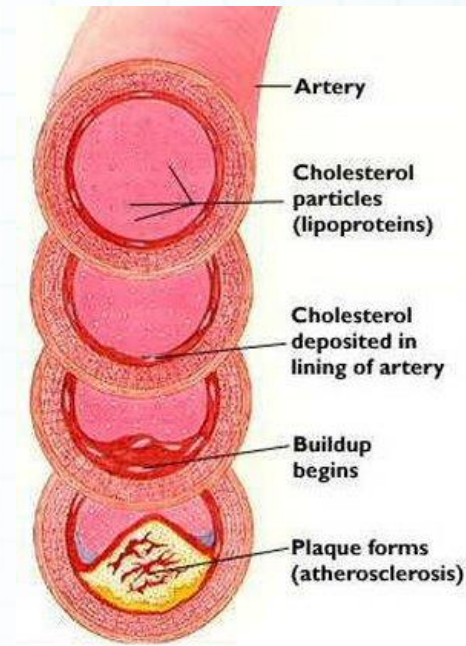


# Cholesterol: An Overview



**C**holesterol is a waxy, fat-like substance that occurs naturally in all parts of the body. Your body needs some cholesterol to work properly. But if you have too much in your blood, it can combine with other substances in the blood and stick to the walls of your arteries. This is called plaque. Plaque can narrow your arteries or even block them.

High levels of cholesterol in the blood can increase your risk of heart disease. Your cholesterol levels tend to rise as you get older. There are usually no signs or symptoms that you have high blood cholesterol, but it can be detected with a blood test. You are likely to have high cholesterol if members of your family have it, if you are overweight or if you eat a lot of fatty foods.

You can lower your cholesterol by exercising more and eating more fruits and vegetables. You also may need

to take medicine to lower your cholesterol.

## Causes of Cholesterol

It may surprise you to know that cholesterol itself isn't bad. In fact, cholesterol is just one of the many substances created and used by our bodies to keep us healthy.

Cholesterol is a waxy substance that comes from two sources: your body and food. Your body, and especially your liver, makes all the cholesterol you need and circulates it through the blood. But cholesterol is also found in foods from animal sources, such as meat, poultry and full-fat dairy products. Your liver produces more cholesterol when you eat a diet high in saturated and trans fats.

Excess cholesterol can form plaque between layers of artery walls, making it harder for your heart to circulate blood. Plaque can break open and cause blood clots. If a clot blocks an artery that feeds the brain, it causes a stroke. If it blocks an artery that feeds the heart, it causes a heart attack. View an animation of cholesterol

There are two types of cholesterol: "good" and "bad." Too much of one type — or not enough of another — can put you at risk for coronary heart disease, heart attack or stroke. It's important to know the levels of cholesterol in your blood so that you and your doctor can determine the best strategy to lower your risk.

Making healthy eating choices and increasing exercise are important first steps in improving your cholesterol. For some people, cholesterol-lowering medication may also be needed to reduce the risk for heart attack and stroke. Use the information provided here to start a conversation with your doctor about how cholesterol affects your heart attack and stroke risk and what you can do to lower your risk.

## Symptoms/Prevention of Cholesterol

High cholesterol increases your risk of heart disease and heart attacks. You can reduce cholesterol with medications, but if you'd rather make lifestyle changes to reduce cholesterol, you can try these five healthy lifestyle changes. If you're already taking medications, these changes can also improve their cholesterol-lowering effect.

Carrying some extra pounds — even just a few — contributes to high cholesterol. Losing as little as 5 to 10 percent of your body weight can help significantly reduce cholesterol levels. Start by taking an honest, thorough look at your eating habits and daily routine. Consider your challenges to weight loss and ways to overcome them.

If you eat when you're bored or frustrated, take a walk instead. If you pick up fast food for lunch every day, pack something healthier from home. If you're sitting in front of the television, try munching on carrot sticks instead of potato chips as you watch. Take time and enjoy rather than "devouring" your food. Don't eat mindlessly.

And look for ways to incorporate more activity into your daily routine, such as using the stairs instead of taking the elevator. Take stock of what you currently eat and your physical activity level and slowly work in changes.

Even if you have years of unhealthy eating under your belt, making a few changes in your diet can reduce cholesterol and improve your heart health.

- Choose healthier fats. Saturated fats, found in red meat and dairy products, raise your total cholesterol and low-density lipoprotein (LDL) cholesterol, the "bad" cholesterol. As a general rule, you should get less than 7 percent of your daily calories from saturated fat. Instead, choose leaner cuts of meat, low-fat dairy and monounsaturated fats — found in olive, peanut and canola oils — for a healthier option.
- Eliminate trans fats. Trans fat can be found in fried foods and many commercial baked products, such as cookies, crackers and snack cakes. But don't rely on packages that are labeled "trans fat-free." In the United States, if a food contains less than 0.5 grams of trans fat per serving, it can be labeled "trans fat-free." Even though those amounts seem small, they can add up quickly if you eat a lot of foods that have a small amount of trans fat in them. Instead, read the ingredients list. You can tell if a food has trans fat in it if it contains partially hydrogenated oil.
- Limit the cholesterol in your food. Aim for no more than 300 milligrams (mg) of cholesterol a day — less than 200 mg if you have heart disease or diabetes. The most concentrated sources of cholesterol include organ meats, egg yolks and whole milk products. Use lean cuts of meat, egg substitutes and skim milk instead.
- Select whole grains. Various nutrients found in whole grains promote heart health. Choose whole-grain breads, whole-wheat pasta, whole-wheat flour and brown rice.
- Stock up on fruits and vegetables. Fruits and vegetables are rich in dietary fiber, which can help lower cholesterol. Snack on seasonal fruits. Experiment with veggie-based casseroles, soups and stir-fries. If you prefer dried fruit to fresh fruit, limit yourself to no more than a handful (about an ounce or two). Dried fruit tends to have more calories than does fresh fruit.
- Eat foods rich in omega-3 fatty acids. Omega-3 fatty acids can help lower your LDL ("bad") cholesterol. Some types of fish — such as salmon, mackerel and herring —

are rich in omega-3 fatty acids. Other good sources of omega-3 fatty acids include walnuts, almonds and ground flaxseeds.

