

| | | | | | | | | | | | | | | | | | | | |
|--|--------------------|---------------|--------------|---------------------|---------------|---|---|---|---|----|---|---|---|---|---|--|--|--|--|
| | | 61 (30054114) | | | 2 | | | | | | | | | | | | | | |
| CTA coronary arteries with IV contrast | May be appropriate | Limited | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 4 | 4 | 0 | 0 | 0 | 13 | 6 | 1 | 1 | 0 | 0 | | | | |
| | | References | | | Study Quality | | | | | | | | | | | | | | |
| | | 48 (28321775) | | | 2 | | | | | | | | | | | | | | |
| | | 50 (3338301) | | | 4 | | | | | | | | | | | | | | |
| | | 49 (10807452) | | | 4 | | | | | | | | | | | | | | |
| MRI heart function and morphology without IV contrast | May be appropriate | Strong | 0 0 mSv | 0 0 mSv [ped] | 4 | 4 | 3 | 2 | 4 | 6 | 5 | 2 | 0 | 0 | 0 | | | | |
| | | References | | | Study Quality | | | | | | | | | | | | | | |
| | | 53 (24450522) | | | 4 | | | | | | | | | | | | | | |
| | | 52 (19307481) | | | 4 | | | | | | | | | | | | | | |
| | | 51 (20667520) | | | 3 | | | | | | | | | | | | | | |
| | | 55 (11123385) | | | 4 | | | | | | | | | | | | | | |
| | | 57 (11933919) | | | 3 | | | | | | | | | | | | | | |
| | | 56 (22185868) | | | 4 | | | | | | | | | | | | | | |
| | | 58 (18036445) | | | 4 | | | | | | | | | | | | | | |
| | | 59 (15358027) | | | 1 | | | | | | | | | | | | | | |
| | | 60 (22835669) | | | 3 | | | | | | | | | | | | | | |
| | | 54 (30354431) | | | 4 | | | | | | | | | | | | | | |
| MRI heart function and morphology without and with IV contrast | May be appropriate | Strong | 0 0 mSv | 0 0 mSv [ped] | 4 | 4 | 3 | 0 | 1 | 10 | 5 | 2 | 0 | 0 | 0 | | | | |
| | | References | | | Study Quality | | | | | | | | | | | | | | |
| | | 53 (24450522) | | | 4 | | | | | | | | | | | | | | |
| | | 52 (19307481) | | | 4 | | | | | | | | | | | | | | |
| | | 51 (20667520) | | | 3 | | | | | | | | | | | | | | |
| | | 55 (11123385) | | | 4 | | | | | | | | | | | | | | |
| | | 57 (11933919) | | | 3 | | | | | | | | | | | | | | |
| | | 56 (22185868) | | | 4 | | | | | | | | | | | | | | |
| | | 58 (18036445) | | | 4 | | | | | | | | | | | | | | |

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|---------------|---|
| 59 (15358027) | 1 |
| 60 (22835669) | 3 |
| 54 (30354431) | 4 |

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|---|-------------------------|------------------|----------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| CT heart function and morphology with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼☼ 10-30 mSv | ☼☼☼☼ 3-10 mSv [ped] | 3 | 3 | 7 | 4 | 3 | 3 | 3 | 1 | 1 | 0 | 0 |
| US echocardiography transesophageal | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 3 | 3 | 10 | 1 | 6 | 2 | 1 | 1 | 0 | 0 | 1 |
| CT head with IV contrast | Usually not appropriate | Limited | ☼☼☼ 1-10 mSv | ☼☼☼ 0.3-3 mSv [ped] | 2 | 2 | 11 | 5 | 1 | 2 | 1 | 0 | 2 | 0 | 0 |

| | |
|---------------|---------------|
| References | Study Quality |
| 15 (25763568) | 1 |
| 19 (25539233) | 3 |
| 18 (17551685) | 3 |
| 17 (17111790) | 4 |
| 16 (16292675) | 4 |

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|--|-------------------------|---------|---------|---------------|---|---|---|---|---|---|---|---|---|---|---|
| US echocardiography transthoracic stress | Usually not appropriate | Limited | ○ 0 mSv | ○ 0 mSv [ped] | 2 | 2 | 9 | 3 | 4 | 4 | 1 | 0 | 0 | 0 | 0 |
|--|-------------------------|---------|---------|---------------|---|---|---|---|---|---|---|---|---|---|---|

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|---------------|---------------|
| References | Study Quality |
| 70 (15894976) | 3 |
| 71 (28501918) | 4 |

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|---------------------------------------|-------------------------|---------|----------------|-----------------------|---|---|----|---|---|---|---|---|---|---|---|
| SPECT or SPECT/CT MPI rest and stress | Usually not appropriate | Limited | ☼☼☼☼ 10-30 mSv | ☼☼☼☼☼ 10-30 mSv [ped] | 2 | 2 | 11 | 5 | 3 | 1 | 0 | 0 | 1 | 1 | 0 |
|---------------------------------------|-------------------------|---------|----------------|-----------------------|---|---|----|---|---|---|---|---|---|---|---|

