**Lp-PLA₂ Activity**

CPT Code 83689  
Order Code C570  
LCD-CGS L36139

**Sample Type**  
Serum or EDTA Plasma

**Tube Type**  
Tiger Top or Lavender Top

---

**Increased activity of Lp-PLA₂ may lead to increased risk of:**
- Coronary heart disease (CHD)
- Myocardial infarction (MI)

**Lp-PLA₂ Activity can be reduced by:**
- Treatment with cholesterol lowering therapies
- Supplementation with omega-3 fatty acids
- Lifestyle modifications (smoking cessation and weight loss)

---

**Description**

Lp-PLA₂, or lipoprotein-associated phospholipase-A₂, measures disease activity within the artery wall below the collagen or calcified cap due to the activation of macrophages. Lp-PLA₂ is not an acute phase reactant. When disease is active in the artery, increased levels of Lp-PLA₂ are produced by macrophages and foam cells within the intima of the artery. Lp-PLA₂ also interacts with oxidized low-density lipoprotein (OxLDL), which increases inflammation and enhances a proatherogenic state, as well as plaque vulnerability. Research suggests that it plays a direct role in the atherosclerotic disease process.

**Clinical Use**

The Lp-PLA₂ Activity test may be performed on individuals at intermediate or high risk for developing coronary heart disease.

**Clinical Significance**

- Lp-PLA₂ accumulates within human atherosclerotic plaques and vulnerable lesions.
- Individuals with elevated Lp-PLA₂ Activity are nearly twice as likely to develop CHD at 7 years regardless of non-high-density lipoprotein (non-HDL) cholesterol levels.
- Individuals with elevated Lp-PLA₂ Activity are twice as likely to experience a CHD event (MI, coronary revascularization or CHD-related death) at 5 years.

**Testing Frequency**

Lp-PLA₂ testing is determined by an individual’s medical history, but may be performed semi-annually or annually as necessary. If the initial test result is abnormal, then follow-up testing may be performed within 3-6 months following treatment.

---

**Sample Type**

The Lp-PLA₂ Activity test should be performed on a serum or EDTA plasma sample.

**Commercial Insurance or Medicare Coverage**

Coverage guidelines, also known as NDC (National Coverage Determination) or LCD (Local Coverage Determination) have been established or posted by CMS (Medicare & Medicaid). Guidelines should be reviewed for coverage and limitations. Limited information has been provided by the majority of the larger carriers (Aetna, United Healthcare, Cigna, Blues).

**Understanding Medical Necessity**

The following ICD-10 codes for Lp-PLA₂ Activity listed below, and in the Cleveland HeartLab Practitioner Guide, are provided as a convenience for the ordering physician. Additional diagnostic codes can be referenced on the CMS website or guidelines specified by insurance carriers. The ordering physician should report the diagnosis code that best describes the reason for performing the test.

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Diagnosis Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 Diabetes Mellitus with Hyperglycemia</td>
<td>E11.65</td>
</tr>
<tr>
<td>Type 2 Diabetes Mellitus without Complications</td>
<td>E11.9</td>
</tr>
<tr>
<td>Pure Hypercholesterolemia, Unspecified</td>
<td>E78.00</td>
</tr>
<tr>
<td>Familial Hypercholesterolemia</td>
<td>E78.01</td>
</tr>
<tr>
<td>Mixed Hyperlipidemia</td>
<td>E78.2</td>
</tr>
<tr>
<td>Hyperlipidemia, Unspecified</td>
<td>E78.5</td>
</tr>
<tr>
<td>Hyperuricemia without Signs of Inflammatory Arthritis and Tophaceous Disease</td>
<td>E79.0</td>
</tr>
<tr>
<td>Metabolic Syndrome</td>
<td>E88.81</td>
</tr>
<tr>
<td>Essential (primary) Hypertension</td>
<td>I10</td>
</tr>
<tr>
<td>Atherosclerotic Heart Disease of Native Coronary Artery without Angina Pectoris</td>
<td>I25.10</td>
</tr>
<tr>
<td>Family History of Ischemic Heart Disease and Other Diseases of the Circulatory System</td>
<td>Z82.49</td>
</tr>
</tbody>
</table>

---

**CPT Code**  
83689

**Order Code**  
C570

**LCD-CGS**  
L36139

**Sample Type**  
Serum or EDTA Plasma

**Tube Type**  
Tiger Top or Lavender Top
RELATIVE RISK
Lp-PLA_2 Activity
(nmol/min/mL)

<75 Low  ≥75 High

Treatment Considerations

These treatment considerations are for educational purposes only. Specific treatment plans should be provided and reviewed by the treating practitioner.

✔ Assess LDL-C levels.
  • If not at goal, consider lipid-lowering therapies described in the National Cholesterol Education Program/Adult Treatment Panel III (NCEP/ATP III) Guidelines^7,8.

✔ Assess omega-3 fatty acid levels.
  • Omega-3 fatty acid supplementation, along with statin therapy, may reduce Lp-PLA_2 levels^9,10.

✔ Assess HDL-C levels.
  • Assess coenzyme Q10 (CoQ10) levels as evidence suggests that low apolipoprotein A1 (ApoA1) and/or high-density lipoprotein-cholesterol (HDL-C) levels are associated with low CoQ10 levels^11.

✔ Assess the presence of coronary artery disease (CAD) with imaging techniques such as carotid intima-media thickness (CIMT) testing or coronary artery calcium (CAC) scoring.
  • Consider aspirin therapy if not contraindicated.
  • Consider clopidogrel if history of CAD (i.e., myocardial infarction or revascularization) and/or a history of cerebrovascular disease (i.e., transient ischemic attack or stroke).

✔ Assess dental health (periodontal disease).
  • Refer to dentist to identify gum disease.

✔ Assess blood pressure.
  • If not at goal, consider initiating, or titrating, antihypertensive therapy.

  NOTE: An elevated blood pressure may contribute to endothelial damage and coronary disease formation.

✔ Assess lifestyle habits.
  • Consider diet/exercise/weight reduction efforts if appropriate^12.
  • Smoking cessation is essential as individuals who smoke are at increased risk of heart disease and blood clots.

References
7. Schaefer EJ. Effects of atorvastatin versus other statins on fasting and postprandial C-reactive protein and lipoprotein-associated phospholipase A2 in patients with coronary heart disease versus control subjects. Am J Cardiol. 2005; 95(9):1025-1032.
11. Toyama K et al. Rosuvastatin combined with regular exercise preserves coenzyme Q10 levels associated with a significant increase in high-density lipoprotein cholesterol in patients with coronary artery disease. Atherosclerosis. 2011; 217: 158-164.