Evolent Clinical Guideline 7265 for Cardiovascular Stress Test

Guideline Number: Evolent_CG_7265	Applicable Codes	
"Evolent" refers to Evolent Health LLC and Evolent Specialty Services, Inc. 		
Original Date: **July 2011**	**Last Revised Date:** **July 2025**	**Implementation Date:** **January 2026**

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STATEMENT

General Information

- ***It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.***
- ***Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.***
- ***The guideline criteria in the following sections were developed utilizing evidence-based and peer-reviewed resources from medical publications and societal organization guidelines as well as from widely accepted standard of care, best practice recommendations.***

Purpose

Indications for determining medical necessity for Cardiovascular Stress Test (walking exercise treadmill ECG test).

Clinical Reasoning

All criteria are substantiated by the latest evidence-based medical literature. To enhance transparency and reference, Appropriate Use (AUC) scores, when available, are diligently listed alongside the criteria.

This guideline first defaults to AUC scores established by published, evidence-based guidance endorsed by professional medical organizations. In the absence of those scores, we adhere to a standardized practice of assigning an AUC score of 6. This score is determined by considering variables that ensure the delivery of patient-centered care in line with current guidelines, with a focus on achieving benefits that outweigh associated risks. This approach aims to maintain a robust foundation for decision-making and underscores our commitment to upholding the highest standards of care. [1–5]

INDICATIONS FOR CARDIOVASCULAR STRESS TEST

Known or Suspected Coronary Artery Disease (CAD) [6]

- **Symptoms suggesting myocardial ischemia**
  - **When a non-cardiac explanation is provided for symptoms, no testing is required (AUC Score 8) [6]**

- Asymptomatic patient
  - Prior to initiation of an unsupervised exercise program, with or without known CAD (AUC Score 7) [6]
  - Prior to cardiac rehabilitation (AUC Score 7) [6]
- Syncope/presyncope
  - When initial evaluation suggests cardiovascular abnormalities (AUC Score 7) [6]
- Arrhythmias
  - In patients with frequent PVCs (premature ventricular contraction) or non-sustained ventricular tachycardia (AUC Score 7) [6]
  - Evaluation of patients with known or suspected exercise-induced arrhythmias [7]
  - Evaluation of patients with suspected chronotropic incompetence [8]
  - In patients with suspected long QT syndrome for diagnosis and therapy response [9]
  - In selected first-degree relatives of patients with arrhythmogenic right ventricular cardiomyopathy [9]
  - In first-degree relatives of subjects ≤ 40 years old who died suddenly and whose death could reasonably be attributed to unexplained sudden cardiac death (SCD), for comprehensive cardiac evaluation (including exercise stress testing) [9]
  - Identification of appropriate settings in patients with rate-adaptive pacemakers [7]
  - Evaluation of congenital complete heart block in patients considering increased physical activity or participation in competitive sports [7]
- Hypertrophic Cardiomyopathy (HCM) [10]
  - To determine functional capacity and to provide prognostic information as part of initial evaluation
- Valvular Disease
  - Aortic stenosis in asymptomatic patients with severe aortic stenosis (Stage C1) to assess physiological changes with exercise and to confirm the absence of symptoms [11]
  - Chronic aortic regurgitation [7,11]:
    - with equivocal symptoms, to assess functional capacity and symptoms
    - to assess symptoms and functional capacity prior to participation in athletic activity
    - prognostic assessment before aortic valve replacement in asymptomatic or minimally symptomatic patients with left ventricular dysfunction

- In asymptomatic women with severe valve disease (Stage C1) considering pregnancy [11]

- Coarctation of the Aorta [12]
  - In adults, for exercise-induced hypertension
- Prior to Elective Non-Cardiac Surgery in asymptomatic patient [13–15]
  - An intermediate- or high-risk surgery with one or more patient risk factors (see below), AND there has not been an ischemia evaluation within 1 year
    - Patient risk factors: history of ischemic heart disease, history of congestive heart failure, history of cerebrovascular disease, preoperative treatment with insulin, and preoperative serum creatinine > 2.0 mg/dL
    - Surgical Risk:
      - High risk surgery: Aortic and other major vascular surgery, peripheral vascular surgery, anticipated prolonged surgical procedures associated with large fluid shifts and/or blood loss
      - Intermediate risk surgery: Carotid endarterectomy, head and neck surgery, intraperitoneal and intrathoracic surgery, orthopedic surgery, prostate surgery
      - Low risk surgery: Endoscopic procedures, superficial procedure, cataract surgery, breast surgery

