American College of Radiology  
ACR Appropriateness Criteria®  

Suspected New-Onset and Known Nonacute Heart Failure  

Variant 1: Suspected new-onset nonacute heart failure, not previously diagnosed. Initial imaging.  

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<th>SOE</th>
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|--------------|---------------|------------|-------------|----------------|--------|--------|-----------------|
| Good         |               |            |             |                |        |        |                 |
| Procedure                                                      | Usually appropriate | Strong | ☢ <0.1 mSv | ☢ <0.03 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 4 | 5 |
|---------------------------------------------------------------|---------------------|--------|------------|-----------------|----|----|----|----|----|----|----|----|----|----|
| Radiography chest                                             | Strong              | ☢ <0.1 mSv | ☢ <0.03 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 4 | 5 |
| CTA coronary arteries with IV contrast                        | May be appropriate (Disagreement) | Expert Opinion | ☢☢☢ 1-10 mSv | 5 | 3 | 0 | 3 | 6 | 3 | 0 | 2 | 1 | 0 | 0 |
| MRI heart function and morphology without and with IV contrast | May be appropriate (Disagreement) | Expert Opinion | ☢ 0 mSv | ☢ 0 mSv [ped] | 5 | 3 | 1 | 2 | 6 | 2 | 0 | 3 | 0 | 1 | 0 |
| MRI heart function and morphology without IV contrast         | Usually not appropriate | Limited | ☢ 0 mSv | ☢ 0 mSv [ped] | 3 | 3 | 1 | 3 | 7 | 2 | 2 | 0 | 0 | 0 | 0 |
| Nuclear medicine ventriculography                             | Usually not appropriate | Strong | ☢☢☢ 1-10 mSv | 3 | 3 | 5 | 2 | 4 | 2 | 2 | 0 | 0 | 0 | 0 |
| US echocardiography transthoracic stress                      | Usually not appropriate | Moderate | ☢ 0 mSv | ☢ 0 mSv [ped] | 3 | 3 | 3 | 2 | 6 | 2 | 2 | 0 | 0 | 0 | 0 |

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Note: The table above provides a summary of the appropriate use of various diagnostic imaging procedures, including the radiation doses associated with each. The radiation doses are expressed in milliSieverts (mSv), with values indicating the risk to patients and the study quality assessed based on the referenced studies.
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Variant 2: Differentiating new-onset heart failure with reduced ejection fraction (HFrEF) from new-onset heart failure with preserved ejection fraction (HFpEF).
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    - 0 mSv
    - 0 mSv [ped]
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    - 8
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    - 0
    - 0
    - 0
    - 2
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    - 5
    - 6
    - 2

- **MRI heart function and morphology without IV contrast**
  - **Usually appropriate**
    - Limited
    - 0 mSv
    - 0 mSv [ped]
    - 7
    - 7
    - 0
    - 0
    - 1
    - 0
    - 4
    - 3
    - 3
    - 4
    - 1

- **Nuclear medicine ventriculography**
  - **May be appropriate**
    - Limited
    - 1-10 mSv
    - 5
    - 5
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| MRI heart with function and vasodilator stress perfusion without and with IV contrast | Usually not appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 3 | 3 | 3 | 2 | 5 | 2 | 3 | 0 | 0 | 0 | 0 |
|--------------------------------------------------------------------------------------------|--------------------------|---------|---------|---------------|---|---|---|---|---|---|---|---|---|---|
| References | Study Quality | 85 (26005800) | 2 |

| MRI heart with function and inotropic stress without IV contrast | Usually not appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 3 | 3 | 4 | 1 | 6 | 4 | 0 | 0 | 0 | 0 | 0 |
|--------------------------------------------------------------------------------------------|--------------------------|---------|---------|---------------|---|---|---|---|---|---|---|---|---|---|
| References | Study Quality | 85 (26005800) | 2 |

| MRI heart with function and inotropic stress without and with IV contrast | Usually not appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 3 | 3 | 4 | 1 | 6 | 4 | 0 | 0 | 0 | 0 | 0 |
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Variant 3: Confirmed new-onset heart failure with reduced ejection fraction of uncertain etiology: ischemic versus nonischemic.
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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).