



CARDIOVASCULAR RISK MARKERS

Effective Date: January 16, 2009
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Status: Current

**Note: Medical Policy #91454 – Lipoprotein Testing been incorporated into this medical policy and will be retired as of the effective date of this policy.*

I. DESCRIPTION

Determination of cardiovascular disease (CVD) risk is based on standard, accepted risk-stratification approaches. These approaches are based on global assessment and traditional risk factor assessment including cholesterol/low density lipoprotein levels (LDL), diet, smoking, diabetes and family and personal medical history. The National Cholesterol Education Program (NCEP) utilizes the Framingham risk scoring calculation, endorsed by the National Heart Lung and Blood Institute (NHLBI) and the AHA for determining 10-year coronary heart disease (CHD) risk.

Newer generation cardiovascular risk markers are developed and proposed to enhance the prediction of cardiovascular disease. Evaluation of the potential clinical utility of these emerging tests includes the following:

- Does the test better identify those at higher risk than the current risk scores (Framingham risk score)?
- Does treatment differ for those at highest risk?
- Does treatment improve clinical outcomes?

II. POLICY/CRITERIA

A. In addition to traditional risk assessment, the following CVD risk markers are a covered benefit:

1. Lipoprotein-associated phospholipase A2 (Lp-PLA2) (PLAC), limited to one test per year.
2. Lipoprotein particle size and concentration measurement and remeasurement in the following circumstances, limited to three tests per year:
 - a. Patients at high risk of CHD who are at their risk-adjusted NCEP goal.
 - b. Patients on lipid modifying therapy who are at their risk-adjusted NCEP goal.



3. High-sensitivity C-reactive protein (hs-CRP) if both of the following:
 - a. Using the 10-year risk assessment tool recommended by the NCEP, the patient is at intermediate risk of developing CHD (i.e. 10-year risk of 10–20%).
 - b. The patient is metabolically stable without obvious inflammatory or infectious conditions.
 4. Apolipoprotein B (apo B) for use in high-risk persons with hypercholesterolemia to assess whether additional intense interventions are necessary when LDL cholesterol goals are reached.
- B. The medical literature does not support the utility of the following tests for screening, diagnosis, or management of CVD and they are **not** a covered benefit:
1. Apolipoprotein A-I (apo AI)
 2. Apolipoprotein E (apo E)
 3. Homocysteine testing
 4. LDL gradient gel electrophoresis
 5. Lipoprotein(a) enzyme immunoassay
 6. Angiotensin gene (CardiaRisk AGT)
 7. Measurement of long chain omega-3 fatty acids
 8. Interleukin 6 -174 g/c promoter polymorphism
 9. Carotid intimal-media thickness
 10. LipiScan (fat composition of plaque)
 11. Prothrombotic factors (e.g., plasminogen activator inhibitor [PAI-1], activated factor VII, tissue plasminogen activator [tPA], von Willebrand factor, factor V Leiden, protein C, antithrombin III, fibrinogen)
 12. Skin cholesterol test (PREVU Point of Care (POC) Skin Sterol Test, PreMD Inc.)
- C. Cardiovascular Risk Assessment was reviewed by Priority Health's Technology Assessment Committee in September 2008. This policy reflects recommendations of the TAC.

III. MEDICAL NECESSITY REVIEW

Required

Not Required

Not Applicable

**IV. APPLICATION TO PRODUCTS**

Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

- ❖ **HMO/EPO:** *This policy applies to insured HMO/EPO plans.*
- ❖ **POS:** *This policy applies to insured POS plans.*
- ❖ **PPO:** *This policy applies to insured PPO plans.*
- ❖ **ASO:** *For self-funded plans, consult individual plan documents. If there is a conflict between this policy and a self-funded plan document, the provisions of the plan document will govern.*
- ❖ **INDIVIDUAL:** *For individual policies, consult the individual insurance policy. If there is a conflict between this medical policy and the individual insurance policy document, the provisions of the individual insurance policy will govern.*
- ❖ **MEDICARE:** *Coverage is determined by the Centers for Medicare and Medicaid Services (CMS).*
- ❖ **MEDICAID:** *Coverage is determined by the Michigan Medicaid Provider Manual and the Michigan Medicaid Fee Schedule at: http://www.michigan.gov/mdch/0,1607,7-132-2945_42542_42543_42546_42551-159815--,00.html.*
- ❖ **MICHILD:** *For MICHILD members, this policy will apply unless MICHILD certificate of coverage limits or extends coverage.*

V. CODING INFORMATION**ICD-9 Codes that may apply:**

- 272.0 Pure hypercholesterolemia
- 272.1 Pure hyperglyceridemia
- 272.2 Mixed hyperlipidemia
- 272.3 Hyperchylomicronemia
- 272.4 Other and unspecified hyperlipidemia
- 272.5 Lipoprotein deficiencies
- 272.7 Lipidoses

- 305.1 Tobacco use disorder

- V17.3 Family history of ischemic heart disease
- V17.4 Family history of other cardiovascular diseases
- V17.49 Family history of other cardiovascular diseases
- V81.0 Special screening for ischemic heart disease
- V81.1 Special screening hypertension
- V81.2 Special screening other and unspecified cardiovascular conditions

CPT/HCPCS Codes:

See criteria above for coverage information.

