

Clinical Policy: Cardiac Risk Assessment Laboratory Tests

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[Coding Implications](#)

[Revision Log](#)

See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

Description

This policy describes the medical necessity requirements for cardiac risk assessment laboratory blood tests. They are proposed to help to determine the risk for coronary artery disease (CAD), myocardial infarction (MI), plus other cardiac conditions and guide the individual's treatment.

Policy/Criteria

- I. It is the policy of Health Net of California that for following tests are medically necessary when the indications are met:
 - A. High-sensitivity C-reactive protein (hs-CRP) testing for the assessment of CAD when the member has undergone previous noninvasive tests for cardiac risk stratification and been found to be at intermediate risk, as evidenced by meeting all of the following:
 - 1.LDL cholesterol levels between 100 to 130 mg/dL;
 - 2.Patient has ≥ 2 coronary heart disease (CHD) major risk factors, such as:
 - i. Hypertension (BP ≥ 140 mmHg or on an antihypertensive medication),
 - ii. Low HDL cholesterol (< 40 mg/dL),
 - iii. Diabetes,
 - iv. Family history of premature CHD in male first degree relative < 55 years; CHD in female first degree relative < 65 years,
 - v. Man ≥ 45 years or woman ≥ 55 years,
 - vi. Current cigarette smoking;
 - 3.Global risk assessment such as the Framingham point scoring (ie 10 to 20% risk of CHD per 10 years).
 - B. Apolipoprotein B (a-poB) in high risk individuals with hypercholesterolemia to assess if additional intense interventions are necessary when LDL cholesterol goals are reached. Persons with diabetes, known cardiovascular disease, family history of premature CVD and smoking are considered high risk.
- II. It is the policy of Health Net of California that any of the following tests are investigational to assess cardiac risk because the medical literature is inconclusive regarding the utility of these tests for screening, diagnosis or management of CHD:
 - A. hs-CRP testing for members at high-risk for CAD,
 - B. hs-CRP as a screening test for the general population or for monitoring response to therapy,
 - C. Complete profiles of cardiac risk,
 - D. Apolipoprotein A-I,
 - E. Apolipoprotein B for the general population,
 - F. Apolipoprotein E,

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- G. Lipoprotein remnants: intermediate density lipoproteins and small density lipoproteins (NMR LipoProfile),
- H. High density lipoprotein subclasses (LpAI, LpAI/AII and/or HDL3 and HDL2),
- I. Low density lipoprotein subclasses (small and large LDL particles) Lipoprotein(a) enzyme immunoassay,
- J. Angiotensin gene (AGT) (CardiaRisk)
- K. Fibrinogen,
- L. Lipoprotein-associated phospholipase A2 (Lp-PLA2) (PLAC), secretory phospholipase A2 (sPLA2-IIA),
- M. Noninvasive measurements of arterial elasticity by means of blood pressure
 - a. waveforms (e.g., HDI PulseWave, CVProfilor),
- N. Post-challenge insulin, high,
- O. Iron levels,
- P. Serum uric acid,
- Q. Vertical auto profile: cholesterol test,
- R. Corus CAD gene expression testing (unless otherwise specified)
- S. Measurement of B-type natriuretic peptides,
- T. Carotid intima-media thickness (CIMT)

Background

CAD develops when the coronary arteries become damaged or diseased with plaque development. Myocardial ischemia occurs when blood flow to the heart is reduced, preventing it from receiving enough oxygen. This reduced blood flow is usually the result of a partial or complete blockage of the coronary arteries. This condition may be chronic, narrowing of the coronary artery over time and limiting of the blood supply to part of the muscle; or it can be acute, resulting from a sudden rupture of a plaque and formation of a thrombus.

CHD is the most common form of heart disease affecting seven million Americans. It could lead to a MI or other cardiac issues and is the result of CAD, which can begin earlier in an individual's life. Preventive measures are thought to delay the progression of CAD. Therefore, it is imperative to understand not only how to diagnose heart disease but also how to stratify its risk, an important factor in treatment decision making in patients with CAD. Once the initial diagnosis has been made, various cardiac tests can be used to obtain pertinent information about risk level and the appropriateness of medical versus more invasive treatments.

