

# High Cholesterol

## UNDERSTAND the problem

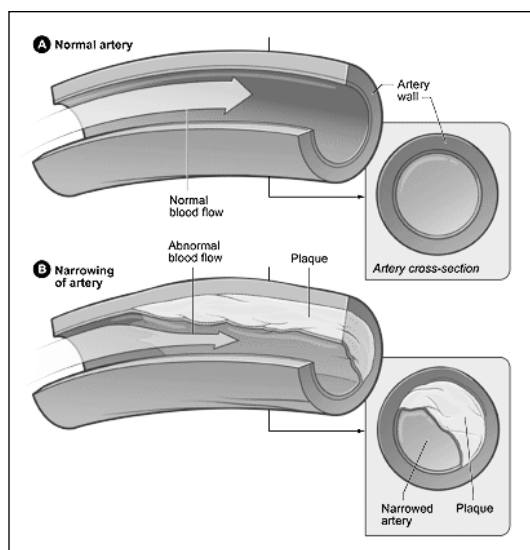
To understand high blood cholesterol, it is important to know more about cholesterol in general. Cholesterol is a waxy, fat-like substance that is found in all cells of the body. Your body needs some cholesterol to work the right way. Cholesterol is used to make hormones, vitamin D, and substances that help you digest foods. Your body makes all the cholesterol it needs, but cholesterol is also found in some of the foods you eat.

Two kinds of lipoproteins carry cholesterol throughout your body. It is important to have healthy levels of both:

- **Low-density lipoprotein (LDL) 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 of getting heart disease.
- **High-density lipoprotein (HDL) 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.

Triglycerides can also raise your risk for heart disease. If you have levels that are borderline high (150–199 mg/dL) or high (200 mg/dL or more), you may need treatment.

Cholesterol can build up in the walls of your arteries (blood vessels that carry blood from the heart to other parts of the body). This buildup of cholesterol is called plaque. Over time, plaque can cause narrowing of the arteries. This is called atherosclerosis, or hardening of the arteries.



## WHO is at risk

There are usually no signs or symptoms of high blood cholesterol. Many people don't know that their cholesterol level is too high. Everyone 20 years of age and older should have their cholesterol levels checked at least once every 5 years. Individuals with greater risk for heart disease may be tested more frequently. You and your doctor can discuss how often you should be tested.

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 level more than anything else in your diet.
- **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, which could 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.
- **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, women have higher levels than men.

## WHAT cholesterol levels mean

High blood cholesterol is diagnosed by checking levels of cholesterol in your blood. It is best to have a blood test called a lipoprotein profile to measure your cholesterol levels. You will need to fast for 9 to 12 hours before taking the test.

The lipoprotein profile will give information about your LDL, HDL, and triglyceride levels as well as your total cholesterol. If it is not possible to get a lipoprotein 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.

See how your cholesterol numbers compare to the tables below.

### Total Cholesterol Level

Less than 200 mg/dL  
200–239 mg/dL  
240 mg/dL and above

### Total Cholesterol Category

Desirable  
Borderline high  
High

### LDL Cholesterol Level

Less than 100 mg/dL  
100–129 mg/dL  
130–159 mg/dL  
160–189 mg/dL  
190 mg/dL and above

### LDL Cholesterol Category

Optimal  
Near optimal/above optimal  
Borderline high  
High  
Very high

### HDL Cholesterol Level

Less than 40 mg/dL  
40–59 mg/dL  
60 mg/dL and above

### HDL Cholesterol Category

A major risk factor for heart disease  
The higher, the better  
Considered protective against heart disease

## HOW to respond

Too much cholesterol 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 on its own does not cause symptoms, so many people are unaware that their cholesterol level is too high.

The main goal of cholesterol-lowering treatment is to lower your LDL level enough to reduce your risk for having a heart attack or 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. Check the list to see how many of the risk factors you have. These are the risk factors that affect your LDL goal:

- Cigarette smoking
- High blood pressure (140/90 mg/dL or higher), or being on blood pressure medicine
- Low HDL cholesterol (less than 40 mg/dL)
- Family history of early heart disease (heart disease in father or brother before age 55; heart disease in mother or sister before age 65)
- Age (men 45 years or older; women 55 years or older)

There are two main ways to lower your cholesterol in order to lower your risk:

- Therapeutic Lifestyle Changes (TLC)—includes a cholesterol-lowering diet (called the TLC Diet), physical activity, and weight management. TLC is for anyone whose LDL is above goal.
- Drug Treatment—if cholesterol-lowering drugs are needed, they are used together with TLC treatment to help lower your LDL.

### Lowering Cholesterol With TLC

TLC is a set of lifestyle changes you can make to help lower your LDL cholesterol. The main parts of TLC are:

- The TLC Diet, which recommends:
  - Limiting the amount of saturated fat, *trans* fat, and cholesterol you eat.
  - Eating only enough calories to achieve or maintain a healthy weight.
  - Increasing the soluble fiber in your diet. For example, oatmeal, kidney beans, and apples are good sources of soluble fiber.
  - Adding cholesterol-lowering foods, such as margarines that contain plant sterol or stanol esters that can help lower cholesterol.
- Weight management: Losing weight if you are overweight can help lower LDL. Weight management is especially important for those with a group of risk factors that includes raised triglyceride and/or reduced HDL levels and being overweight with a large waist measurement (40 inches or more for men and 35 inches or more for women). This is called metabolic syndrome, and it raises your risk for getting heart disease.

- Physical activity: Regular physical activity is recommended for everyone. It can help raise HDL levels and lower LDL levels. Aim for at least 30 minutes of moderate-intensity activity, such as brisk walking, on most, and preferably all, days of the week.

### Cholesterol-Lowering Medicines

Along with suggesting that you change the way you eat and exercise regularly, your doctor may prescribe medicines to help lower your cholesterol. Even if you begin drug treatment, you will need to continue TLC. TLC lowers your risk not only by lowering LDL but also in other ways and helps keep down the dose of LDL-lowering medication you have to take. Drug treatment controls but does not “cure” high blood cholesterol. Therefore, you must continue taking your medicine to keep your cholesterol level in the recommended range.

The five major types of cholesterol-lowering medicines are:

- Statins
  - Very effective in lowering LDL cholesterol levels
  - Safe for most people
  - Rare side effects to watch for are muscle and liver problems
- Bile-Acid Sequestrants
  - Help lower LDL cholesterol levels
  - Sometimes prescribed with statins
  - Not usually prescribed as the only medicine to lower cholesterol
- Nicotinic Acid
  - Lowers LDL cholesterol and triglycerides, and raises HDL cholesterol
  - Should only be used under a doctor's supervision
- Fibrates
  - Lower triglycerides
  - May increase HDL cholesterol levels
  - When used with a statin, may increase the chance of muscle problems
- Ezetimibe
  - Lowers LDL cholesterol
  - Acts within the intestine to block cholesterol absorption

When you are under treatment, you will be checked regularly to make sure your cholesterol level is controlled and to identify other health problems early.

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*This handout is provided to you by CME Resource and your healthcare provider. For more information, please consult your physician.*