

Lipoprotein(a)

Elevated lipoprotein(a) [Lp(a)] levels are associated with vascular disorders including peripheral vascular disease, cerebrovascular disease, premature cardiovascular disease (CVD), coronary heart disease (CHD), myocardial infarction (MI) and stroke.^{1,2,3} This association is independent from traditional risk factors and may be more specifically associated with vascular outcome than a number of systemic inflammation markers.² Additionally, synergistic effects occur when low-density lipoprotein (LDL) is also elevated.^{4,5}

Lipoprotein(a) is a specific class of lipoproteins found in human plasma that is composed of two components, a single LDL particle and a single molecule of apolipoprotein (a). Apolipoprotein B, a single copy being present per LDL particle, is the point of disulfide binding between the LDL particle and apo(a).^{1,2,6} Lp(a) is highly heritable.⁷ Size and levels of Lp(a) are almost entirely attributable to apo(a) gene LPA, which accounts for >90% of the genetic variation in Lp(a) concentrations.¹

The Lp(a) levels in different ethnic populations can vary widely. Africans, and/or people of African descent, generally have Lp(a) levels higher than Caucasians and Asians, while Native Americans generally have levels lower than Caucasians.⁸ Fifteen percent to 20% of Caucasians have Lp(a) levels ≥ 75 nmol/L and are presumed to be at risk.^{1,8} Median Lp(a) levels in people of African descent have been found to be almost three times higher than Caucasians without increased CHD risk. Small apo(a) isoforms, thought to be more atherogenic than large apo(a) isoforms, could partially be the reason. Lp(a) levels have been positively associated with CVD risk in both Caucasians and people of African descent with the association between ischemic strokes and Lp(a) levels more robust in people of African descent.⁹

Measurement of lipoprotein(a) has been recommended for several patient subgroups for whom excess elevated Lp(a) values may have important clinical consequences: (1) patients with premature atherosclerosis, (2) patients with a strong family history of premature coronary heart disease (CHD), (3) patients with elevated LDL-C and two or more risk factors, (4) patients who have had coronary angioplasty in whom Lp(a) excess may increase the risk of restenosis, (5) patients with familial hypercholesterolemia, and (6) patients who have undergone coronary bypass graft surgery in whom Lp(a) excess may be associated with graft stenosis.¹⁰⁻¹³

Lipoprotein(a) has been shown to be a powerful predictor of premature atherosclerotic vascular disease.¹⁰ As an independent risk factor for premature coronary artery disease, elevated Lp(a) concentrations are associated with an increased risk of cardiac death in patients with acute coronary syndromes and with restenosis after angioplasty (PTCA) and coronary artery bypass procedures. In general, concentrations greater than or equal to 75 nmol/L of Lp(a) in serum are associated with a two- to sixfold increase in risk, depending on the presence of other risk factors.

LDL lowering is a primary focus of treatment for elevated Lp(a) levels.¹³ Patients on statin therapy with increased Lp(a) concentrations harbor residual risk that requires patient management to reduce CHD risk.⁶ In this setting, more aggressive LDL lowering may be considered if clinically indicated.¹³ Determination of Lp(a) levels in conjunction with clinical evaluation, patient risk assessment, and other lipid tests to evaluate disorders of lipid metabolism, may aid in risk assessment for coronary heart disease or events.

Test Name	Test Number
Lipoprotein(a)	120188

For the most current information regarding test options, including specimen requirements and CPT codes, please consult the online Test Menu at www.LabCorp.com.

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