Biomarkers of CVD have been identified and evaluated as potential adjuncts to standard risk assessment strategies. For CHD, biomarkers must reflect the underlying biology of the vessel walls and the atherosclerotic process. Various markers include hs-CRP, homocysteine, and Lp-PLA2, which have been investigated as a tool for determining the risk of CVD in apparently healthy and asymptomatic individuals, thereby presenting the opportunity for targeted preventive efforts based on an individual's predicted risk profile.⁴

Hs-CRP is a laboratory test developed to evaluate a patient's risk of MI or other heart conditions. Studies suggest that hs-CRP is useful in detecting the small amounts of CRP in patients with

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atherosclerosis. Current data suggest that the addition of hs-CRP to standard lipid screening can improve the ability to detect absolute coronary risk. This is a critical issue because one-half of all MIs and strokes occur among individuals without overt hyperlipidemia. In addition, it was theorized that risk assessment based on hs-CRP levels might provide a superior prediction of response to statin therapy.

Several meta-analyses, reviews and clinical studies have been published assessing the association of lipoprotein with CVD risk and events. Although consistently strong associations have been found between levels of lipoproteins and adverse cardiac health outcomes, evidence presented on the clinical utility of these measures continues to be inconsistent, conflicting and thus inconclusive. Clinical studies are ongoing to further assess and define the role and clinical utility of lipoprotein testing in CVD risk assessment, treatment and management.

Advanced lipoprotein analysis is being studied to determine if this method is superior to standard testing but currently indicate a lack of universal, standardized testing modalities and patient-selection criteria. Researches note that additional large, prospective studies are needed to establish whether measurement of these emerging markers will be more predictive of CVD than conventional lipid risk factors.

Guidelines from the ACC and the ADA recommend the use of apoB in persons at elevated cardiometabolic risk to assess whether additional intense interventions are necessary when LDL cholesterol goals are reached (Brunzell et al, 2008). According to these guidelines, high-risk persons are those with known CVD, diabetes, or multiple CVD risk factors (i.e., smoking, hypertension, family history of premature CVD). The American Association of Clinical Chemistry has issued similar recommendations regarding the use of apoB (Contois et al, 2009). Guidelines from the American Association of Clinical Endocrinologists (2012) recommend apo B measurements to assess the success of LDL-C–lowering therapy. The guidelines note that LDL particle number as reflected by apo B is a more potent measure of cardiovascular disease (CVD) risk than LDL-C and LDL particle size (e.g., small, dense LDL).

The clinical evidence is insufficient to show an added benefit of CIMT testing beyond traditional lipid risk assessment. There is inadequate clinical evidence from prospective studies that the use of this technology alters patient management and improves clinical outcomes. Additional research involving larger, well-designed studies is needed to establish the role of arterial compliance in the early identification, prevention and management of CVD.

American Heart Association

High-sensitivity C-reactive protein (hsCRP) and coronary artery calcium (CAC) are the leading novel markers of cardiovascular risk and are most commonly suggested for use in a tailored treatment approach.

American College of Cardiology Foundation (ACCF) and American Heart Association (AHA).

In 2019, the American College of Cardiology (ACC) and American Heart Association (AHA) issued a joint statement on the primary prevention of cardiovascular disease which states regarding elevated Lp(a) “a relative indication for its measurement is family history of premature

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ASCVD. An Lp(a) ≥ 50 mg/dL or ≥ 125 nmol/L constitutes a risk-enhancing factor, especially at higher levels of Lp(a).” The guideline further states regarding elevated apo B (≥ 130 mg/dL) that “a relative indication for its measurement would be triglyceride ≥ 200 mg/dL. A level ≥ 130 mg/dL corresponds to an LDL-C > 160 mg/dL and constitutes a risk-enhancing factor.” Lipoprotein-associated phospholipase A2 (Lp-PLA2) testing was not mentioned in the above 2019 guideline, which was a change from 2010 guidelines. In their prior guideline, Lp-PLA2 was given an IIb recommendation for assessing cardiovascular risk in intermediate-risk asymptomatic adults.