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|---------------|---------------|
| References | Study Quality |
| 63 (23418293) | 3 |

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|-----------------------------|-------------------------|---------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| CT head without IV contrast | Usually not appropriate | Limited | ☼☼☼ 1-10 mSv | ☼☼☼ 0.3-3 mSv [ped] | 1 | 1 | 14 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
|-----------------------------|-------------------------|---------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|

| | |
|---------------|---------------|
| References | Study Quality |
| 15 (25763568) | 1 |
| 19 (25539233) | 3 |

| | | | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|---------------|---------------------|---------------|---|----|---|---|---|---|---|---|---|---|---|---|
| | | | 18 (17551685) | | 3 | | | | | | | | | | | | |
| | | | 17 (17111790) | | 4 | | | | | | | | | | | | |
| | | | 16 (16292675) | | 4 | | | | | | | | | | | | |
| CT head without and with IV contrast | Usually not appropriate | Limited | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 1 | 1 | 14 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 15 (25763568) | | 1 | | | | | | | | | | | | |
| | | | 19 (25539233) | | 3 | | | | | | | | | | | | |
| | | | 18 (17551685) | | 3 | | | | | | | | | | | | |
| | | | 17 (17111790) | | 4 | | | | | | | | | | | | |
| | | | 16 (16292675) | | 4 | | | | | | | | | | | | |
| MRI head without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 2 | 0 | 3 | 1 | 0 | 1 | 1 | 0 | | |
| MRI head without and with IV contrast | Usually not appropriate | Expert Opinion | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| US duplex Doppler carotid artery | Usually not appropriate | Limited | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 12 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 66 (25669837) | | 3 | | | | | | | | | | | | |
| | | | 64 (25122665) | | 4 | | | | | | | | | | | | |
| | | | 20 (19636031) | | 4 | | | | | | | | | | | | |
| | | | 65 (15819284) | | 3 | | | | | | | | | | | | |
| SPECT or SPECT/CT MPI stress only | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | | 1 | 1 | 14 | 4 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| SPECT or SPECT/CT MPI rest only | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | | 1 | 1 | 15 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Variant 2: Presyncope or syncope. Low probability of cardiovascular etiology based on history, physical examination, and ECG findings. Initial imaging.

| | | | | | | | | | | | | | | | |
|--------------------------------------|-------------------------|---------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| CT head without and with IV contrast | Usually not appropriate | Limited | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 1 | 1 | 13 | 5 | 2 | 0 | 0 | 1 | 1 | 0 | 0 |
|--------------------------------------|-------------------------|---------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|

| References | Study Quality |
|---------------|---------------|
| 15 (25763568) | 1 |
| 19 (25539233) | 3 |
| 18 (17551685) | 3 |
| 17 (17111790) | 4 |
| 16 (16292675) | 4 |

| | | | | | | | | | | | | | | | |
|---|-------------------------|------------------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|
| MRI heart function and morphology without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 13 | 4 | 4 | 1 | 0 | 0 | 0 | 0 | 0 |
|---|-------------------------|------------------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|

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|--|-------------------------|------------------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|
| MRI heart function and morphology without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 |
|--|-------------------------|------------------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|

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|------------------------------|-------------------------|------------------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|
| MRI head without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 5 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
|------------------------------|-------------------------|------------------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|
| MRI head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 4 | 2 | 0 | 0 | 1 | 0 | 0 | 1 |
|---------------------------------------|-------------------------|------------------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | |
|----------------------------------|-------------------------|---------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|
| US duplex Doppler carotid artery | Usually not appropriate | Limited | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|----------------------------------|-------------------------|---------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|

| References | Study Quality |
|---------------|---------------|
| 66 (25669837) | 3 |
| 64 (25122665) | 4 |
| 20 (19636031) | 4 |
| 65 (15819284) | 3 |

| | | | | | | | | | | | | | | | |
|---|-------------------------|----------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|
| US echocardiography transthoracic resting | Usually not appropriate | Moderate | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
|---|-------------------------|----------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|

| References | Study Quality |
|---------------|---------------|
| 72 (29073313) | 4 |
| 66 (25669837) | 3 |
| 69 (26881172) | 3 |
| 73 (30255862) | 2 |

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|--|-------------------------|------------------|----------------|-----------------------|---|---|----|---|---|---|---|---|---|---|---|--|
| US echocardiography transthoracic stress | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | |
| US echocardiography transesophageal | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 16 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |
| SPECT or SPECT/CT MPI stress only | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | | 1 | 1 | 15 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | |
| SPECT or SPECT/CT MPI rest and stress | Usually not appropriate | Limited | ⊗⊗⊗⊗ 10-30 mSv | ⊗⊗⊗⊗⊗ 10-30 mSv [ped] | 1 | 1 | 15 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | |
| | | References | | Study Quality | | | | | | | | | | | | |
| | | 63 (23418293) | | 3 | | | | | | | | | | | | |
| SPECT or SPECT/CT MPI rest only | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | | 1 | 1 | 16 | 4 | 2 | 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.