LIMITATIONS FOR CARDIOVASCULAR STRESS TEST

- Abnormal ST changes on resting ECG, digoxin, left bundle branch block, Wolff-Parkinson-White pattern, ventricular paced rhythm (unless test is performed to establish exercise capacity and not for diagnosis of ischemia) [16]
- Unable to achieve ≥ 5 METs or unsafe to exercise [16]
- High-risk unstable angina or acute myocardial infarction, active acute coronary syndrome [16]
- Uncontrolled heart failure [16]
- Significant cardiac arrhythmias such as ventricular tachycardia, complete atrioventricular block or high risk for arrhythmias caused by QT prolongation [16]
- Severe symptomatic aortic stenosis [16]
- Severe systemic arterial hypertension (e.g., ≥ 200/110 mmHg) [16]
- Acute illness such as acute pulmonary embolism, acute myocarditis/pericarditis, and acute aortic dissection [16]
- Routine periodic stress testing is not recommended in patients with chronic coronary artery disease (CCD) without clinical or functional status changes [17]

CODING AND STANDARDS

Codes

93015, 93016, 93017, 93018

Applicable Lines of Business

☒	**CHIP (Children's Health Insurance Program)**
☒	**Commercial**
☒	**Exchange/Marketplace**
☒	**Medicaid**
☒	**Medicare Advantage**

BACKGROUND

Cardiovascular stress test is a test used to measure cardiovascular response to external stress through treadmill/bicycle exercise in a controlled clinical environment.

Cardiovascular stress tests compare the coronary circulation while the patient is at rest with the same patient's circulation observed during maximum physical exertion, showing any abnormal blood flow to the myocardium as depicted by the continuously monitored EKG/ECG. The results can also be interpreted as a reflection on the general physical condition of the test patient (blood pressure response and exercise tolerance).

Definitions

- **Duke Exercise ECG Treadmill Score - Calculate risk from ECG Treadmill Score [18]**
  - **The equation for calculating the Duke treadmill score (DTS) is: DTS = exercise time in minutes - (5 x ST deviation in mm or 0.1 mV increments) - (4 x exercise angina score), with angina score being 0 = none, 1 = non-limiting, and 2 = exercise-limiting.**
  - **The score typically ranges from - 25 to + 15. These values correspond to low-risk (with a score of ≥ + 5), intermediate risk (with scores ranging from - 10 to + 4), and high-risk (with a score of ≤ -11) categories.**
- **Global Risk of Cardiovascular Disease**
  - **Global risk of CAD is defined as the probability of manifesting cardiovascular disease over the next 10 years and refers to asymptomatic patients without known cardiovascular disease. It should be determined using one of the risk calculators below. A high risk is considered greater than a 20% risk of a**

cardiovascular event over the ensuing 10 years. High global risk by itself generally lacks scientific support as an indication for stress imaging. There are rare exemptions, such as patients requiring IC antiarrhythmic drugs, who might require coronary risk stratification prior to initiation of the drug.

- CAD Risk—Low
  - 10-year absolute coronary or cardiovascular risk less than 10%.
- CAD Risk—Moderate
  - 10-year absolute coronary or cardiovascular risk between 10% and 20%.
- CAD Risk—High
  - 10-year absolute coronary or cardiovascular risk of greater than 20%.

