



Education

High Cholesterol (Hypercholesterolemia)

What is hypercholesterolemia?

Hypercholesterolemia is a condition in which the level of cholesterol in your blood is high. When you have too much cholesterol, deposits of fat in the blood called plaque form inside blood vessel walls. The blood vessel walls thicken and become narrower (a condition called atherosclerosis). This change reduces blood flow through the blood vessels, increasing your risk of heart disease and possibly leading to a heart attack or stroke.

Cholesterol is a fatty substance, also called a lipid. Your body needs small amounts of this substance to make and maintain nerve cells and to produce hormones. Most of the cholesterol in your blood is made by your liver from the fats, carbohydrates, and proteins you eat. You also get cholesterol by eating animal products such as meat, eggs, and dairy products.

The two most important components of cholesterol measurements are LDL (low-density lipoprotein) and HDL (high-density lipoprotein). LDL and HDL carry cholesterol through your blood. LDLs carry a lot of cholesterol, leave behind fatty deposits on your artery walls, and contribute to heart disease. HDLs do the opposite: They clean the artery walls and remove extra cholesterol from the body, thus lowering the risk of heart disease. LDL is called "bad" cholesterol. (You can think of "L" for "lousy" cholesterol.) HDL is called "good" cholesterol (think of "H" for "healthy" cholesterol). It is good to have low levels of LDL and high levels of HDL.

How does high cholesterol occur?

The main cause of high cholesterol is eating foods that are high in saturated fat or cholesterol. Other possible causes are:

- an inherited problem with the way your body processes cholesterol
- a disease that raises the cholesterol level (for example, diabetes, kidney disease, liver disease, or hypothyroidism).

What are the symptoms?

High cholesterol is a silent disease. There are no symptoms until problems have already developed, such as the chest pain of a heart attack or calf pain with walking, caused by narrowed or blocked arteries to the legs.

How is it diagnosed?

Your health care provider may give you a physical exam. Your provider may ask about your diet, exercise, smoking habits, and diseases and health problems in your family.

You will have blood tests to check your cholesterol level. These lab tests usually measure your total cholesterol level as well as the levels of HDL, LDL, and triglycerides. (Triglycerides are another type of fat in the blood.)

When you get your cholesterol checked, your provider will give you a number for your total cholesterol level. A total cholesterol less than 200 is good, 200 to 239 is borderline high, and 240 or above is high.

HDL levels of 60 mg/dL or more help to lower your risk for heart disease. An HDL less than 40 mg/dL is a major risk factor for heart disease.

Your provider will determine if you have other risk factors for heart disease to determine if your overall risk is low, moderate, or high. This will help you know what your LDL goal should be.

- If you have a low risk of heart disease, the recommended level of LDL is less than 160.
- If you have a moderate risk for heart disease, your goal is less than 130.
- If you have heart disease, diabetes, or a high risk of heart disease, your LDL should be below 100.

Generally, you want your triglyceride level to be 150 mg/dL or less.

How is it treated?

The goal of most cholesterol treatment is to decrease the LDL in your blood and to raise the HDL. For every 1% decrease in the total cholesterol level, your risk of heart disease is reduced 2%.

A diet high in fiber and low in saturated fat and cholesterol can help to lower cholesterol levels.

For more information on changes you can make in your diet, see

You will need to lose weight if you are overweight. You should also exercise as recommended by your health care provider.

If diet and exercise are not enough to reduce your cholesterol level, your health care provider may prescribe medicine.

- Statins are a class of drugs that lower blood cholesterol. Statins that are commonly used are atorvastatin, fluvastatin, lovastatin, pravastatin, and simvastatin.
- Ezetimibe (Zetia) is a new drug recently approved for lowering cholesterol. It is unique in that it decreases absorption of cholesterol from the intestines. If needed, it can be used with a statin to lower cholesterol.
- Other drugs used to lower blood cholesterol include cholestyramine, nicotinic acid (niacin), and gemfibrozil.

Each medicine has slightly different effects on the different types of cholesterol. Your provider will choose the best medicines for you. In some cases it may take some time to find the right one. More than 1 medicine may be needed to control your cholesterol.

How can I take care of myself and prevent high cholesterol?

It is important to eat a low-cholesterol diet if you have high cholesterol.

In addition to being careful about your diet, you can help lower your cholesterol by the following:

- Get more exercise, especially aerobic exercise. Exercise lowers your total cholesterol and your "bad" LDL cholesterol. It also raises your "good" HDL cholesterol. Ask your health care provider about an exercise prescription. Start slowly to avoid injury. Exercise also helps improve circulation, lower blood pressure, lower blood sugar, decrease body fat, and increase muscle tone.
- Don't smoke. Smoking lowers your HDL.
- Maintain a normal weight.
- Have your cholesterol levels and weight checked regularly by your provider. At first it may need to be checked every 3 to 6 months until it is staying in the normal range. Then you may need to check it just once a year.

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