

# What Is Apo B Test and Who Should Have It

**E**xcess amount of cholesterol in our bloodstream, can accumulate in our arteries, causing heart attack or a stroke or peripheral arterial disease. Standard blood test, which include total cholesterol, triglycerides, LDL cholesterol, and HDL cholesterol may not always give a full picture about the risk.

Many people, especially those with diabetes, fatty liver disease, and abdominal obesity may benefit from another test called Apolipoprotein B also called Apo B test

Cholesterol is a waxy substance, and it is water insoluble, and therefore it cannot freely circulate in the bloodstream. It is packaged into tiny protein-covered particles, called Lipoproteins, which helped them to move freely in the circulation.

Apo B is a protein that attaches to harmful fat particles in the blood to form Lipoprotein, including low density lipoprotein or LDL. An Apo B test measures the number of LDL and other fat particles that can contribute to blocked arteries. It is a better indicator of your risk than LDL cholesterol, which is an estimate rather than direct measurement.

All the lipoproteins that contribute to clogged arteries, known as atherogenic particles carry a single Apo B molecule on their surface. But they differ in the amount of cholesterol they carry.

They include not only LDL cholesterol, but also intermediate density lipoprotein.(IDL), very low density, Lipoprotein(VLDL), chylomicrons( the largest, lowest density particles made mainly of fat) and lipoprotein (a)

A standard cholesterol test usually reports your total cholesterol- which is the sum of your VLDL, LDL, IDL AND HDL combined. . Some labs also report non-HDL cholesterol, which is total cholesterol minus the HDL. This value measures all the cholesterol in atherogenic Apo B particles. But this does not reveal the actual number of these particles, which carry varying amount of cholesterol.

## **APO TEST RESULTS**

The apo B number is important because LDL particles—which carry most of the cholesterol in your blood—come in a range of sizes and are not created equal. If the LDL particle in your blood are mostly on the small size, you will have a greater number of these particles for any given LDL cholesterol level compared to someone with larger particles.

The more particles are traveling in your blood, the more likely they are to become stuck inside your arterial wall. So, while your LDL cholesterol value may appear normal or even low, your apo B maybe high

Since the apo B test reveals the total number of atherogenic particles in the blood, it provides a better picture of a person's risk of cardiovascular disease

### **Apo B numbers**

In healthy people, apo B values are less than 90 mg/dL which is considered acceptable. Values between 90 and 129 mg/dL are considered borderline high to moderately elevated. Values greater than 130 mg/dL are linked to a much higher risk for cardiovascular diseases. However, it is better to keep the number less than 70 for high risk patients

### **WHO NEEDS APO B TEST**

This test is widely available. There are two reasons why apo B test is not done routinely. 1. Based on decades of research that relies on cholesterol values, regular lipid panels are deeply ingrained as the standard way to assess heart disease risk 2. LDL cholesterol and Apo B are very closely related, so for most people, LDL cholesterol is generally a good surrogate for Apo B

Present guideline suggests that people with heart disease aim for an LDL level below 55 mg/dL. While an Apo B of 90 mg/dL is fine in a healthy person, an ideal Apo B value is less than 70 mg/dL, if you have multiple risk factors or you already have heart disease

People with metabolic syndrome, pre-diabetes, diabetes, abdominal obesity, elevated triglycerides, or fatty liver disease- are more likely to have high Apo B levels. These people should consider Apo B testing. This should also be considered in people with strong family history of early heart, disease, as well as those with normal or low LDL level and have evidence of cardiovascular disease.

## **HOW TO IMPROVE APO B LEVEL**

Lifestyle habits, such as following a Mediterranean diet, getting regular exercise can moderately lower the number. Cholesterol lowering medication, including statins, Ezetimibe ( Zetia), Bempedoic acid( Nexletol ),PCSK9 inhibitors such as Alirocumab(praluent), Evolocumab ( Repatha), and Inclisiran (Lequivo )- these are much more effective in improving apo B level.

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