

Subject: Resting Electrocardiogram Screening in Adults**Guideline #:** CG-MED-62**Status:** Reviewed**Publish Date:** 09/27/2023**Last Review Date:** 08/10/2023

Description

This document addresses the performance of resting electrocardiogram (ECG, EKG) in the screening of asymptomatic adults with no known heart disease. This document does not address the use of ECG for preoperative screening.

Note: Please see the following related document for additional information:

- [CG-MED-61 Preoperative Testing for Low Risk Invasive Procedures and Surgeries](#)

Clinical Indications

Not Medically Necessary:

Resting electrocardiogram testing in adults (greater than or equal to 18 years of age) is considered **not medically necessary**, when both of the following are present:

1. There are no known signs or symptoms of heart disease and there is no family history of sudden cardiac death **and**
2. The individual is at low risk for coronary heart disease event, where low risk is defined as a 10-year risk less than 10%.

Coding

The following codes for treatments and procedures applicable to this guideline are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services are Not Medically Necessary:

When the code describes a procedure designated in the Clinical Indications section as not medically necessary.

CPT

93000	Electrocardiogram, routine ECG with at least 12 leads; with interpretation and report
93005	Electrocardiogram, routine ECG with at least 12 leads; tracing only, without interpretation and report
93010	Electrocardiogram, routine ECG with at least 12 leads; interpretation and report only

HCPCS

G0403	Electrocardiogram, routine ECG with 12 leads; performed as a screening for the initial preventive physical examination with interpretation and report
G0404	Electrocardiogram, routine ECG with 12 leads; tracing only, without interpretation and report, performed as a screening for the initial preventive physical examination
G0405	Electrocardiogram, routine ECG with 12 leads; interpretation and report only, performed as a screening for the initial preventive physical examination

ICD-10 Diagnosis

Z00.00	Including, but not limited to, the following diagnosis: Encounter for general adult medical examination without abnormal findings
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Discussion/General Information

Resting ECG is a noninvasive test used to detect and record the heart's electrical activity, rate, and regularity of heart as well as the strength and timing of the electrical impulses passing through each part of the heart. Resting ECG screening may be used to further evaluate symptoms related to heart disease.

According to the Centers for Disease Control and Prevention coronary heart disease (CHD), also known as coronary artery disease (CAD), is the most common heart disease reported, with an associated annual mortality of over 360,900 individuals in the U.S. in 2021. Smoking, high blood pressure, and high cholesterol are key risk factors for heart disease. Other medical conditions and lifestyle choices contribute to heart disease including diabetes, obesity, poor diet, physical inactivity and alcohol abuse (CDC, 2023).

In 2010, the American College of Cardiology Foundation and the American Heart Association (ACC/AHA) guideline for assessment of cardiovascular risk in asymptomatic adults issued a category IIb recommendation, indicating a "weak benefit > risk" ratio, for use of resting ECG in cardiovascular risk assessment in asymptomatic adults without hypertension or diabetes. (Greenland, 2010).

The American Academy of Family Physicians (AAFP) summary of recommendations for clinical preventive services recommend against use of routine resting ECG in asymptomatic adults at low risk for CHD and found insufficient evidence for adults at increased risk for CHD events (AAFP, 2014).

The U.S. Preventive Services Task Force (USPSTF) recommends against screening with resting or exercise ECG for predication of CHD events in asymptomatic adults at low risk for CHD events. Several risk calculators are available to make a reasonable determination of the 10-year likelihood of a coronary heart disease-related event; one of the best known models is from the Framingham Adult Treatment Panel III (Framingham tool located on the National Institute of Health website, see hyperlink below). Individuals with less than a 10% likelihood of a coronary event in the next 10 years are considered to be at low risk. The USPSTF has rated the current medical evidence insufficient to assess the balance of benefits and harms of screening with resting or exercise ECG for the prediction of CHD events in asymptomatic adults at intermediate or high risk. This recommendation is based on "inadequate

evidence that adding ECG to conventional risk factor assessment leads to improved stratification of individuals into high, intermediate, or low-risk groups to guide risk management." (Moyer, 2012). In 2018, the USPSTF updated the 2012 USPSTF recommendations on screening for CHD; the panel recommends against use of screening with resting or exercise ECG to prevent cardiovascular disease (CVD) events in asymptomatic adults at low risk of CVD events. "The USPSTF concluded that the current evidence is insufficient to assess the balance of benefits and harms of screening with resting or exercise ECG to prevent CVD events in asymptomatic adults at intermediate or high risk of CVD events." (USPSTF, 2018)

In summary, resting electrocardiogram testing in adults with no known signs or symptoms of heart disease (including, but not limited to coronary heart disease) does not have clinical utility in revising risk or in clinical management.

Definitions

Coronary heart disease (also called coronary artery disease): A disease characterized by narrowing or blockage of the blood vessels supplying blood to the heart.

Screening: Examination of a group to separate well persons from those who have an undiagnosed pathologic condition or who are at high risk.

