

49 (25160568)	3
48 (29467047)	4

MRI heart with function and inotropic stress without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	3	3	3	5	4	4	0	0	0	0	0
CTA coronary arteries with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv		2	2	3	6	8	0	0	0	0	0	0
CT chest with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	5	4	5	1	0	0	0	0	0
CT chest without IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	7	4	3	1	0	0	0	0	0
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	5	6	3	1	0	0	0	0	0
Arteriography coronary	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv		2	2	7	5	3	0	0	0	0	0	0
Arteriography coronary with ventriculography	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	4	8	2	1	0	0	0	0	0
MRI chest without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	7	3	4	0	0	1	0	0	0
MRI chest without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	6	4	3	1	1	0	0	0	0
MRI heart with function and inotropic stress without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	6	4	5	1	0	0	0	0	0
FDG-PET/CT heart	Usually not appropriate	Expert Consensus	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	2	2	6	6	1	0	0	0	2	0	0
CT coronary calcium	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv		1	1	8	4	3	0	0	0	0	0	0

55 (26130811)	4
64 (24412186)	3
12 (27037982)	4
80 (19889655)	4
81 (22865865)	3

MRI heart function and morphology without IV contrast	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	1	4	3	4	2	1
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References	Study Quality
69 (15893188)	2
74 (11913479)	3
2 (27438188)	4
63 (27267362)	Good
66 (26362631)	3
75 (25104503)	3
78 (24593856)	2
65 (23498672)	2
70 (23436872)	4
52 (20413025)	4
54 (18084757)	2
56 (21415124)	3
64 (24412186)	3
67 (19032744)	3
72 (24829369)	2
76 (23775258)	4
77 (17968945)	2
79 (17399811)	4
62 (21720941)	3

FDG-PET/CT heart	May be appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	6	6	0	0	0	2	3	8	2	1	0
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References	Study Quality
61 (28418949)	2

			54 (18084757)		2												
			60 (22228794)		Good												
CT heart function and morphology with IV contrast	May be appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv		5	5	0	1	0	0	9	5	1	0	0		
			References		Study Quality												
			58 (26209459)		1												
			57 (25693664)		3												
			59 (28382537)		2												
CTA coronary arteries with IV contrast	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv		3	3	3	3	2	4	2	0	1	0	0		
CT chest with IV contrast	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	3	3	1	4	4	1	3	1	1	0	0		
CT chest without IV contrast	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	3	3	2	4	9	1	0	0	0	0	0		
Arteriography coronary with ventriculography	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	3	3	3	4	3	3	1	1	0	0	0		
MRI chest without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	3	3	5	1	7	0	0	2	0	0	0		
MRI chest without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	3	3	6	0	5	1	1	2	0	0	0		
MRI heart with function and inotropic stress without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	3	3	4	3	3	0	3	1	1	0	0		
CT coronary calcium	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv		2	2	6	5	2	1	1	0	0	0	0		
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	2	2	5	4	4	1	0	0	1	0	0		
Arteriography coronary	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv		2	2	6	6	2	1	0	0	0	0	0		

108 (25285584)	3
84 (23470270)	2
111 (23769489)	3
68 (23602692)	2
83 (24108563)	4
97 (12821550)	2
98 (23462786)	2
100 (28189542)	4
101 (24254478)	4
102 (23500246)	2
103 (21830182)	4
104 (21245364)	4
105 (25814625)	3
106 (20451693)	2
86 (22772366)	2
107 (20089517)	3
109 (17885073)	2
110 (20417446)	1
112 (22499849)	3
114 (21771988)	4
115 (22720998)	2
116 (22293447)	2
117 (22035445)	2
118 (29128863)	3

MRI heart function and morphology without IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	7	7	0	0	0	0	5	2	5	3	0
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References	Study Quality
113 (27855805)	3
99 (26762873)	2
87 (26607916)	4
108 (25285584)	3

84 (23470270)	2
111 (23769489)	3
83 (24108563)	4
97 (12821550)	2
98 (23462786)	2
100 (28189542)	4
101 (24254478)	4
102 (23500246)	2
103 (21830182)	4
104 (21245364)	4
105 (25814625)	3
106 (20451693)	2
86 (22772366)	2
107 (20089517)	3
109 (17885073)	2
110 (20417446)	1
112 (22499849)	3
114 (21771988)	4
115 (22720998)	2
116 (22293447)	2
117 (22035445)	2
118 (29128863)	3

CT heart function and morphology with IV contrast	May be appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv		6	6	0	0	0	2	2	7	4	0	0
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References	Study Quality
91 (17512361)	2
92 (23689383)	2
93 (20634756)	4
94 (20921912)	4

CTA coronary arteries with IV contrast	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv		3	3	3	2	8	1	1	1	0	0	0
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CT coronary calcium	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		2	2	6	5	1	0	1	1	1	0	0
CT chest with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	6	5	3	0	0	0	1	0	0
CT chest without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	6	5	2	1	0	0	1	0	0
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	7	4	2	1	0	0	1	0	0
Arteriography coronary	Usually not appropriate	Limited	☼☼☼ 1-10 mSv		2	2	5	6	4	1	0	0	0	0	0

