

Myocardial Perfusion, SPECT includes Wall Motion and Ejection Fraction

CPT: 78451, 78452

NOTE:

These codes replace 78464 & 78465 respectively and now include 78478 78480

NOTE:

78453 MYOCARDIAL PERFUSION IMAGING, PLANAR; SINGLE STUDY, and 78454 MYOCARDIAL PERFUSION IMAGING, PLANAR MULTIPLE STUDIES are essentially obsolete and should be referred for physician review.

1 Assessment prior to non-cardiac surgery

1.1 Any High Risk procedure

1.1.1 High Risk Surgeries include emergent operations, especially in the elderly, major vascular surgeries, and potentially prolonged surgical procedures associated with large fluid shifts and/or blood loss

1.2 Intermediate Risk AND ONE

1.2.1 Intermediate Risk Surgeries include Carotid endarterectomies, head and neck surgery, intraperitoneal and intrathoracic surgery, orthopedic surgery, prostate surgery.

1.2.2 Arrhythmia

1.2.2 Arrhythmia

1.2.3 Diabetes

1.2.4 Framingham risk percentage is >10%

1.2.5 History of CHF

1.2.6 History of CVA

1.2.7 Mitral or other valvular disease

2 Assessment within eight weeks after treatment of a cardiac condition

2.1 Atrial Fibrillation

2.2 Congestive Heart Failure ONE

2.2.1 New onset

2.2.2 Recurrent

2.3 Diabetes

2.4 Framingham Risk >10%

2.5 Ischemia at time of prior treatment (MI, unstable angina, chest pain syndrome)

2.5.1 Condition not remedied

2.6 Syncope or Near Syncope

3 Known Coronary Artery Disease

3.1 Changed chest pain

3.2 CHF – annual exam

3.3 Stable or asymptomatic – allowed every two years

4 No prior Coronary Artery Disease diagnosis

4.1 Abnormal stress test

4.2 Diabetes

4.3 Framingham risk percentage >10%

4.3.1 There is an online Framingham Risk Calculator at <http://www.intmed.mcw.edu/clincalc/heartrisk.html>

4.4 Patient on Digoxin or similar medication

4.5 Patient unable to perform stress test

4.6 Uninterpretable EKG

4.7 Ventricular tachycardia

5 Chest pain syndrome or Ischemic equivalent (including new EKG changes suggesting ischemia.) Chest pain syndrome includes ANY OF THE FOLLOWING pain, tightness, or burning sensation in chest, dyspnea, shoulder pain, and jaw pain.

5.1 Low pretest probability of CAD AND ECG uninterpretable OR unable to exercise

5.2 Intermediate pretest probability of CAD

5.2.1 ECG interpretable AND able to exercise

5.2.2 ECG uninterpretable OR unable to exercise

5.3 High pretest probability of CAD regardless of ECG interpretability and ability to exercise

5.4 Pretest Probability by Symptom, Sex and Age

Age	Sex	Typical Angina	Atypical Angina	Non Anginal Pain	Asymptomatic
≤60	Male	High	Intermediate	Intermediate	Low
>60	Female	High	Intermediate	Intermediate	Low

