

## Healthy Steps for Healthy Cholesterol

Cholesterol is a soft, waxy substance found among the lipids (fats) in the bloodstream and in all your body's cells. It's normal to have cholesterol. It's an important part of a healthy body because it's used to form cell membranes, some hormones and serve other needed bodily functions. But too high a level of cholesterol in the blood is a major risk for coronary heart disease, which leads to heart attack. It's also a risk factor for stroke. **Hypercholesterolemia** is the term for high levels of blood cholesterol.

You get cholesterol in two ways. Your body makes some of it, and the rest comes from cholesterol in animal products that you eat, such as meats, poultry, fish, eggs, butter, cheese and whole milk. Food from plants like fruits, vegetables and cereals doesn't have cholesterol. Some foods that don't contain animal products may contain *trans*-fats, which cause your body to make more cholesterol. Foods with saturated fats also cause the body to make more cholesterol.

Cholesterol and other fats can't dissolve in the blood. They have to be transported to and from the cells by special carriers called lipoproteins. There are two kinds that you need to be concerned with. Low-density lipoprotein, or LDL, is known as the "bad" cholesterol. Too much LDL cholesterol can clog your arteries, increasing your risk of heart attack and stroke. High-density lipoprotein, or HDL, is known as the "good" cholesterol. Your body makes HDL cholesterol for your protection. It travels away from your arteries. Studies suggest that high levels of HDL cholesterol reduce your risk of heart attack.

### **Why is LDL cholesterol considered "bad"?**

When too much LDL cholesterol circulates in the blood, it can slowly build up in the walls of the arteries that feed the heart and brain. Together with other substances it can form plaque, a thick, hard deposit that can clog those arteries. This condition is known as **atherosclerosis**. If a clot forms and blocks a narrowed artery, it can cause a heart attack or stroke. The levels of HDL cholesterol and LDL cholesterol in the blood are measured to evaluate the risk of having a heart attack. LDL cholesterol of less than 100 mg/dL is the optimal level. Less than 130 mg/dL is near optimal for most people. A high LDL level (more than 160 mg/dL or 130 mg/dL or above if you have two or more risk factors for cardiovascular disease) reflects an increased risk of heart disease. That's why LDL cholesterol is often called "bad" cholesterol.

### **Why is HDL cholesterol considered "good"?**

About one-third to one-fourth of blood cholesterol is carried by high-density lipoprotein (HDL). HDL cholesterol is known as the "good" cholesterol because a high level of it seems to protect against heart attack. (Low HDL cholesterol levels [less than 40 mg/dL] increase the risk for heart

disease.) Medical experts think that HDL tends to carry cholesterol away from the arteries and back to the liver, where it's passed from the body. Some experts believe that HDL removes excess cholesterol from plaque in arteries, thus slowing the build-up.

### **The triglyceride connection**

Triglyceride is a form of fat. It comes from food and is also made in your body. People with high triglycerides often have a high total cholesterol, a high LDL cholesterol and a low HDL cholesterol level. Many people with heart disease also have high triglyceride levels. Triglyceride levels of less than 150 mg/dL are normal; levels from 150-199 are borderline high. Levels that are borderline high or high (200 mg/dL and above) may need treatment in some people. Doctors need to treat high triglycerides in people who also have high LDL cholesterol levels. People with diabetes or who are obese are also likely to have high triglycerides.

Many people with high triglycerides have underlying diseases or genetic disorders. If this is true for you, the main therapy is to change your lifestyle. This includes controlling your weight, eating foods low in saturated fat and cholesterol, exercising regularly, not smoking and, in some cases, drinking less alcohol. People with high triglycerides may also need to limit their intake of carbohydrates to no more than 45-50 percent of total calories. The reason for this is that carbohydrates raise triglycerides and lower HDL cholesterol. Use products with monounsaturated and polyunsaturated fats.

## **What Are Healthy Levels of Cholesterol?**

### **Your total blood cholesterol level**

Your total blood cholesterol will fall into one of these categories:

**Desirable** - Less than 200 mg/dL

**Borderline high risk** - 200-239 mg/dL

**High risk** - 240 mg/dL and over

Here is some more explanation about each of these categories:

#### **Desirable**

If your total cholesterol is less than 200 mg/dL, your heart attack risk is relatively low, unless you have other risk factors. Even with a low risk, it's still smart to eat foods low in saturated fat and cholesterol, and also get plenty of physical activity. Have your cholesterol levels measured every five years - or more often if you're a man over 45 or a woman over 55.

