be appropriate	Expert Consensus	େବେବେବ 10-30 mSv		4	4	0	2	8	4	6	1	1	0	0
CT chest and abdomen with IV contrast	May be appropriate	Expert Consensus	ଝେଝିଝିଝି 10-30 mSv		4	4	0	2	9	2	6	2	1	0	0
US duplex Doppler aorta abdomen	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	4	5	9	3	1	0	0	0	0
		References		Study	/ Quality										
		43 (31054559)			4										
		56 (15838577)			3				_	-					
US echocardiography transthoracic resting	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	3	8	9	1	1	0	0	0	0
		References		Study	/ Quality										
		58 (25529153)			4										
		33 (25623219)			4										
		57 (20823280)			4										
Radiography chest	Usually not appropriate	Limited	€ <0.1 mSv	Image: Second state 0.03 mSv [ped]	3	3	5	5	9	2	1	0	0	0	0
		References		Study	/ Quality										
		55 (14715319)			1										
		54 (26724510)			4										
		53 (22415593)			3										
CT chest and abdomen without IV contrast	Usually not appropriate	Expert Consensus	େବେବେବ 10-30 mSv		3	3	2	4	6	3	5	1	1	0	0

Aortography chest abdomen pelvis	Usuall approp	Limited	ଡେଡେଡେ 10- mSv	30		3	3	5	4	7	2	2	2	0	0	0
		References			Study	v Quality										
		27 (29613964) 28 (12694105)				4										
		28 (12694105)				2						-				
Radiography chest abdomen pelvis	Usuall approp	Limited	ତେତେ 1-1(mSv	0		2	2	9	6	7	0	0	0	0	0	0
		References			Study	v Quality										
		55 (14715319)				1										
		me				4										
		53 (22415593)				3										

Variant 2: Planning for endovascular or open repair of thoracoabdominal aorta aneurysm or dissection.

	Appropriateness	COL							F	inal	Tabu	ilatio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CTA chest abdomen pelvis with IV contrast	Usually appropriate	Strong	֎֎֎֎֎ 30- 100 mSv		9	9	1	0	0	0	0	1	0	2	18
		References		Study	Quality										
		68 (31705825)			3										
		72 (29080918)			2										
		71 (26344681)			3										
		70 (17306951)			1										
		69 (26497024)			3										
		67 (22021522)			2										
		66 (22459348)			2										
		65 (31635962)			2										
		64 (30855116)			4										
		63 (22176725)			4										
		62 (12618702)			1										

		61 (23392427)			1										
		31 (24503676)			4										
		14 (26792544)			1										
		9 (23062495)			2										
		60 (19803256)			4										
MRA chest abdomen pelvis without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	1	1	0	4	11	5
		References		Study	Quality										
		73 (23047141)			2										
		72 (29080918)			2										
		71 (26344681)			3										
		68 (31705825)			3										
		65 (31635962)			2										
		14 (26792544)			1										
		9 (23062495)			2										
		38 (22386146)			2										
		62 (12618702)			1										
		64 (30855116)			4										
		67 (22021522)			2										
		70 (17306951)			1					_					
MRA chest abdomen pelvis without IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	1	0	0	0	4	2	11	3	1
		References		Study	Quality										
		61 (23392427)			1										
		63 (22176725)			4										
		74 (29162027)			2										
CTA chest and abdomen with IV contrast	May be appropriate (Disagreement)	Expert Opinion	ଝେଝଝ 10-3 mSv	0	5	5	2	4	6	2	3	3	2	0	0
CT chest abdomen pelvis with IV contrast	May be appropriate (Disagreement)	Expert Opinion	ଡଡଡଡ 10-3 mSv	0 \$\$\$\$\$ 3- 10 mSv [ped]	5	5	2	3	8	2	3	1	3	0	0