Websites for Global Cardiovascular Risk Calculators* [19–23]

Risk Calculator	Link to Online Calculator
Framingham Cardiovascular Risk	https://reference.medscape.com/calculator/framingham-cardiovascular-disease-risk
Reynolds Risk Score Can use if no diabetes Unique for use of family history	http://www.reynoldsriskscore.org/
Pooled Cohort Equation	http://clincalc.com/Cardiology/ASCVD/PooledCohort.aspx?example
ACC/AHA Risk Calculator	http://tools.acc.org/ASCVD-Risk-Estimator/
MESA Risk Calculator With addition of Coronary Artery Calcium Score, for CAD-only risk	https://www.mesa-nhlbi.org/MESACHDRisk/MesaRiskScore/RiskScore.aspx

*Patients who have known CAD are already at high global risk and are not applicable to the calculators

AUC Score

A reasonable diagnostic or therapeutic procedure can be defined as that for which the expected clinical benefits outweigh the associated risks, enhancing patient care and health outcomes in a cost-effective manner. [3]

- **Appropriate Care- Median Score 7-9**
- **May be Appropriate Care- Median Score 4-6**
- **Rarely Appropriate Care- Median Score 1-3**

Guideline-Directed Medical Therapy

Guideline directed medical therapy (GDMT) are outlined by joint American College of Cardiology (ACC)/American Heart Association (AHA) in cardiovascular clinical practice guidelines as Class I recommendation. These are maximally tolerated medications for a cardiovascular condition, when prescribed, have shown to improve healthcare outcomes such as survival along with significant reduction in major adverse cardiovascular events and hospitalization. For all recommended drug treatment regimens, the prescriber should confirm the dosage with product insert material and carefully evaluate for contraindications and interactions.

Acronyms/Abbreviations

CAD: Coronary artery disease

DTS: Duke treadmill score

EKG/ECG: Electrocardiogram

GDMT: Guideline directed medical therapy

HCM: Hypertrophic cardiomyopathy

MET: Metabolic equivalent

PVC: Premature ventricular contraction

SCD: Sudden cardiac death

SUMMARY OF EVIDENCE

ACC/AHA/ASE/ASNC/ASPC/HFSA/HRS/SCAI/SCCT/SCMR/STS 2023 Multimodality Appropriate Use Criteria for the Detection and Risk Assessment of Chronic Coronary Disease [6]

Study Design: The study is a report by the American College of Cardiology (ACC) Solution Set Oversight Committee, in collaboration with several other cardiovascular societies. It updates the prior AUC for various cardiovascular imaging modalities, including radionuclide imaging, stress echocardiography, calcium scoring, coronary computed tomography angiography (CCTA), stress cardiac magnetic resonance (CMR), and invasive coronary angiography.

Target Population: The target population includes patients with known or suspected CCD, which encompasses stable ischemic heart disease (SIHD). The clinical scenarios cover both symptomatic and asymptomatic patients, with and without prior testing or revascularization.

Key Factors: The document outlines 64 clinical scenarios for the detection and risk assessment of CCD, drawn from common applications and current clinical practice guidelines. The clinical scenarios were rated by an independent panel using a modified Delphi process. Ratings were categorized as Appropriate (7-9), May Be Appropriate (4-6), or Rarely Appropriate (1-3).

2017 AHA/ACC/HRS Guideline for Management of Patients With Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death [9]

Study Design: The guideline is based on a systematic review of evidence from various sources, including randomized controlled trials (RCTs), registries, nonrandomized comparative and descriptive studies, case series, cohort studies, systematic reviews, and expert opinion. The writing committee used evidence-based methodologies to formulate recommendations, focusing on the quality of scientific evidence and the magnitude and certainty of benefit in proportion to risk.

Target Population: The guideline is intended for adults who have ventricular arrhythmias (VA) or are at risk for sudden cardiac death (SCD), including those with diseases and syndromes associated with a risk of SCD from VA. It covers a wide range of conditions, including ischemic heart disease, nonischemic cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy, hypertrophic cardiomyopathy, myocarditis, cardiac sarcoidosis, neuromuscular disorders, and cardiac channelopathies.

Key Factors: Indications for ICD Implantation, secondary prevention for patients who survive sudden cardiac arrest (SCA) due to VA or experience hemodynamically unstable VT. Primary prevention for patients with reduced left ventricular ejection fraction (LVEF) due to ischemic or nonischemic cardiomyopathy. Management of VA in specific populations such as athletes, pregnant women, older patients with comorbidities, and patients with chronic kidney disease.