References	Study Quality
90 (25009569)	4

Arteriography coronary with ventriculography	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	5	5	5	1	0	0	0	0	0
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References	Study Quality
90 (25009569)	4

MRI chest without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	7	1	5	1	0	0	1	0	0
US echocardiography transthoracic stress	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	3	8	5	0	0	0	0	0	0
US echocardiography transesophageal	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	8	2	6	0	0	0	0	0	0
MRI heart with function and vasodilator stress perfusion without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	4	6	6	0	0	0	0	0	0
MRI heart with function and inotropic stress without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	6	6	3	1	0	0	0	0	0
MRI heart with function and inotropic stress without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	5	6	5	0	0	0	0	0	0

86 (22772366)	2
107 (20089517)	3
109 (17885073)	2
110 (20417446)	1
112 (22499849)	3
114 (21771988)	4
115 (22720998)	2
116 (22293447)	2
117 (22035445)	2
118 (29128863)	3

MRI heart function and morphology without and with IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	8	8	0	0	0	0	0	0	1	7	7
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References	Study Quality
113 (27855805)	3
99 (26762873)	2
87 (26607916)	4
108 (25285584)	3
84 (23470270)	2
111 (23769489)	3
68 (23602692)	2
83 (24108563)	4
97 (12821550)	2
98 (23462786)	2
100 (28189542)	4
101 (24254478)	4
102 (23500246)	2
103 (21830182)	4
104 (21245364)	4
86 (22772366)	2
107 (20089517)	3
109 (17885073)	2

110 (20417446)	1
112 (22499849)	3
114 (21771988)	4
115 (22720998)	2
116 (22293447)	2
117 (22035445)	2
118 (29128863)	3

US echocardiography transthoracic resting	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	8	8	0	0	0	1	1	0	4	2	7
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References	Study Quality
121 (27798758)	2
119 (24703918)	4
122 (24400635)	2
100 (28189542)	4
120 (27338866)	4
86 (22772366)	2
95 (29850820)	4

CT heart function and morphology with IV contrast	May be appropriate	Limited	☹☹☹☹ 10-30 mSv		5	5	1	0	0	1	7	2	3	1	0
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References	Study Quality
127 (23992839)	3

CTA coronary arteries with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		3	3	5	2	2	3	2	1	0	0	0
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US echocardiography transthoracic stress	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	3	3	3	5	8	0	0	0	0	0	0
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US echocardiography transesophageal	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	3	3	6	1	4	0	2	1	0	1	0
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CT chest with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	2	2	7	5	2	0	0	1	0	0	0
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Arteriography coronary with ventriculography	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	2	2	5	3	2	4	1	0	0	0	0	
		References		Study Quality												
		123 (20172912)		4												
MRI chest without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	7	4	3	0	0	0	0	0	1	0
MRI heart with function and vasodilator stress perfusion without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	8	6	2	0	0	0	0	0	0	0
FDG-PET/CT heart	Usually not appropriate	Limited	☹☹☹☹ 10-30 mSv	☹☹☹☹ 3-10 mSv [ped]	2	2	7	1	4	1	2	0	0	0	0	
		References		Study Quality												
		96 (26272522)		3												
CT coronary calcium	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	8	4	3	0	0	0	0	0	0	0
CT chest without IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	9	2	3	0	0	1	0	0	0	
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	9	4	1	0	0	1	0	0	0	
Arteriography coronary	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	9	4	2	0	0	0	0	0	0	
MRI chest without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	8	3	3	0	0	0	0	1	0	
MRI heart with function and inotropic stress without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	11	4	1	0	0	0	0	0	0	
MRI heart with function and inotropic stress without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	12	3	1	0	0	0	0	0	0	

138 (23404383)	2
137 (29885953)	3
140 (17015795)	2
115 (22720998)	2
139 (30545455)	4

FDG-PET/CT heart	May be appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	6	6	0	0	0	2	6	4	3	1	0
CT heart function and morphology with IV contrast	May be appropriate	Limited	☼☼☼☼ 10-30 mSv		5	5	0	0	2	3	6	4	0	0	0

References	Study Quality
136 (16953372)	2

CTA coronary arteries with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		3	3	4	1	3	1	5	1	0	0	0
Arteriography coronary	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		2	2	7	5	4	0	0	0	0	0	0
Arteriography coronary with ventriculography	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	6	2	1	3	1	2	0	0	0
MRI chest without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	7	2	4	0	0	1	1	0	0
MRI chest without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	6	3	4	0	0	1	1	0	0
US echocardiography transesophageal	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	7	1	3	1	1	1	0	1	0
MRI heart with function and vasodilator stress perfusion without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	6	8	2	0	0	0	0	0	0
MRI heart with function and inotropic stress without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	6	4	0	1	2	1	1	0	0

MRI heart with function and inotropic stress without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	8	7	1	0	0	0	0	0	0
CT coronary calcium	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv		1	1	9	2	3	1	0	0	0	0	0
CT chest with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	8	0	3	0	2	2	0	0	0
CT chest without IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	8	1	1	1	3	1	0	0	0
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	8	2	3	0	1	1	0	0	0
US echocardiography transthoracic stress	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	10	5	1	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.