Chronic Chest Pain — High Probability of Coronary Artery Disease

Coronary artery disease (CAD) is a buildup of plaque in the arteries supplying the heart that can reduce or block blood flow. Poor blood flow to the heart can cause chest pain (angina (https://www.radiologyinfo.org/en/info/anginapectoris)) and a condition called ischemic heart disease (IHD). This can be acute (sudden heart attack) or chronic. Imaging tests (https://www.radiologyinfo.org/en/info/screening-cardiac) help diagnose CAD or IHD and help determine the best treatment options. These tests are sometimes done using a treadmill or medications to put the heart under stress.

For those with chronic chest pain, high risk for CAD, and no known IHD, initial imaging tests that are usually appropriate include stress transthoracic echocardiography (ultrasound with the heart under stress), coronary arteriography (dye injected into the arteries), CT angiography (https://www.radiologyinfo.org/en/info/angioct) of the coronary arteries with intravenous (IV) contrast, MRI (https://www.radiologyinfo.org/en/info/cardiacmr) to measure heart function under stress without and with IV contrast, MRI to measure heart function under stress without IV contrast, rubidium-82 PET/CT (https://www.radiologyinfo.org/en/info/pet) heart (which uses a radioactive element), and single-photon emission CT or single-photon emission CT/CT myocardial perfusion imaging (using a radioactive element to show blood flow through the heart) at rest and during stress. Other tests that may be appropriate include transthoracic echocardiography at rest, CT coronary calcium imaging (https://www.radiologyinfo.org/en/info/ct_calscoring) , and MRI to measure heart function and morphology without and with IV contrast.

For individuals with chronic chest pain, high risk for CAD, and known but untreated IHD, usually appropriate initial imaging tests include those previously discussed and also MRI to measure heart function and morphology without and with IV contrast. CT to measure heart function and morphology with IV contrast and MRI to measure heart function and morphology without IV contrast may also be appropriate.

For more information, see the Cardiac (Heart) Screening (https://www.radiologyinfo.org/en/info/screening-cardiac) page.

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