

A metabolic syndrome early warning signal

Identifying risk with oxidized LDL

Metabolic syndrome consists of various risk factors that increase your chance of developing diabetes or heart disease. Metabolic syndrome is characterized by having at least 3 of the following risk factors: a large waistline, high triglyceride levels, low HDL cholesterol (the “good” cholesterol) levels, high blood pressure or high blood glucose levels. In the US, approximately 34% of adults meet the criteria for metabolic syndrome. Even more alarming is the increasing presence of metabolic syndrome in children due to obesity.

Unfortunately, by the time metabolic syndrome is diagnosed, your blood vessels and heart are already damaged. Researchers have recently found that measuring oxidized LDL can predict your risk of developing metabolic syndrome.

What is oxidized LDL?

Oxidized LDL is LDL cholesterol (the “bad” cholesterol) that has been modified by oxidation. Oxidized LDL triggers inflammation leading to the formation of plaque in the arteries, also known as atherosclerosis. Oxidized LDL may also play a role in increasing the amount of triglycerides the body produces, as well as increasing the amount of fat deposited by the body. In turn, fat tissue can enhance the oxidation of LDL, creating a vicious cycle.

Why should I get my oxidized LDL levels tested?

Researchers have found that individuals with high levels of oxidized LDL are 4 times more likely to develop metabolic syndrome up to five years following testing. In particular, increased oxidized LDL levels were associated with abdominal obesity and high triglyceride levels, as well as high blood glucose.

The oxidized LDL test can also help your doctor decide if you may be at a higher risk for heart attack or heart disease than by looking at traditional risk factors alone. Oxidized LDL may be twice as good at helping your doctor know your risk for heart disease as any one of the traditional risk factors.

When should I get tested for oxidized LDL?

Your oxidized LDL levels should be tested when you get your standard cholesterol test. Your doctor may order oxidized LDL if you are at low or intermediate risk of metabolic syndrome or cardiovascular disease due to lifestyle risks.

How should I prepare for the oxidized LDL test?

There are no preparations necessary. The oxidized LDL test does not require you to fast, and you can continue to take your medications.

What can I do to help lower my oxidized LDL levels?

Lifestyle changes are the best option to help lower your oxidized LDL levels.

- If you smoke, ask your doctor to help you quit. It is not easy but there are programs and strategies (including over-the-counter and prescription medications) that can improve your chance of success.
- Adjust your diet to include foods low in saturated fat and those with zero trans-fat. Fruits and vegetables are also great options as they contain anti-oxidants.
- Talk with your doctor about over-the-counter supplements containing anti-oxidants.
- Increase your amount of physical activity as approved by your doctor.



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