2024 AHA/ACC/AMSSM/HRS/PACES/SCMR Guideline for the Management of Hypertrophic Cardiomyopathy [10]

Study Design: This document is a guideline developed by the American Heart Association/American College of Cardiology Joint Committee on Clinical Practice Guidelines, in collaboration with several other medical societies. It includes recommendations based on a comprehensive literature search and evidence review.

Target Population: The guidelines focus on patients with hypertrophic cardiomyopathy, including adults, children, and adolescents. It addresses the diagnosis, risk assessment, and management of HCM, including the use of ICDs for SCD prevention.

Key Factors: The document highlights the importance of SCD risk assessment in HCM patients, including factors such as family history of SCD, maximal LV wall thickness, unexplained syncope, LV apical aneurysm, extensive LGE, and NSVT episodes.

Recommendations for ICD placement in high-risk HCM patients consider individual clinical judgment, shared decision-making, and the presence of major risk factors. The guidelines discuss the selection of ICD devices, including single-chamber, dual-chamber, and subcutaneous ICDs, based on patient preferences and clinical needs. The document provides recommendations for the pharmacological and invasive treatment of symptomatic HCM patients, including the use of beta blockers, calcium channel blockers, myosin inhibitors, and septal reduction therapies.

ANALYSIS OF EVIDENCE

Analysis [6,9,10]:

While all three articles emphasize the importance of cardiovascular stress testing in diagnosing and managing cardiac conditions, they differ in their specific guidelines, patient populations, and clinical scenarios. The articles highlight the diverse applications of stress testing in cardiology and the need for tailored guidelines based on specific clinical contexts.

Shared Conclusions:

- **All three articles emphasize the significance of cardiovascular stress testing in diagnosing and managing various cardiac conditions. Stress testing is highlighted as a crucial tool for assessing myocardial ischemia, ventricular arrhythmias, and hypertrophic cardiomyopathy (HCM).**
- **The articles discuss various types of stress tests, including exercise treadmill testing, stress echocardiography, and stress cardiac magnetic resonance (CMR). These tests are used to evaluate different aspects of cardiac function and identify potential issues.**
- **Cardiovascular stress testing is commonly used for risk stratification in patients with known or suspected cardiac conditions. The tests help determine the severity of the condition and guide treatment decisions.**

POLICY HISTORY

Date	Summary
July 2025	• No substantial clinical criteria changes • Added in general information statement regarding guideline criteria development by reputable sources, standard of care, and best practices • Added a Summary of Evidence and Analysis of Evidence • Updated references

December 2024	• **This guideline replaces UM CARDIO_1114 Cardiovascular Stress Test** • **Updated clinical indication, limitation and background sections** • **Removed Special Note section**

LEGAL AND COMPLIANCE

Guideline Approval

Committee

Reviewed / Approved by Evolent Specialty Services Clinical Guideline Review Committee

Disclaimer

Evolent Clinical Guidelines do not constitute medical advice. Treating health care professionals are solely responsible for diagnosis, treatment, and medical advice. Evolent uses Clinical Guidelines in accordance with its contractual obligations to provide utilization management. Coverage for services varies for individual members according to the terms of their health care coverage or government program. Individual members' health care coverage may not utilize some Evolent Clinical Guidelines. Evolent clinical guidelines contain guidance that requires prior authorization and service limitations. A list of procedure codes, services or drugs may not be all inclusive and does not imply that a service or drug is a covered or non-covered service or drug. Evolent reserves the right to review and update this Clinical Guideline in its sole discretion. Notice of any changes shall be provided as required by applicable provider agreements and laws or regulations. Members should contact their Plan customer service representative for specific coverage information.

Evolent Clinical Guidelines are comprehensive and inclusive of various procedural applications for each service type. Our guidelines may be used to supplement Medicare criteria when such criteria is not fully established. When Medicare criteria is determined to not be fully established, we only reference the relevant portion of the corresponding Evolent Clinical Guideline that is applicable to the specific service or item requested in order to determine medical necessity.

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