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All About Cholesterol

What Is Cholesterol?

To understand high blood cholesterol, it is important to know more about cholesterol. Cholesterol is a waxy, fat-like substance that is found in all cells of the body. Your body needs some cholesterol to work the right way and makes all the cholesterol you need.

Cholesterol is also found in some of the foods you eat.

You use cholesterol to make hormones, Vitamin D, and substances that help you digest foods.

Blood is watery and cholesterol is fatty. Just like oil and water, the two do not mix. So, in order to travel in the bloodstream, cholesterol is carried in small packages called lipoproteins (lip-o-PRO-teins). The small packages are made of fat (lipid) on the inside and proteins on the outside. Two kinds of lipoproteins carry cholesterol throughout your body. It is important to have healthy levels of both:

LDL (low density lipoprotein) cholesterol is sometimes called "bad" cholesterol.

High LDL cholesterol leads to a buildup of cholesterol in arteries. The higher the LDL level in your blood, the greater chance you have for getting heart disease.

HDL (high density lipoprotein) cholesterol is sometimes called "good" cholesterol.

HDL carries cholesterol from other parts of your body back to your liver. The liver removes the cholesterol from your body. The higher your HDL cholesterol level, the lower your chance of getting heart disease.

What is a lipid profile?

The lipid profile is a group of tests that are often ordered together to determine risk of coronary heart disease. The tests that make up a lipid profile are tests that have been shown to be good indicators of whether someone is likely to have a heart attack or stroke caused by blockage of blood vessels (hardening of the arteries)

What tests are included in a lipid profile?

The lipid profile includes total cholesterol, HDL-cholesterol (often called good cholesterol), LDL-cholesterol (often called bad cholesterol), and triglycerides.

Sometimes the report will include additional calculated values such as HDL/Cholesterol ratio or a risk score based on lipid profile results, age, sex, and other risk factors.

How is a lipid profile used?

The lipid profile is used to guide physicians in deciding how a person at risk should be treated. The results of the lipid profile are considered along with other known risk factors of heart disease to develop a plan of treatment and follow-up.

What Is High Blood Cholesterol?

Too much cholesterol (ko-LES-ter-ol) in the blood, or high blood cholesterol, can be serious. People with high blood cholesterol have a greater chance of getting heart disease. High blood cholesterol itself does not cause symptoms, so many people are unaware that their cholesterol level is too high.

Other Names for High Blood Cholesterol

Hypercholesterolemia
Hyperlipidemia.

What Causes High Blood Cholesterol?

A variety of things can affect the cholesterol levels in your blood. Some of these things you can control and others you cannot.

You can control:

What you eat. Certain foods have types of fat that raise your cholesterol level.

Saturated fat raises your LDL cholesterol level more than anything else in your diet.

Trans fatty acids (trans fats) are made when vegetable oil is "hydrogenated" to harden it. Trans fatty acids also raise cholesterol levels.

Cholesterol is found in foods that come from animal sources, for example, egg yolks, meat, and cheese.

Your weight. Being overweight tends to increase your LDL level, lower your HDL level, and increase your total cholesterol level.

Your activity. Lack of regular exercise can lead to weight gain and raise your LDL cholesterol level. Regular exercise can help you lose weight and lower your LDL level. It can also help you raise your HDL level.

You cannot control:

Heredity. High blood cholesterol can run in families. An inherited genetic condition (familial hypercholesterolemia) results in very high LDL cholesterol levels. It begins at birth, and results in a heart attack at an early age.

Age and sex. Starting at puberty, men have lower levels of HDL than women. As women and men get older, their LDL cholesterol levels rise. Younger women have lower LDL cholesterol levels than men, but after age 55 they have higher levels than men.

What Are the Signs and Symptoms of High Blood Cholesterol?

There are usually no signs or symptoms of high blood cholesterol. Many people don't know that their cholesterol level is too high.

Everyone age 20 and older should have their cholesterol levels checked at least once every 5 years. You and your doctor can discuss how often you should be tested.

How is High Blood Cholesterol Diagnosed?

High blood cholesterol is diagnosed by checking levels of cholesterol in your blood. It is best to have a blood test called a lipid profile to measure your cholesterol levels. Most people will need to "fast" (not eat or drink anything) for 9 to 12 hours before taking the test.

The lipoprotein profile will give information about your:

- Total cholesterol
- LDL (bad) cholesterol: the main source of cholesterol buildup and blockage in the arteries
- HDL (good) cholesterol: the good cholesterol that helps keep cholesterol from building up in arteries
- Triglycerides: another form of fat in your blood.

If it is not possible to get a lipid profile done, knowing your total cholesterol and HDL cholesterol can give you a general idea about your cholesterol levels. Testing for total and HDL cholesterol does not require fasting. If your total cholesterol is 200 mg/dL or more, or if your HDL is less than 40 mg/dL, you will need to have a lipoprotein profile done.

