

Suspected New-Onset and Known Nonacute Heart Failure

Heart failure occurs when the heart is unable to pump enough blood. Nonacute heart failure means that the heart has gradually become weaker over time.

For people who are thought to have nonacute heart failure, a transthoracic echocardiogram resting (test using sound waves to create an image of your heart) or chest x-ray (<https://www.radiologyinfo.org/en/info/chestrand>) is usually appropriate.

To determine whether the heart failure is because the heart is too weak to pump (reduced ejection fraction) or because the heart is too stiff to fill with blood (preserved ejection fraction), a transthoracic echocardiogram is usually appropriate. Heart MRI (<https://www.radiologyinfo.org/en/info/cardiacmr>) without and with contrast (dye injected into your blood) or heart MRI without contrast is also usually appropriate. The following tests may be appropriate: nuclear ventriculography (injected radioactive dye tracks blood flow through your heart), coronary arteriography (<https://www.radiologyinfo.org/en/info/angiocorct>) (x-ray of the heart arteries), or a CT scan of the arteries (CTA) (<https://www.radiologyinfo.org/en/info/angioct>) using contrast.

To determine whether heart failure is ischemic (damaged from poor blood flow) or nonischemic (not due to poor blood flow), CTA using contrast is usually appropriate. Also usually appropriate are heart MRI without and with contrast, heart vasodilator stress MRI without and with contrast, single-photon emission computed tomography (<https://www.radiologyinfo.org/en/info/pet>) (SPECT) or SPECT/CT rest and stress (test using a treadmill or medications to put the heart under stress while creating a 3-D picture of heart), coronary arteriography, heart PET/CT, and transthoracic echocardiogram stress. Heart inotropic (using medication) stress MRI without and with contrast, heart inotropic stress MRI without contrast, and heart MRI without contrast may be appropriate.

— By Sandra V. Kotsis, MPH and Kemi Babagbemi, MD. This information originally appeared in the *Journal of the American College of Radiology*.

Disclaimer

This information is copied from the RadiologyInfo Web site (<http://www.radiologyinfo.org>) which is dedicated to providing the highest quality information. To ensure that, each section is reviewed by a physician with expertise in the area presented. All information contained in the Web site is further reviewed by an ACR (American College of Radiology) - RSNA (Radiological Society of North America) committee, comprising physicians with expertise in several radiologic areas.

However, it is not possible to assure that this Web site contains complete, up-to-date information on any particular subject. Therefore, ACR and RSNA make no representations or warranties about the suitability of this information for use for any particular purpose. All information is provided "as is" without express or implied warranty.

Please visit the RadiologyInfo Web site at <http://www.radiologyinfo.org> to view or download the latest information.

Note: Images may be shown for illustrative purposes. Do not attempt to draw conclusions or make diagnoses by comparing these images to other medical images, particularly your own. Only qualified physicians should interpret images; the radiologist is the physician expert trained in medical imaging.

Copyright

This material is copyrighted by either the Radiological Society of North America (RSNA), 820 Jorie Boulevard, Oak Brook, IL 60523-2251 or the American College of Radiology (ACR), 1891 Preston White Drive, Reston, VA 20191-4397. Commercial reproduction or multiple distribution by any traditional or electronically based reproduction/publication method is prohibited.

Copyright © 2026 Radiological Society of North America, Inc.