6 Symptomatic Acute Chest Pain Possible ACS

6.1 ECG—no ischemic changes or with LBBB or electronically ventricular paced rhythm

6.1.1 Ask for or Calculate TIMI score

6.1.1.1 Low-risk TIMI score AND Peak troponin: borderline, equivocal, minimally elevated

6.1.1.2 Low-risk TIMI score AND Negative peak troponin levels

6.1.1.3 High-risk TIMI score AND Peak troponin: borderline, equivocal, minimally elevated

6.1.1.4 High-risk TIMI score AND Negative peak troponin levels

6.1.1.5 Recent or current chest pain AND Initial troponin negative

7 Risk Assessment

7.1 Without Ischemic equivalent (including new EKG changes suggesting ischemia)

7.1.1 Asymptomatic with High CHD risk (ATP III risk criteria)

7.1.1.1 Arrhythmia

7.1.1.2 Diabetes

7.1.1.3 Framingham risk percentage is >10%

7.1.1.4 History of CHF

7.1.1.5 History of CVA

7.1.1.6 Mitral or other valvular disease

7.1.2 Ventricular Tachycardia

7.1.3 Syncope

7.1.3.1 Intermediate or high CHD risk (ATP III risk criteria)

7.1.4 Elevated Troponin Troponin elevation without additional evidence of acute coronary syndrome

7.2 After Prior Testing

7.2.1 Known Chronic Stable CAD and

7.2.1.1 Coronary Calcium Agatston Score greater than 100, or

7.2.1.2 Equivocal, Borderline, or Discordant testing, or

7.2.1.3 Duke Treadmill Score High or Intermediate

7.2.2 Equivocal, Borderline, or Discordant Noninvasive stress testing AND CAD remains a concern

7.2.3 Abnormal coronary angiography and New or Worsening Symptoms

7.2.4 Abnormal prior stress imaging study and New or Worsening Symptoms

7.2.5 Coronary Angiography (Invasive or Noninvasive) Results showing Coronary stenosis or anatomic abnormality of uncertain significance

7.2.6 Coronary Calcium Agatston Score greater than 100 and [BOTH]

7.2.6.1 Asymptomatic

7.2.6.2 High CHD risk

7.2.7 Duke Treadmill Score High or Intermediate

7.3 Preoperative Evaluation for Intermediate-Risk Noncardiac Surgery Without Active Cardiac Conditions

7.3.1 Greater than or equal to 1 clinical risk factor OR

7.3.2 Poor or unknown functional capacity (less than 4 METS)

7.4 Preoperative Evaluation for Vascular Noncardiac Surgery Without Active Cardiac Conditions

7.4.1 Greater than or equal to 1 clinical risk factor OR

7.4.2 Poor or unknown functional capacity (less than 4 METS)

7.5 Within 3 Months of an ACS ST-elevation myocardial infarction or unstable angina (UA) and non-ST-elevation myocardial infarction [ALL Three]

7.5.1 Hemodynamically stable, no recurrent chest pain symptoms or no signs of HF

7.5.2 To evaluate for inducible ischemia

7.5.3 No prior coronary angiography

7.6 Postrevascularization (PCI or CABG) [ANY]

7.6.1 Evaluation of ischemic equivalent

7.6.2 Incomplete revascularization

7.6.3 Additional revascularization feasible

7.6.4 Greater than or equal to 5 years after CABG A (7)

8 Ischemic Cardiomyopathy/Assessment of Viability

8.1 Known severe LV dysfunction

8.2 Patient eligible for revascularization

9 Evaluation of Ventricular Function

9.1 No recent reliable diagnostic information regarding ventricular function obtained with another imaging modality, including other nuclear studies or echocardiography.

10 Evaluation of Ventricular Function during Use of Potentially Cardiotoxic Therapy (e.g., Doxorubicin)

10.1 Serial assessment of LV function with radionuclide angiogram (ERNA or FP RNA)

References

1. American College of Radiology. ACR Appropriateness Criteria®. Acute Nonspecific Chest Pain-Low Probability of Coronary Artery Disease; Chest Pain-Possible Acute Coronary Syndrome; Chronic chest pain; high probability of coronary artery disease; Chronic chest pain, noncardiac etiology unlikely: low to intermediate probability of coronary artery disease. Initial imaging. Available at <https://acsearch.acr.org/list> .Accessed 11/2/2020.
2. Brindis RG, Douglas PS, Hendel RC, et al, ACCF/ASNC appropriateness criteria for single-photon emission computed tomography myocardial perfusion imaging (SPECT MPI): a report of the American College of Cardiology Foundation Quality Strategic Directions Committee Appropriateness Criteria Working Group and the American Society of Nuclear Cardiology. J Am Coll Cardiol 2005; 46:1587- 1605 Fleisher LA, Beckman JA, Brown KA, et al, ACC/AHA 2007 guidelines on perioperative cardiovascular evaluation and care for non cardiac surgery: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines, J Am Coll cardiol, 2007; 50:159-241.