

Medical Policy:

Lipoprotein Subclassification Testing for Screening, Evaluation and Monitoring of Cardiovascular Disease

POLICY NUMBER	LAST REVIEW
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[\(Skip Definitions and go directly to clinical criteria\)](#)

Definitions

Lipoproteins	Blood-borne complexes of lipids and proteins that allow the transport of cholesterol throughout the body. Note: There is an association between disorders of lipoprotein metabolism and coronary heart disease, especially high serum levels of low-density lipoprotein (LDL) cholesterol and low serum levels of high-density lipoprotein (HDL) cholesterol. Tests routinely done to ascertain cardiovascular disease (CVD) include measurement of plasma levels of total cholesterol, total HDL cholesterol, total LDL cholesterol, and triglycerides. It is theorized that the evaluation of lipoprotein subclass particles (aka advanced lipoprotein testing) may contribute to improved CVD prediction and management, including coronary heart disease and ischemic stroke.
Basic lipid panel	Measures total cholesterol, triglyceride levels, HDL, and LDL cholesterol levels.
Alpha-lipoprotein (α-lipoprotein)	One with electrophoretic mobility equivalent to that of the α1-globulins, e.g., high-density lipoprotein.
Beta-lipoprotein (β-lipoprotein)	One with electrophoretic mobility equivalent to that of the β-globulins, e.g., low-density lipoprotein.

High-density lipoprotein (HDL)	Class of plasma lipoproteins that promote transport of cholesterol from extra-hepatic tissue to the liver for excretion in the bile; serum levels have been negatively correlated with premature CAD.
Intermediate-density lipoprotein (IDL)	Class of lipoproteins formed in the degradation of very-low-density lipoproteins; some are cleared rapidly into the liver and some are degraded to low-density lipoproteins.
Low-density lipoprotein (LDL)	Class of plasma lipoproteins that transport cholesterol to extra-hepatic tissues; high serum levels have been correlated with premature CHD.
Lp(a) lipoprotein	A lipoprotein particle containing apolipoprotein B-100 as well as an antigenically unique apolipoprotein; its occurrence at high levels in plasma has been correlated with increased risk of heart disease.
Very-high-density lipoprotein (VHDL)	A class of lipoproteins composed predominantly of proteins and also containing a high concentration of free fatty acids.
Very-low-density lipoprotein (VLDL)	Class of lipoproteins that transport triglycerides from the intestine and liver to adipose and muscle tissues; they contain primarily triglycerides with some cholesteryl esters.

Guideline

- A. The basic lipid panel (CPT code 80061) (measuring total cholesterol, total HDL cholesterol, total LDL cholesterol and triglycerides) is considered **medically necessary** for the screening, evaluation and monitoring of CVD.
- B. Lipoprotein subclassification testing (aka advanced lipoprotein testing such) is **not considered medically necessary** for the screening, evaluation and monitoring of CVD (including analysis for familial dyslipidemias). Testing includes, but is not limited to:
 1. Apolipoprotein A1 (Apo A1)
 2. Apolipoprotein A2 (Apo A2)
 3. Apolipoprotein B (Apo B)
 4. Apolipoprotein E isoforms (ApoE isoforms [E2, E3, E4])
 5. HDL subparticles (e.g., LpAI, LPAI/AII, and or HDL3 and HDL2)
 6. LDL subparticles (e.g., small and large LDL particles)
 7. Lipoprotein remnants (e.g., intermediate density lipoproteins [IDL] and small low-density lipoproteins [sdLDL])
 8. Lipoprotein A (Lp[a])

(CPT codes not considered medically necessary for the screening, evaluation and monitoring of CVD: 82172, 83695, 83698, 83700, 83701, 83704, 0423T)

Limitations and Exclusions

1. Lipoprotein subclassification testing (e.g., Boston Heart Cholesterol Balance® Test) is considered investigational for all indications due to insufficient evidence of therapeutic value.
2. Measurement of homocysteine levels in advanced lipid testing is unproven for assessing cardiovascular risk.