National Institute of Health Care Excellence (NICE)

NICE has guidelines on ‘Lipid modification: cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease’. However, these guidelines do not mention the laboratory testing for cardiac risks.

U.S. Preventive Services Task Force (USPSTF 2018)

- USPSTF recommends against screening for asymptomatic carotid artery stenosis in the general adult population. (D recommendation).
- The USPSTF also concluded that the evidence is insufficient to assess the balance of benefits and harms of using nontraditional risk factors, such as CIMT to screen asymptomatic men and women with no history of CHD to prevent CHD events.
- The U.S. Preventive Services Task Force (USPSTF) concluded that the evidence is insufficient to assess the balance of benefits and harms of using the nontraditional risk factors, such as lipoprotein(a), to screen asymptomatic men and women with no history of CHD to prevent CHD events
- The USPSTF notes that the current evidence is insufficient to assess the balance of benefits and harms of adding the ankle-index (ABI), high-sensitivity C-reactive protein (hsCRP) level, or coronary artery calcium (CAC) score to traditional risk assessment for cardiovascular disease (CVD) in asymptomatic adults to prevent CVD events

Coding Implications

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2015, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

CPT® Codes	Description
82172	Apolipoprotein, each
83695	Lipoprotein (a)

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CPT® Codes	Description
83698	Lipoprotein-associated phospholipase A2 (Lp-PLA2)
83700	Lipoprotein, Blood; Electrophoretic Separation And Quantitation
83701	Lipoprotein, Blood; High Resolution Fractionation And Quantitation Of Lipoproteins Including Lipoprotein Subclasses When Performed (Eg, Electrophoresis, Ultracentrifugation)
83704	Lipoprotein, Blood; Quantitation Of Lipoprotein Particle Numbers And Lipoprotein Particle Subclasses (Eg, By Nuclear Magnetic Resonance Spectroscopy)
83718	Lipoprotein, direct measurement; high density cholesterol (HDL cholesterol)
83721	LDL cholesterol
83722	Lipoprotein, direct measurement; small dense LDL cholesterol
83695	Lipoprotein (a) enzyme immunoassay
83698	Lipoprotein-associated phospholipase A2 (Lp-PLA2)
83880	Natriuretic peptide
84999	Unlisted chemistry procedure
86140	C-reactive protein
86141	C-reactive protein; high sensitivity (hsCRP)
93799	Unlisted cardiovascular service or procedure
93895	Common carotid intima-media thickness (IMT) study for evaluation of atherosclerotic burden or coronary heart disease risk factor assessment

HCPCS Codes	Description
N/A	

ICD-10-CM Diagnosis Codes that Support Coverage Criteria

ICD-10-CM Code	Description
E10.9	Type I diabetes mellitus without complication
E11.9	Type II diabetes mellitus without complication
E78.0- E78.89	Disorders of lipoprotein metabolism and other lipidemias
I24.0	Acute coronary thrombosis not resulting in MI
I24.8	Other forms of acute ischemic heart disease
I25.10	Atherosclerotic heart disease of native coronary artery without angina pectoris
I25.110- I25.119	Atherosclerotic heart disease of native coronary artery with angina pectoris

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ICD-10- CM Code	Description
I25.810- I25.9	Other forms of chronic ischemic heart disease
Z13.1	Encounter for screening for diabetes mellitus
Z13.220	Encounter for screening for lipid disorders
Z13.6	Encounter for screening for cardiovascular disorders

Reviews, Revisions, and Approvals	Date	Approval Date
Policy adopted from Health Net NMP 203, Cardiac Risk Assessment Laboratory Tests	10/16	10/16
Updated references, no changes	10/17	10/17
Added secretory phospholipase A2 (sPLA2-IIA) and Carotid intima-media thickness (CIMT) to investigational section. Updated references and background information	10/18	10/18
Added Apolipoprotein B as medically necessary for high risk individuals but not for general population Removed homocysteine as there is a separate Centene Clinical Policy	10/19	10/19
Updated society and college recommendations, codes and references	10/20	10/20
Revised T code for CIMT (93895) Formatting changes	10/21	10/21

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Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. “Health Plan” means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan’s affiliates, as applicable.

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