



			27 (29663178)		2													
			28 (27236529)		3													
MRI heart function and morphology without and with IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	7	7	0	0	0	0	2	3	10	3	0			
			References		Study Quality													
			37 (32412119)		3													
			36 (24496537)		2													
			35 (26777218)		3													
			34 (31874788)		2													
			33 (31397511)		3													
			28 (27236529)		3													
			32 (34303756)		Good													
			31 (25464427)		3													
			6 (33600025)		4													
US echocardiography transesophageal	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	7	7	0	0	0	0	1	0	11	3	3			
			References		Study Quality													
			40 (7486462)		1													
			39 (8249844)		2													
			38 (25666720)		3													
MRA chest without IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	5	5	0	0	0	4	11	0	2	1	0			
			References		Study Quality													
			29 (26149175)		3													
			30 (19561516)		3													
MRI heart function and morphology without IV contrast	May be appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	4	4	0	1	6	8	3	0	0	0	0			
CTA coronary arteries with IV contrast	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	3	3	2	0	9	3	4	0	0	0	0			

US echocardiography transthoracic resting	Usually not appropriate	Strong	0 0 mSv	0 0 mSv [ped]	3	3	1	2	7	7	0	1	0	0	0
		References		Study Quality											
		41 (21440414)		2											
		42 (27822477)		2											
Catheter venography pulmonary	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv		3	3	5	3	8	1	0	0	0	0	1
		References		Study Quality											
		15 (27116237)		3											
CT chest with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼☼ 3-10 mSv [ped]	2	2	9	1	2	3	2	0	0	1	0
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼☼ 3-10 mSv [ped]	2	2	9	1	3	2	2	0	1	0	0
CT chest without IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼☼ 3-10 mSv [ped]	1	1	11	2	3	1	0	1	0	0	0
		References		Study Quality											
		16 (21908449)		2											
Arteriography coronary	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	12	4	1	0	0	1	0	0	0
MRA coronary arteries without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	11	5	0	1	1	0	0	0	0
MRA coronary arteries without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	10	5	1	0	2	0	0	0	0
SPECT or SPECT/CT MPI rest and stress	Usually not appropriate	Expert Consensus	☼☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	1	1	12	3	1	0	2	0	0	0	0

**Variant 2: Atrial fibrillation. Preprocedural planning prior to left atrial appendage endovascular occlusion.**



			28 (27236529)		3												
			50 (23454807)		2												
MRI heart function and morphology without IV contrast	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	3	3	1	2	8	3	3	0	0	0	0	1	
		References		Study Quality													
			28 (27236529)		3												
US echocardiography transthoracic resting	Usually not appropriate	Strong	0 0 mSv	0 0 mSv [ped]	3	3	3	2	12	0	1	0	0	0	0	0	
		References		Study Quality													
			41 (21440414)		2												
			42 (27822477)		2												
CTA coronary arteries with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	4	7	5	0	2	0	0	0	0		
MRA chest without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	8	3	2	2	2	1	0	0	0		
CT chest with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	11	1	0	3	1	1	0	1	0		
CT chest without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	12	3	1	2	0	0	0	0	0		
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	11	1	0	2	3	0	1	0	0		
Arteriography coronary	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	13	1	1	2	0	1	0	0	0		
MRA coronary arteries without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	11	5	0	1	1	0	0	0	0		
MRA coronary arteries without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	11	5	0	2	0	0	0	0	0		



			28 (27236529)		3												
			50 (23454807)		2												
MRA chest without and with IV contrast	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	3	3	2	0	8	2	3	2	0	0	1		
		References		Study Quality													
			28 (27236529)		3												
MRI heart function and morphology without IV contrast	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	3	3	2	2	8	2	3	1	0	0	0		
		References		Study Quality													
			28 (27236529)		3												
US echocardiography transthoracic resting	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	3	3	2	3	9	0	4	0	0	0	0		
CTA coronary arteries with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	3	9	4	0	2	0	0	0	0		
CT chest with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	9	0	5	1	2	1	0	0	0		
MRA chest without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	8	4	2	2	2	0	0	0	0		
CT chest without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	2	1	0	0	0	0	0	0		
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	12	1	1	1	1	2	0	0	0		
Arteriography coronary	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	14	1	2	0	0	1	0	0	0		
MRA coronary arteries without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	12	4	0	0	2	0	0	0	0		
MRA coronary arteries without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	12	3	1	1	1	0	0	0	0		

SPECT or SPECT/CT MPI rest and stress	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	1	1	15	2	0	0	0	0	1	0	0
Catheter venography pulmonary	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv		1	1	13	2	2	0	0	0	0	1	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).