CT chest abdomen pelvis without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	ଡଡଡଡ 10-30 mSv	ବହହହହ 10-30 mSv [ped]	5	5	2	3	7	2	4	2	1	1	0
MRA chest and abdomen without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	3	2	6	4	2	4	1	0	0
CT chest abdomen pelvis without IV contrast	Usually not appropriate	Expert Consensus	ଡେ≎େବେ 10-30 mSv	≎≎≎≎ 3- 10 mSv [ped]	3	3	3	4	8	3	4	0	0	0	0
MRA chest and abdomen without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	4	2	8	6	1	1	0	0	0
CT chest and abdomen without IV contrast	Usually not appropriate	Expert Consensus	ତତତତ 10-30 mSv		3	3	5	4	7	4	2	0	0	0	0
CT chest and abdomen without and with IV contrast	Usually not appropriate	Expert Consensus	ତତତତ 10-30 mSv		3	3	3	4	7	4	3	1	0	0	0
CT chest and abdomen with IV contrast	Usually not appropriate	Expert Consensus	ତତତତ 10-30 mSv		3	3	3	4	7	5	2	1	0	0	0
Aortography chest abdomen pelvis	Usually not appropriate	Limited	ତତତତ 10-30 mSv		3	3	2	7	5	2	4	1	1	0	0
		References		Study	V Quality										
		27 (29613964)			4										
		59 (19251176)			4										
US duplex Doppler aorta abdomen	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	8	5	5	1	3	0	0	0	0
US echocardiography transthoracic resting	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	7	5	4	2	2	0	0	1	1
		References		Study	Quality										
		33 (25623219)			4										
Radiography chest	Usually not appropriate	Expert Consensus	€ <0.1 mSv		2	2	11	6	3	0	1	0	1	0	0

Radiography chest abdomen pelvis	Usually not appropriate	Expert Consensus	ଝଝଝ 1-10 mSv		1	1	15	4	3	0	0	0	0	0	0	
----------------------------------	-------------------------	---------------------	-----------------	--	---	---	----	---	---	---	---	---	---	---	---	--

Variant 3: Follow-up after endovascular repair of thoracoabdominal aortic aneurysm or dissection.

Durandaria	Appropriateness	COF	A J14- D.D.I	D. J. DDI	D-4	M. P.				Final	Tab	ulati	ons		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CTA chest abdomen pelvis with IV contrast	Usually appropriate	Strong	֎֎֎֎֎ 30- 100 mSv		9	9	0	0	1	0	0	1	0	3	17
		References		Study	y Quality										
		83 (20924762)			3										
		84 (28662928)			4										
		82 (27542700)			4										
		81 (27436027)			1										
		80 (23465175)			4										
		79 (23403221)			4										
		78 (19104821)			2										
		32 (23711975)			3										
		17 (24246537)			3										
		14 (26792544)			1										
		77 (24480084)			2										
MRA chest abdomen pelvis without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	1	2	1	6	8	4
		References		Study	y Quality										
		88 (27357219)			1										
		87 (14718808)			2										
		86 (16630731)			3										
		85 (18307209)			4										
		84 (28662928)			4										
		83 (20924762)			3										

		82 (27542700)			4										
		80 (23465175)			4										
		79 (23403221)			4										
		78 (19104821)			2										
		20 (30792053)			2										
		17 (24246537)			3										
		14 (26792544)			1										
		76 (29460048)			4										
MRA chest abdomen pelvis without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	0	1	0	1	8	9	3	0	0
		References		Study	Quality		-								
		89 (31075419)			3										
CTA chest and abdomen with IV contrast	May be appropriate (Disagreement)	Expert Opinion	ଷଷଷଷ 10-30 mSv)	5	5	2	2	7	2	3	5	1	0	0
CT chest abdomen pelvis with IV contrast	May be appropriate	Expert Consensus	ଷଷଷଷ 10-30 mSv)	5	5	0	0	0	1	15	5	1	0	0
CT chest abdomen pelvis without and with IV contrast	May be appropriate	Expert Consensus	ଡଡଡଡ 10-30 mSv	0 10-30 mSv [ped]	5	5	0	0	1	2	13	3	1	2	0
MRA chest and abdomen without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	2	3	5	4	5	2	1	0	0
Aortography chest abdomen pelvis	May be appropriate (Disagreement)	Expert Opinion	ଡଡଡଡ 10-30 mSv)	5	5	0	3	1	4	10	4	0	0	0
		References		Study	v Quality										
		27 (29613964)			4										
		76 (29460048)			4										
		75 (10751479)			1										
CT chest abdomen pelvis without IV contrast	May be appropriate	Limited	ଡଡଡଡ 10-30 mSv)	4	4	2	2	6	4	6	1	1	0	0

		References		Study	Quality										
		32 (23711975)			3										
		77 (24480084)			2										
		76 (29460048)			4										
MRA chest and abdomen without IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	4	4	2	4	4	6	5	0	1	0	0
US duplex Doppler aorta abdomen	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	5	4	8	5	0	0	0	0	0
		References		Study	Quality			-							
		93 (12514572)			3										
		92 (29850415)			4										
		91 (11107086)			1										
		84 (28662928)			4										
		82 (27542700)			4										
		76 (29460048)			4										
US echocardiography transthoracic resting	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	5	4	8	0	5	0	0	0	0
		References		Study	v Quality										
		33 (25623219)			4										
		58 (25529153)			4										
Radiography chest	Usually not appropriate	Limited	參 <0.1 mSv	€ <0.03 mSv [ped]	3	3	7	3	8	2	1	0	1	0	0
		References		Study	v Quality										
		90 (14656185)			4										
		76 (29460048)		1	4										
Radiography chest abdomen pelvis	Usually not appropriate	Limited	ଡଡ ଡ 1-10 mSv		3	3	8	3	7	2	1	0	0	0	1
		References		Study	v Quality										
		90 (14656185)			4										
		76 (29460048)			4										