Cholesterol levels are measured in milligrams (mg) of cholesterol per deciliter (dL) of blood. See how your cholesterol numbers compare to the tables below

Total Cholesterol Level	Total Cholesterol Category
Less than 200 mg/dL	Desirable
200-239 mg/dL	Borderline high

240 mg/dL and above	High
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LDL Cholesterol Level	LDL Cholesterol Category
Less than 100 mg/dL	Optimal
100-129 mg/dL	Near optimal/above optimal
130-159 mg/dL and above	Borderline high
160-189 mg/dL	High
190 mg/dL and above	Very high

HDL Cholesterol Level	HDL Cholesterol Category
Less than 40 mg/dL	A major risk factor for heart disease.
40 - 59 mg/dL	The higher, the better.
60 mg/dL and above	Considered protective against heart disease.

Triglycerides can also raise your risk for heart disease. Levels that are borderline high (150-199 mg/dL) or high (200 mg/dL or more) may need treatment. Things that can increase triglycerides include:

- Over weight
- Physical inactivity
- Cigarette smoking
- Excessive alcohol use
- Very high carbohydrate diet
- Certain diseases and drugs
- Genetic disorders.

How is High Blood Cholesterol Treated?

The main goal of cholesterol-lowering treatment is to lower your LDL level enough to reduce your risk of having a heart attack or other diseases caused by hardening of the arteries. In general, the higher your LDL level and the more risk factors you have, the greater your chances of developing heart disease or having a heart attack. (A risk factor is a condition that increases your chance of getting a disease.) Some people are at high risk for heart attack because they already have heart disease. Other people are at high risk for developing heart disease because they have diabetes or a combination of risk factors for heart disease.

In conclusion

Too much cholesterol in the blood is called high blood cholesterol or hypercholesterolemia.

High blood cholesterol increases the chance of having a heart attack or some other sign of heart disease like chest pain (angina).

Cholesterol lowering is important for everyone-young, middle-aged, and older adults, and both men and women.

Cholesterol is a fat-like substance that is made in your body. Cholesterol is also in some foods that you eat. Your body needs some cholesterol to work the right way. Your body makes all the cholesterol it needs.

Eating too much saturated fat and cholesterol raises the level of cholesterol in your blood.

Too much cholesterol in your blood can build up in the walls of arteries. This is called plaque.

There are no signs or symptoms of high blood cholesterol. Many people don't know that their cholesterol level is too high.

High blood cholesterol is diagnosed by checking cholesterol levels in your blood.

A blood test called a lipoprotein profile measures the cholesterol levels in your blood and is the recommended test.

It is important that everyone age 20 and older get their cholesterol checked at least once every 5 years.

Many people are able to lower their cholesterol levels by eating a low saturated fat and low cholesterol diet, exercising, and losing weight if needed.

Some people will need to take medicines prescribed by their doctor to lower their cholesterol in addition to eating a low saturated fat diet, losing weight if needed, and exercising.

Common Questions

1. I had a screening test for cholesterol. It was less than 200 mg/dL (5.18 mmol/L). Do I need a lipid profile?

If your total cholesterol is below 200 (5.18 mmol/L) and you have no family history of heart disease or other risk factors a full lipid profile is probably not necessary. However, an HDL-cholesterol measurement would be advisable to assure that you do not have a low HDL. Many screening programs now offer both cholesterol and HDL. If total cholesterol is below 200 (5.18 mmol/L) and HDL is above 40 (1.04 mmol/L), a lipid profile is not recommended.

2. How often do I need a lipid profile test?

Recommendations are for healthy individuals with no other risks of heart disease to be screened for cholesterol and HDL every five years. You do not need to have a full lipid profile. However, if you have other risk factors or have had a high cholesterol in the past, you should be tested more regularly and you should have a full lipid profile.

3. My lipid profile results came back with high triglycerides and no LDL-cholesterol. Why?

In most screening lipid profiles, LDL-cholesterol is calculated from the other lipid measurements. However, the calculation is not valid if triglycerides are over 400 mg/dL (4.52 mmol/L). To determine LDL-cholesterol when triglycerides are over 400 mg/dL (4.52 mmol/L) requires special testing techniques such as a direct LDL test or a lipid ultracentrifugation test (sometimes called a beta-quantification test).

4. What is VLDL?

Very Low Density Lipoprotein (VLDL) is one of three major lipoprotein particles. The other two are high density lipoprotein (HDL) and low density lipoprotein (LDL). Each one of these particles contains a mixture of cholesterol, protein, and triglyceride, but in varying amounts unique to each type of particle. LDL contains the highest amount of cholesterol. HDL contains the highest amount of protein. VLDL contains the highest amount of triglyceride. Since VLDL contains most of the circulating triglyceride and since the compositions of the different particles are relatively constant, it is possible to estimate the amount of VLDL cholesterol by dividing the triglyceride value (in mg/dL) by 5. At present, there is no simple, direct way of measuring VLDL-cholesterol, so the estimate calculated from triglyceride is used in most settings. This calculation is not valid when the triglyceride is greater than 400 mg/dl (see question 3 above).

**Get evaluated for Cholesterol today!
Call +91 22 66949876 for more details**