

Oxidized LDL (OxLDL)

CPT Code 83520 Sample Type Serum/EDTA Plasma
Order Code C335 Tube Type Tiger Top/Lavender Top

Individuals with increased levels of oxidized LDL are 4 times more likely to develop metabolic syndrome¹.

Increased OxLDL levels signify increased risk for:
Metabolic syndrome
Cardiovascular disease
Acute myocardial infarction



OxLDL levels may be decreased by:
Maintaining a healthy weight/diet
Exercising more
Cholesterol-lowering medications

What is OxLDL?

OxLDL is formed when the ApoB protein on LDL particles becomes oxidized. OxLDL is recognized by scavenger receptors on macrophages which engulf OxLDL, leading to foam cell formation which in turn initiates atherosclerosis and enhances vascular inflammation.

Why measure OxLDL levels?

- Individuals with high levels of OxLDL are 4 times more likely to develop metabolic syndrome in the next 5 years¹.
- Increased OxLDL levels are associated with the presence of coronary artery disease²⁻⁴.
- In healthy middle-aged men, high OxLDL levels are associated with a 4 times greater risk of developing coronary heart disease⁵.
- Levels of OxLDL increase in a step-wise fashion as the severity of CAD increases⁶.

How often should I order OxLDL?

The OxLDL test can be ordered in conjunction with standard/advanced lipid testing or inflammation testing. OxLDL testing is useful in individuals whose lifestyle puts them at risk for metabolic syndrome and/or cardiovascular disease, or those who have cardiovascular disease and are at risk for an adverse cardiac event. It is a useful marker to assess the impact of lifestyle changes and medical therapy.

Are OxLDL levels elevated in other non-cardiovascular conditions?

OxLDL levels may be elevated in patients with kidney disease and polycystic ovary syndrome. OxLDL levels should also be interpreted with caution in patients with known autoimmune disorders and those with diseases associated with oxidative stress, such as Alzheimer's disease.

Is the OxLDL test covered by insurance?

There are no LCD (Local Coverage Determination) or NCD (National Coverage Determination) guidelines for Medicare or other commercial carriers for this test.

Relative Risk: Low: <45 U/L
Moderate: 45-59 U/L
High: >59 U/L

References

1. Holvoet P et al. Association between circulating oxidized low-density lipoprotein and incidence of the metabolic syndrome. *JAMA*. 2008; 299: 2287-2293.
2. Holvoet P et al. Circulating oxidized LDL is a useful marker for identifying patients with coronary artery disease. *Arterioscler Thromb Vasc Biol*. 2001; 21: 844-848.
3. Nishi K et al. Oxidized LDL in carotid plaques and plasma associates with plaque instability. *Arterioscler Thromb Vasc Biol*. 2002; 22: 1649-1654.
4. Tsimikas S et al. Oxidized phospholipids, Lp(a) lipoprotein, and coronary artery disease. *N Engl J Med*. 2005; 353: 46-57.
5. Meisinger C et al. Plasma oxidized low-density lipoprotein, a strong predictor for acute coronary heart disease events in apparently healthy, middle-aged men from the general population. *Circulation*. 2005; 112: 651-657.
6. Ehara S et al. Elevated levels of oxidized low density lipoprotein show a positive relationship with the severity of acute coronary syndromes. *Circulation*. 2001; 103: 1955-1960.



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OxLDL Treatment Algorithm