#### **Borderline high risk**

People whose cholesterol level is from 200 to 239 mg/dL are borderline high risk. About a third of American adults are in this (borderline) group; almost half of adults have total cholesterol levels below 200 mg/dL.

Have your cholesterol and HDL rechecked in one to two years if:

- Your total cholesterol is in this range

- Your HDL is less than 40 mg/dL
- You don't have other risk factors for heart disease

You should also lower your intake of foods high in saturated fat and cholesterol to reduce your blood cholesterol level to below 200 mg/dL. Your doctor may order another blood test to measure your LDL cholesterol. Ask your doctor to discuss your LDL cholesterol with you. Even if your total cholesterol is between 200 and 239 mg/dL, you may not be at high risk for a heart attack. Some people - such as women before menopause and young, active men who have no other risk factors - may have high HDL cholesterol and desirable LDL levels. Ask your doctor to interpret your results. **Everyone's case is different.**

**High risk**

If your total cholesterol level is **240 or more**, it's definitely high. Your risk of heart attack and stroke is greater. In general, people who have a total cholesterol level of 240 mg/dL have twice the risk of heart attack as people whose cholesterol level is 200 mg/dL. You need more tests. Ask your doctor for advice. About 20 percent of the U.S. population has high blood cholesterol levels.

**Your LDL cholesterol level**

Your LDL cholesterol level greatly affects your risk of heart attack and of stroke. The lower your LDL cholesterol, the lower your risk. In fact, it's a better gauge of risk than total blood cholesterol. Your LDL cholesterol will fall into one of these categories:

<b>Optimal</b>	<b>Less than 100 mg/dl</b>
<b>Near Optimal</b>	<b>100 – 129 mg/dl</b>
<b>Borderline High</b>	<b>130 – 159 mg/dl</b>
<b>High</b>	<b>160 – 189 mg/dl</b>
<b>Very High</b>	<b>190 mg/dl and above</b>

The key point to remember is the lower your LDL cholesterol, the lower your risk. Your doctor may prescribe a diet low in saturated fat and cholesterol, regular exercise and a weight management program if you're overweight. If you can't lower your cholesterol with these efforts, medications may also be prescribed to lower your LDL cholesterol.

**Your HDL cholesterol level**

In the average man, HDL cholesterol levels range from 40 to 50 mg/dL. In the average woman, they range from 50 to 60 mg/dL. HDL cholesterol that's less than 40 mg/dL is low. Low HDL cholesterol puts you at high risk for heart disease. Smoking, being overweight and being sedentary can all result in lower HDL cholesterol.

If you have low HDL cholesterol, you can help raise it by:

- Not smoking.
- Losing weight (or maintaining a healthy weight).
- Being physically active for at least 30-60 minutes a day on most or all days of the week.

People with high blood triglycerides usually have lower HDL cholesterol and a higher risk of heart attack and stroke. Progesterone, anabolic steroids and male sex hormones (testosterone) also lower HDL cholesterol levels. Female sex hormones raise HDL cholesterol levels, which is why women as a rule have higher HDL cholesterol levels than men.

There is compelling evidence that the atherosclerotic process begins in childhood and progresses slowly into adulthood. Then it often leads to coronary heart disease, the major cause of death in the United States. Despite substantial success in reducing deaths from coronary heart disease in the past two decades, this disease is still responsible for more than 529,659 deaths annually. About 42 percent of the people discharged from hospitals for coronary heart disease are under 65 years of age. Many of these adults have children who may have coronary heart disease risk factors that need attention.

There is evidence that:

- Atherosclerosis or its precursors begin in young people.
- Elevated cholesterol levels early in life may play a role in the development of adult atherosclerosis.
- Eating patterns and genetics affect blood cholesterol levels and coronary heart disease risk.
- Lowering levels in children and adolescents may be beneficial.
- Cigarette smoking should be discouraged.
- Regular aerobic exercise should be encouraged.
- High blood pressure should be identified and treated.
- Obesity should be avoided or reduced.
- Diabetes mellitus should be diagnosed and treated.

### **Common Misconceptions About Cholesterol**

#### **1. Using margarine instead of butter will help lower my cholesterol.**

Both margarine and butter are high in fat, so use both in moderation. From a dietary perspective, the major factor affecting blood cholesterol is how much fat (particularly saturated fat) is in the food - not the amount of cholesterol. Reducing your intake of saturated fat is key to helping control cholesterol. Most soft or liquid margarines have less saturated fat and so are preferable to the stick forms for a heart-healthy diet. However, eat all fatty foods in moderation.