Procedure Codes

80061	Lipid panel This panel must include the following: Cholesterol, serum, total (82465) Lipoprotein, direct measurement, high density cholesterol (HDL cholesterol) (83718) Triglycerides (84478)
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ICD-10 Diagnoses

I10	Essential (primary) hypertension
I11.0	Hypertensive heart disease with heart failure
I11.9	Hypertensive heart disease without heart failure
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I13.10	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease
I15.0	Renovascular hypertension
I15.1	Hypertension secondary to other renal disorders
I15.2	Hypertension secondary to endocrine disorders
I15.8	Other secondary hypertension
I15.9	Secondary hypertension, unspecified
I16.0	Hypertensive urgency
I16.1	Hypertensive emergency
I16.9	Hypertensive crisis, unspecified
I20.0	Unstable angina
I20.1	Angina pectoris with documented spasm
I20.8	Other forms of angina pectoris
I20.9	Angina pectoris, unspecified
I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery
I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery
I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery
I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall
I21.21	ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery
I21.29	ST elevation (STEMI) myocardial infarction involving other sites
I21.3	ST elevation (STEMI) myocardial infarction of unspecified site
I21.4	Non-ST elevation (NSTEMI) myocardial infarction
I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall
I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall
I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction
I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites
I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site
I23.0	Hemopericardium as current complication following acute myocardial infarction
I23.1	Atrial septal defect as current complication following acute myocardial infarction
I23.2	Ventricular septal defect as current complication following acute myocardial infarction

I23.3	Rupture of cardiac wall without hemopericardium as current complication following acute myocardial infarction
I23.4	Rupture of chordae tendineae as current complication following acute myocardial infarction
I23.5	Rupture of papillary muscle as current complication following acute myocardial infarction
I23.6	Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction
I23.7	Postinfarction angina
I23.8	Other current complications following acute myocardial infarction
I24.0	Acute coronary thrombosis not resulting in myocardial infarction
I24.1	Dressler's syndrome
I24.8	Other forms of acute ischemic heart disease
I24.9	Acute ischemic heart disease, unspecified
I25.10	Atherosclerotic heart disease of native coronary artery without angina pectoris
I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris
I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris
I25.2	Old myocardial infarction
I25.3	Aneurysm of heart
I25.41	Coronary artery aneurysm
I25.42	Coronary artery dissection
I25.5	Ischemic cardiomyopathy
I25.6	Silent myocardial ischemia
I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris
I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm
I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris
I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris
I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris
I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm
I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris
I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris
I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris
I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm
I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris
I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris
I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris
I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm
I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris
I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris
I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina
I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm

I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris
I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris
I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina
I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm
I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris
I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris
I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris
I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm
I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris
I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris
I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris
I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris
I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris
I25.82	Chronic total occlusion of coronary artery
I25.83	Coronary atherosclerosis due to lipid rich plaque
I25.84	Coronary atherosclerosis due to calcified coronary lesion
I25.89	Other forms of chronic ischemic heart disease
I25.9	Chronic ischemic heart disease, unspecified
I50.1	Left ventricular failure, unspecified
I50.20	Unspecified systolic (congestive) heart failure
I50.21	Acute systolic (congestive) heart failure
I50.22	Chronic systolic (congestive) heart failure
I50.23	Acute on chronic systolic (congestive) heart failure
I50.30	Unspecified diastolic (congestive) heart failure
I50.31	Acute diastolic (congestive) heart failure
I50.32	Chronic diastolic (congestive) heart failure
I50.33	Acute on chronic diastolic (congestive) heart failure
I50.40	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure
I50.41	Acute combined systolic (congestive) and diastolic (congestive) heart failure
I50.42	Chronic combined systolic (congestive) and diastolic (congestive) heart failure
I50.43	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure
I50.810	Right heart failure, unspecified
I50.811	Acute right heart failure
I50.812	Chronic right heart failure
I50.813	Acute on chronic right heart failure
I50.814	Right heart failure due to left heart failure
I50.82	Biventricular heart failure
I50.83	High output heart failure
I50.84	End stage heart failure
I50.89	Other heart failure

I50.9	Heart failure, unspecified
I51.0	Cardiac septal defect, acquired
I51.1	Rupture of chordae tendineae, not elsewhere classified
I51.2	Rupture of papillary muscle, not elsewhere classified
I51.3	Intracardiac thrombosis, not elsewhere classified
I51.4	Myocarditis, unspecified
I51.5	Myocardial degeneration
I51.7	Cardiomegaly
I51.81	Takotsubo syndrome
I51.89	Other ill-defined heart diseases
I51.9	Heart disease, unspecified
Z13.6	Encounter for screening for cardiovascular disorders

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Specialty matched clinical peer review.

Revision History

Jul. 8, 2022	Added language communicating that measurement of homocysteine levels in advanced lipid testing is unproven for assessing cardiovascular risk ConnectiCare adopts clinical criteria of its parent corporation EmblemHealth
Jun. 11, 2021	Added Boston Heart Cholesterol Balance Test, as example of an investigational subclassification test
Jun. 12, 2020	Added familial dyslipidemias as not medically necessary for lipoprotein subclassification testing