CT chest and abdomen without IV contrast	Usually not appropriate	Expert Consensus	ଡଡଡଡ 10-30 mSv	3	3	2	4	9	0	6	1	0	0	0
CT chest and abdomen without and with IV contrast	Usually not appropriate	Expert Consensus	ବ୍ୟବ୍ୟବ୍ୟ 10-30 mSv	3	3	2	4	7	3	5	0	0	1	0
CT chest and abdomen with IV contrast	Usually not appropriate	Expert Consensus	ବ୍ୟବ୍ୟକ 10-30 mSv	3	3	2	4	7	4	4	1	0	0	0

Variant 4: Follow-up after open repair of thoracoabdominal aortic aneurysm or dissection.

Procedure	Appropr	iateness				D (1		Final Tabulati						tions					
	Categor		SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9			
CTA chest abdomen pelvis with IV contrast	Usua approp			֎֎֎֎֎ 30- 100 mSv		9	9	0	2	0	0	0	1	1	4	14			
		References			Study Quality														
			35 (24625611)		4														
			34 (19884165)			3													
		31 (24503676)				4													
	-	33 (25623219)			4							-			. <u> </u>				
MRA chest abdomen pelvis without and with IV contrast	Usua approp		Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	2	1	4	9	6			
		References			Study														
		23 (32772927)			3														
		24 (21103933)			4														
		33 (25623219)					-				-	-							
CTA chest and abdomen with IV contrast	May approp		Expert Consensus	ଷଷଷ 10-30 mSv		6	6	0	0	0	0	9	6	6	1	0			
MRA chest and abdomen without and with IV contrast	May approp		Expert Consensus	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	0	9	9	4	0	0			
MRA chest abdomen pelvis without IV contrast	May approp		Strong	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	1	4	9	6	1	1			

		References			Stud	y Quality										
			51 (24399340)													
			45 (27553926)													
			39 (20013276)													
			38 (22386146)													
			34 (19884165)													
			33 (25623219)													
			37 (17968882)		3											
			44 (28388971)													
			50 (20200628)													
CT chest abdomen pelvis with IV contrast	May approp		Expert Consensus	֎֎֎֎ 10-3 mSv	60	5	5	0	1	0	3	14	3	1	0	0
CT chest abdomen pelvis without IV contrast	May approp		Strong	ତତତତ 10-3 mSv	30	5	5	0	0	2	7	12	1	0	0	0
			References		Stud											
			31 (24503676)													
			30 (30835189)													
			29 (22451563)					_								
CT chest abdomen pelvis without and with IV contrast	May approp		Expert Consensus	ଡଡଡଡ 10-3 mSv	0 10-30 mSv [ped]	5	5	0	0	0	1	15	5	0	0	1
MRA chest and abdomen without IV contrast	May approp		Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	0	1	0	2	12	5	2	0	0
CT chest and abdomen without and with IV contrast	May approp			ଝେଝେଝ 10-3 mSv	60	5	5	0	0	1	5	14	2	0	0	0
CT chest and abdomen with IV contrast	May approp			ଝଝଝଝ 10-3 mSv	0	5	5	0	0	1	8	11	2	0	0	0
CT chest and abdomen without IV contrast	Usuall approp		Expert Consensus	ଝେ ଝେଝ 10-3 mSv	60	3	3	3	3	9	0	6	1	0	0	0

US duplex Doppler aorta abdomen	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	6	7	9	0	0	0	0	0	0
	References			Study											
		43 (31054559)			4										
		56 (15838577)					_								
US echocardiography transthoracic resting	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	6	6	6	1	3	0	0	0	0
		References		Study			-								
		58 (25529153)													
Aortography chest abdomen pelvis	Usually not appropriate	Limited	֎֎֎֎ 10-30 mSv		2	2	7	7	8	0	0	0	0	0	0
	References			Study											
		27 (29613964)		4											
Radiography chest	Usually not appropriate	Expert Consensus	愛 < 0.1 mSv		1	1	12	2	7	1	0	0	0	0	0
Radiography chest abdomen pelvis	Usually not appropriate	Expert Consensus	ଡେଡେ 1-10 mSv		1	1	13	2	7	0	0	0	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.