Sudden Cardiac Death (SCD), also called sudden death: Death resulting from an abrupt loss of heart function (cardiac arrest).

References

Peer Reviewed Publications:

1. Chou R, Arora B, Dana T, et al. Screening asymptomatic adults with resting or exercise electrocardiography: A review of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2011; 155:375-385.
2. Moyer VA, U.S. Preventive Services Task Force. Screening for coronary heart disease with electrocardiography: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2012; 157:512-518.

Government Agency, Medical Society, and Other Authoritative Publications:

1. American Academy of Family Physicians. Recommendations for clinical preventive services: coronary heart disease. Leawood, KS: American Academy of Family Physicians; 2014. Available at: <https://www.aafp.org/afp/2014/0115/od1.html>. Accessed on July 3, 2023.
2. Goff DC, Lloyd-Jones DM, Bennett G, et al. 2013 ACC/AHA guideline on the assessment of cardiovascular risk. A report of the American College of Cardiology/American Heart Association Task Force on practice guidelines. *Circulation.* 2014; 129:S46-S73. Available at: <https://doi.org/10.1161/01.cir.0000437741.48606.98>. Accessed on July 3, 2023.
3. Greenland P, Alpert JS, Beller GA, et al.; American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. 2010 ACCF/AHA guideline for assessment of cardiovascular risk in asymptomatic adults: executive summary: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation.* 2010; 122:2748-2764.
4. National Institute of Health (NIH). National Heart, Lung and Blood Institute. Evidence report. Managing blood cholesterol in adults. Estimate of 10-Year Risk for Coronary Heart Disease Framingham Point Scores. Available at: <http://www.nhlbi.nih.gov/health-pro/guidelines/current/cholesterol-guidelines/quick-desk-reference.html/10-year-risk-framingham-table>. Accessed on July 3, 2023.
5. U.S. Preventive Services Task Force (USPSTF). Screening for cardiovascular disease risk with electrocardiography US Preventive Services Task Force recommendation statement. *J American Med Assoc.* 2018; 319(22):2308-2314.
6. U.S. Preventive Services Task Force (USPSTF). Screening for coronary heart disease with electrocardiography clinical summary of U.S. Preventive Services Task Force recommendations. 2018. Available at: <https://www.aafp.org/pubs/afp/issues/2018/0915/od1.html>. Accessed July 3, 2023.

Websites for Additional Information

1. American Heart Association. Coronary artery disease – coronary heart disease. Updated July 31, 2015. Available at: [Coronary Artery Disease - Coronary Heart Disease | American Heart Association](#) Accessed on July 3, 2023.
2. American Heart Association. Electrocardiogram (ECG or EKG). Last reviewed December 27, 2022. Available at: [Electrocardiogram \(ECG or EKG\) | American Heart Association](#) Accessed on July 3, 2023.
3. Centers for Disease Control and Prevention. Heart disease facts. Last reviewed May 15, 2023. Available at: <https://www.cdc.gov/heartdisease/facts.htm>. Accessed on July 3, 2023.
4. National Institutes of Health (NIH). National Heart, Lung, and Blood Institute. Electrocardiogram. Updated March 24, 2022. Available at: <https://www.nhlbi.nih.gov/health/health-topics/topics/ekg/>. Accessed on July 3, 2023.
5. National Institutes of Health (NIH). National Heart, Lung, and Blood Institute. Coronary artery disease: Diagnosis Updated March 24, 2022. Available at <https://www.nhlbi.nih.gov/health/coronary-heart-disease/diagnosis>. Accessed on July 3, 2023.

Index

Resting Electrocardiogram (ECG)

The use of specific product names is illustrative only. It is not intended to be a recommendation of one product over another, and is not intended to represent a complete listing of all products available.

History

Status	Date	Action
Reviewed	08/10/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Updated Discussion/General Information, References and Websites sections.
Reviewed	08/11/2022	MPTAC review. Updated Discussion, References and Websites sections.
Reviewed	08/12/2021	MPTAC review. Updated Discussion, References and Websites sections.
Reviewed	08/13/2020	MPTAC review. Updated Discussion, References and Websites sections. Reformatted Coding section.
Reviewed	08/22/2019	MPTAC review. Updated References section.
Reviewed	09/13/2018	MPTAC review. Updated Discussion and References sections.
New	11/02/2017	MPTAC review. Initial document development.

Federal and State law, as well as contract language, and Medical Policy take precedence over Clinical UM Guidelines. We reserve the right to review and update Clinical UM Guidelines periodically. Clinical guidelines approved by the Medical Policy & Technology Assessment Committee are available for general adoption by plans or lines of business for consistent review of the medical necessity of services related to the clinical guideline when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the member's card.

Alternatively, commercial or FEP plans or lines of business which determine there is not a need to adopt the guideline to review services generally across all providers delivering services to Plan's or line of business's members may instead use the clinical guideline for provider education and/or to review the medical necessity of services for any provider who has been notified that his/her/its claims will be reviewed for medical necessity due to billing practices or claims that are not consistent with other providers, in terms of frequency or in some other manner.

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