- 80061 Lipid panel
- 82172 Apolipoprotein, each
- 82397 Chemiluminescent assay
- 82465 Cholesterol, serum or whole blood, total
- 82615 Cystine and homocystine, urine, qualitative
- 83090 Homocysteine



- 83520 Immunoassay, analyte, quantitative; not otherwise specified
- 83695 Lipoprotein (a)
- 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)
- 83719 Lipoprotein, direct measurement; VLDL cholesterol
- 83721 Lipoprotein, direct measurement; LDL cholesterol

See also Policy# 91450 Genetic Counseling, Testing and Screening

- 83890 Molecular diagnostics; molecular isolation or extraction
- 83891 Molecular diagnostics; isolation or extraction of highly purified nucleic acid
- 83892 Molecular diagnostics; enzymatic digestion
- 83893 Molecular diagnostics; dot/slot blot production
- 83894 Molecular diagnostics; separation by gel electrophoresis (eg, agarose, polyacrylamide)
- 83896 Molecular diagnostics; nucleic acid probe, each
- 83897 Molecular diagnostics; nucleic acid transfer (eg, Southern, Northern)
- 83898 Molecular diagnostics; amplification, target, each nucleic acid sequence
- 83900 Molecular diagnostics; amplification, target, multiplex, first two nucleic acid sequences
- 83901 Molecular diagnostics; amplification, target, multiplex, each additional nucleic acid sequence beyond 2 (List separately in addition to code for primary procedure)
- 83902 Molecular diagnostics; reverse transcription
- 83903 Molecular diagnostics; mutation scanning, by physical properties (eg, single strand conformational polymorphisms (SSCP), heteroduplex, denaturing gradient gel electrophoresis (DGGE), RNA'ase A), single segment, each
- 83904 Molecular diagnostics; mutation identification by sequencing, single segment, each segment
- 83905 Molecular diagnostics; mutation identification by allele specific transcription, single segment, each segment
- 83906 Molecular diagnostics; mutation identification by allele specific translation, single segment, each segment
- 83907 Molecular diagnostics; lysis of cells prior to nucleic acid extraction (eg, stool specimens, paraffin embedded tissue)
- 83908 Molecular diagnostics; amplification, signal, each nucleic acid sequence
- 83909 Molecular diagnostics; separation and identification by high resolution technique (eg, capillary electrophoresis)
- 83912 Molecular diagnostics; interpretation and report
- 83913 Molecular diagnostics; RNA stabilization
- 83914 Mutation identification by enzymatic ligation or primer extension, single segment, each segment (eg, oligonucleotide ligation assay (OLA), single base chain extension (SBCE), or allele-specific primer extension (ASPE))



84181	Protein; Western Blot, with interpretation and report, blood or other body fluid
84478	Triglycerides
84999	Unlisted chemistry procedure
85300	Clotting inhibitors or anticoagulants; antithrombin III, activity
85303	Clotting inhibitors or anticoagulants; protein C, activity
85384	Fibrinogen; activity
85385	Fibrinogen; antigen
85415	Fibrinolytic factors and inhibitors; plasminogen activator
85420	Fibrinolytic factors and inhibitors; plasminogen, except antigenic assay
85421	Fibrinolytic factors and inhibitors; plasminogen, antigenic assay
86141	C-reactive protein; high sensitivity (hsCRP)
0111T	Long-chain (C20-22) omega-3 fatty acids in red blood cell (RBC) membranes
0126T	Common carotid intima-media thickness (IMT) study for evaluation of atherosclerotic burden or coronary heart disease risk factor assessment

VI. REFERENCES

Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III), September 2002, Updated 2004.

Measurement of Carotid Intima-Media Thickening (IMT) for Detection of Atherosclerosis, Hayes, Inc. Search & Summary August 2007.

Lorenz, M. W., et. al. Prediction of Clinical Cardiovascular Events with Carotid Intima-Media Thickness: A Systematic Review and Meta-Analysis. *Circulation*, January 30, 2007.

Bots, M.L., et.al. Carotid intima-media thickness and coronary atherosclerosis: weak or strong relations? *European Heart Journal* (2007), 398-406

Lipoprotein-Associated Phospholipase A2 (Lp-PLA2) Test (PLAC Test; diaDexus) for Prediction of Coronary Heart Disease, Hayes, Inc. Search & Summary, January 2007.

Advances in the Detection of Rupture-Prone Plaque: The Role of Lipoprotein-Associated Phospholipase A2 in Cardiovascular Risk Assessment. *The American Journal of Cardiology Supplement*, June 16, 2008.

Lipoprotein Subclass Quantification Using NMR LipoProfile® Test for Atherosclerosis/Coronary Heart disease (CHD), Hayes, Inc. Brief, April 7, 2007.



Harchaoui, K. E., et.al. Value of Low-Density Lipoprotein Particle Number and Size as Predictors of Coronary Artery Disease in Apparently Health Men and Women, The EPIC-Norfolk Prospective Population Study. Journal of the American College of Cardiology, Vol. 49, No. 5, 2007.

Otvos, J.D. et.al. Low-Density Lipoprotein and High-Density Lipoprotein Particle Subclasses Predict Coronary Events and are Favorably Changed by Gemfibrozil Therapy in the Veterans Affairs High-Density Lipoprotein Intervention Trail (VA-HIT). Circulation, March 28, 2006.

Cardiac Disease Risk Assessment: Emerging Laboratory Evaluations, Cigna Healthcare Coverage Position, 8/15/2008. Available on the World Wide Web @ http://www.cigna.com/customer_care/healthcare_professional/coverage_positions/medical/mm_0137_coveragepositioncriteria_cardiac_disease_risk_laboratory_studies.pdf (Retrieved November 10, 2008)

Cardiovascular Disease Risk Tests, Aetna Clinical Policy Bulletin, 7/11/2008. Available on the World Wide Web @ http://www.aetna.com/cpb/medical/data/300_399/0381.html (Retrieved November 10, 2008)

Hayes, Inc. Skin Cholesterol Test Using the PREVU* Point of Care (POC) Skin Sterol Test (PreMD Inc.) for Prediction of Coronary Artery Disease Risk, Health Technology Brief. October 30, 2008.

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