



Education

Health Maintenance: Controlling Cholesterol

What is cholesterol?

Cholesterol is a fatty substance. It has both good and bad effects on the body. Your body uses cholesterol to make hormones and to build and maintain nerve cells. However, when your body has too much cholesterol, deposits of fat called plaque form inside blood vessel walls. The blood vessel walls thicken and the vessels become narrower (a condition called atherosclerosis). This change in the blood vessels reduces blood flow through the blood vessels, possibly leading to heart attacks or strokes.

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.

It is important to find out what your cholesterol numbers are because lowering cholesterol levels that are too high lessens your risk for developing heart disease. It reduces the chance of a heart attack or death from heart disease, even if you already have heart disease.

How is cholesterol measured?

When you get your cholesterol checked, your health care provider will give you a number for your total cholesterol level. You can use the chart below to see if your total cholesterol is high.

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Total Cholesterol Level (mg/dL)  
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less than 200	good
200 to 239	borderline high
240 or above	high

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When your cholesterol is measured and found to be high, your health care provider may also check the amount of LDL (low-density lipoprotein) and HDL (high-density lipoprotein) in your blood. 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. HDLs clean the artery walls and remove extra cholesterol from the body, thus lowering the risk of heart disease. LDL cholesterol is called bad cholesterol. (You can think of "L" for "lousy" cholesterol.) HDL cholesterol is called good cholesterol (think of "H" for "healthy" cholesterol). It is good to have low levels of LDL and high levels of HDL.

Because **HDL cholesterol** protects against heart disease, higher numbers are better. A level equal to or less than 40 mg/dL is low and is considered a major risk factor because it increases your risk for developing heart disease. HDL levels of 60 mg/dL or more help to lower your risk for heart disease.

The level of **LDL cholesterol** that is healthy for you depends on your risk of heart disease and heart attack. In general, the higher your LDL level and the more risk factors you have for heart disease, the greater your chances of developing heart disease or having a heart attack. These are the recommended goals for LDL, according to risk level:

- The goal is less than 160 mg/dL if your risk of heart disease is low.
 - The goal is less than 130 mg/dL if you have a moderate risk.
 - The goal is less than 100 mg/dL if you have a high risk of heart disease or you already have heart disease or diabetes.
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In addition to high levels of total cholesterol and LDL, major risks for heart disease include:

- diabetes
- cigarette smoking
- high blood pressure (140/90 mmHg or higher or you are taking blood pressure medicine)
- low HDL cholesterol (less than 40 mg/dL)
- family history of early heart disease (father or brother diagnosed with heart disease before age 55, or mother or sister diagnosed before age 65)
- your age: 45 or older for men and 55 or older for women.

If you have diabetes, your risk of heart disease is high. If you do not have diabetes but you have 2 or more of the other risk factors in this list, your risk is moderate to high. Based on your personal and family history, your health care provider can help you calculate your risk level.

How can I control my cholesterol level?

Eating right, exercising, and not smoking can often control cholesterol levels. If you have a high risk for heart disease, your health care provider may prescribe cholesterol-lowering medicine as well as changes in lifestyle.

Follow these diet guidelines to help control your cholesterol:

- Limit the cholesterol in your diet to less than 300 mg per day. If you have heart disease, limit cholesterol to less than 200 mg per day.
- Be careful about the amounts and types of fat that you eat. Fats should contribute no more than 20 to 35% of your daily calories. Less than 7 to 10% of your calories should come from saturated fat. Some kinds of fats are better than others. Most of your dietary fat should be from polyunsaturated and monounsaturated fats. These 2 types of fats are healthier than saturated fats. Polyunsaturated fats are found in fish and some vegetable oils. Monounsaturated fats are found in olive oil, canola oil, and avocados. Both types of these healthier fats are also found in many nuts and legumes. Saturated fat raises your blood cholesterol because it makes it hard for the body to clear the cholesterol away. Saturated fat is found in different amounts in almost all foods. Butter, some oils, meat, and poultry fat contain a lot of saturated fat. Trans fatty acids, often called trans fats, are another type of fat in some foods. Trans fats tend to raise your bad LDL cholesterol and lower your good HDL cholesterol. Trans fats naturally occur in some foods, mostly in meat and dairy products. But food makers can create trans fats when they are preparing food for grocery stores. This is usually done by adding hydrogen to fats. If the ingredients of a food product include the words "partially hydrogenated" (usually referring to oils, such as soybean oil and others), the product is likely to contain trans fats. Try to eat as little trans fat as possible. As of January 2006, nutrition labels must list trans fats if the food contains them. Check the nutrition bar on the side of the package.
- Adjust the amount of calories you eat and exercise regularly to maintain your recommended body weight.

To control the cholesterol and types and amounts of fat you eat:

- Check food labels for fat and cholesterol content. Choose the foods with less fat per serving.
 - Limit the amount of butter and margarine you eat.
 - Use sunflower, safflower, soybean, canola, corn, or olive oil. Avoid tropical oils such as palm or coconut oil. Also avoid oils that have been hydrogenated or partially hydrogenated.
 - Use salad dressings and margarine made with polyunsaturated and monounsaturated fats.
 - Use egg whites or egg substitutes rather than whole eggs.
 - Replace whole-milk dairy products with nonfat or low-fat milk, cheese, spreads, and yogurt.
 - Eat skinless chicken, turkey, fish, and meatless entrees more often than red meat.
 - Choose lean cuts of meat and trim off all visible fat. Keep portion sizes moderate.
 - Avoid fatty desserts such as ice cream, cream-filled cakes, and cheesecakes. Choose fresh fruits, nonfat frozen yogurt, Popsicles, etc.
 - Reduce the amount of fried foods, vending machine food, and fast food you eat.
 - Eat fruits and vegetables (especially fresh fruits and leafy vegetables), beans, and whole grains daily. The fiber in these foods helps lower cholesterol.
 - Eat 4 to 5 servings of nuts a week. Examples of nuts that can be a part of a healthy diet are walnuts, almonds, hazelnuts, peanuts, pecans, and pistachio nuts.
 - Look for low-fat or nonfat varieties of the foods you like to eat, or look for substitutes.
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Exercise goes hand-in-hand with a healthy diet for controlling cholesterol. Exercise helps because it:

- Keeps your weight down.
- Decreases your total cholesterol level.
- Decreases your LDL (bad cholesterol).
- Increases your HDL (good cholesterol).

A good exercise program includes aerobic exercise. Aerobic exercise is any activity that keeps your heart rate up (such as swimming, jogging, walking, and bicycling). You should get at least 30 minutes of moderate aerobic exercise most days of the week. Moderate aerobic exercise is generally defined as requiring the energy it takes to walk 2 miles in 30 minutes. You may need to exercise 60 minutes a day to prevent weight gain and 90 minutes a day to lose weight. If you haven't been exercising, ask your health care provider for an exercise prescription and start your new exercise program slowly.

Do not smoke. Smoking increases your risk of heart disease because it lowers HDL levels.

High cholesterol may run in families. Know your family history and discuss it with your health care provider.

In summary, to control your cholesterol level:

- Eat healthy.
- Get regular exercise.
- Don't smoke.
- Have your cholesterol levels checked as often as your provider recommends.

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