#### **2. Thin people don't have to worry about high cholesterol.**

Overweight people are more likely to have high cholesterol from eating too many fatty foods, but thin people should also have their cholesterol checked regularly. Often people who don't gain weight easily are less aware of how much fat they eat. Nobody can "eat anything they want" and stay heart healthy. Have your cholesterol checked regularly regardless of your weight, exercise habits and diet.

#### **3. My doctor hasn't said anything about my cholesterol, so I don't have to worry.**

Unfortunately, not all physicians are as proactive about healthy lifestyles as they should be. Your health is your responsibility. Make sure that you have a blood cholesterol test and learn

how to interpret all the numbers, including HDL (“good”) cholesterol, LDL (“bad”) cholesterol and triglyceride levels. If you’re in a high or borderline-high range, discuss options with your physician. You may be able to control the levels by eating a diet lower in saturated fat and cholesterol, getting 30-60 minutes of physical activity on most days and quitting smoking. If lifestyle changes alone don’t work, your physician may prescribe a cholesterol-lowering medication.

**4. Since the nutrition label on my favorite food says there’s no cholesterol, I can be sure that it’s a “heart-healthy” choice.**

Nutrition labels on food are very helpful when choosing heart-healthy foods, but you need to know what to look for. Many “low-cholesterol” foods contain high levels of saturated fat or *trans*-fatty acids - both of which contribute to high blood cholesterol. Even foods that claim to be “low-fat” may have a higher fat content than expected. Look for the amount of saturated fat, total fat, cholesterol and total calories in a *serving* of the product. Also check how much a serving is. Often it’s smaller than you think. The first ingredient listed is the one used most in the product, so choose products where fats and oils appear later in the ingredient listing. Currently *trans*-fats aren’t required to be listed, but if the product has hydrogenated oils, it has a high level of *trans*-fatty acids, which can raise your cholesterol level.

**5. Since I started taking medication for my high cholesterol, I don’t have to worry about what I eat.**

Unless your cholesterol is dangerously high, it's best to try to reduce it by changing your diet. Drug therapy is usually prescribed for those who - despite adequate dietary changes, regular physical activity and weight loss - still have elevated levels of cholesterol. Modern medications have come a long way in helping to control blood cholesterol levels, but making lifestyle changes along with taking medication is the best way to help prevent heart disease. Reducing the amount of fat and cholesterol in your diet and getting 30-60 minutes of exercise on most or all days of the week is recommended, even if you’re taking cholesterol-lowering medication. It’s also very important to take your medication exactly as your doctor has instructed so it can work most efficiently.

**6. I recently read that eggs aren’t so bad for your cholesterol after all, so I guess I can go back to having my two eggs for breakfast every morning.**

One egg contains about 213 milligrams of dietary cholesterol. That’s a lot given that the daily recommended cholesterol limit is 300 milligrams. An egg a day can fit within heart-healthy guidelines only if cholesterol from other sources, such as meats, poultry and dairy products, is limited. For example, eating one egg for breakfast, drinking 2 cups of coffee with one tablespoon of half and half each, lunching on four ounces of lean turkey breast without skin and one tablespoon of mayonnaise, and having a 6-ounce serving of broiled, short loin porterhouse steak for dinner would account for about 510 mg of dietary cholesterol that day - nearly twice the recommended limit. If you’re going to eat an egg every morning, substitute vegetables for some of the meat, or drink your coffee without half and half.

**7. I’m a woman so I don’t have to worry. High cholesterol is a man’s problem.**

Pre-menopausal women are usually protected from high LDL (“bad”) levels of cholesterol, because the female hormone estrogen tends to raise HDL (“good”) cholesterol levels.

Postmenopausal women may find that even a heart-healthy diet and regular exercise aren't enough to keep their cholesterol from rising. If you're approaching menopause, it's especially important to have your cholesterol checked and talk with your doctor about your options. Hormone replacement therapy (HRT) is **not** recommended to prevent heart disease and may not be the best answer for every woman.

**8. You don't need to have your cholesterol checked until you reach middle age.**

It's a good idea to start having your cholesterol checked at an early age, as even children can have high cholesterol levels. And evidence exists that these children are at greater risk for developing heart disease as adults. Lack of exercise, poor dietary habits and genetics can all affect a child's cholesterol levels. You're never too young to develop a heart-healthy lifestyle by eating foods low in fats, getting 30–60 minutes of physical activity on most or all days, and avoiding tobacco products.

Some great information from National Heart, Lung, and Blood Institute includes an assessment tool to calculate your risk of a heart attack, BMI calculator and other great information.

<http://hin.nhlbi.nih.gov/cholmonth/tips.htm>

Source: American Heart Association and National Heart, Lung, and Blood Institute

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