Whether you're overweight or not, exercise can reduce cholesterol. Better yet, moderate physical activity can help raise high-density lipoprotein (HDL) cholesterol, the "good" cholesterol. With your doctor's OK, work up to at least 30 minutes of exercise a day. Remember that adding physical activity, even in 10-minute intervals several times a day, can help you begin to lose weight. Just be sure that you can keep up the changes you decide to make. Consider:

- Taking a brisk daily walk during your lunch hour
- Riding your bike to work
- Swimming laps
- Playing a favorite sport

To stay motivated, find an exercise buddy or join an exercise group. And remember, any activity is helpful. Even taking the stairs instead of the elevator or doing a few situps while watching television can make a difference.

If you smoke, stop. Quitting may improve your HDL cholesterol level. And the benefits don't end there. Just 20 minutes after quitting, your blood pressure decreases. Within 24 hours, your risk of a heart attack decreases. Within one year, your risk of heart disease is half that of a smoker. Within 15 years, your risk of heart disease is similar to someone who never smoked.

Moderate use of alcohol has been linked with higher levels of HDL cholesterol — but the benefits aren't strong enough to recommend alcohol for anyone who doesn't already drink. If you choose to drink alcohol, do so in moderation. For healthy adults, that means up to one drink a day for women of all ages and men older than age 65, and up to two drinks a day for men age 65 and younger. Drinking too much alcohol can lead to serious health problems, including high blood pressure, heart failure and stroke.

Sometimes healthy lifestyle changes aren't enough to lower cholesterol levels. Make sure the changes you choose to make are ones that you can continue, and don't be disappointed if you don't see results immediately. If your doctor recommends medication to help lower your cholesterol, take it as prescribed, but continue your lifestyle changes.

## Diagnosis of Cholesterol

Who needs to get their cholesterol checked?

- All men age 35 and older
- Men ages 20 to 35 who have heart disease or risk factors for heart disease
- Women age 20 and older who have heart disease or risk factors for heart disease

Talk to your doctor or nurse about your risk factors for heart disease. Ask if you need to get your cholesterol checked.

What are the risk factors for heart disease?

Risk factors for heart disease include:

- High blood pressure
- A family history of early heart disease
- Hardening of the arteries (called atherosclerosis)
- Smoking

- Diabetes
- Being overweight or obese

## **Treatment of Cholesterol**

Cholesterol plays a major role in a person's heart health. High blood cholesterol is a major risk factor for coronary heart disease and stroke. That's why it's important to know your cholesterol levels. You should also learn about other risk factors for heart disease and stroke.

A cholesterol screening measures your level of high-density lipoprotein (HDL) cholesterol, low-density lipoprotein (LDL) cholesterol and triglycerides. A small sample of blood will be drawn from your arm. If your doctor orders other tests to be run at the same time as your cholesterol test, all the samples are usually taken at the same time. Your blood sample is then analyzed in a laboratory.

Your doctor will tell you if you should fast (avoid consuming food, beverages and medications, usually for nine to 12 hours) before your blood test. If you aren't fasting when the blood sample is drawn, only the values for total cholesterol and HDL cholesterol will be usable. That's because the amount of LDL (bad) cholesterol level and triglycerides can be affected by what you've recently consumed.

Your test report will show your cholesterol level in milligrams per deciliter of blood (mg/dL). Your doctor will interpret your cholesterol numbers based on other risk factors such as age, family history, smoking and high blood pressure.

## **What do your cholesterol levels mean?**

If you are age 20 or older and have not been diagnosed with cardiovascular disease, the American Heart Association recommends having your cholesterol levels checked every four to six years as part of a cardiovascular risk assessment.

You may need to have your cholesterol and other risk factors assessed more often if your risk is elevated.

Your healthcare provider will talk with you about what your results mean and discuss appropriate treatment options based on your cardiovascular risk and overall health.

Where should I have my cholesterol checked?

It's best to have your primary care doctor run your cholesterol test. Other risk factors such as your age, family history, smoking history and blood pressure must be considered when interpreting your results and your primary care doctor is most likely to have all that information. Once you know your numbers, your doctor can recommend a treatment and prevention plan, as well as follow-up testing.

If you have your cholesterol checked at public screenings, make sure a reputable company does the screening. Remember that your cholesterol level is just part of your overall cardiovascular risk profile, and your other risk factors must be considered. You should share the screening results with your healthcare professional so your tests can be properly interpreted, and an appropriate treatment and prevention plan developed.

The American Heart Association hasn't taken a position on cholesterol home testing devices. Several devices are on the market. Some measure only total cholesterol. Others

measure total cholesterol and HDL (good) cholesterol. One measures LDL (bad) cholesterol, HDL cholesterol and triglycerides (blood fats).

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