

[IMAGE]

# **A Matter of the Heart: What You Need to Know About Cholesterol**

By James P. Meschino, DC, MS

Cardiovascular disease is the number-one killer in our society, claiming the lives of one of every two men and one of every three women. High cholesterol is a cardinal risk factor for heart attack, stroke and other vascular diseases. Do you understand what cholesterol is, how it functions in the body and what you can do *naturally* to keep your cholesterol levels within a healthy range? Here's a quick introduction.

## **What Is Cholesterol?**

Cholesterol is a fatty, waxy material that is found in high-fat meat and dairy products, as well as egg yolks, organ meats and shellfish. Our bodies make additional cholesterol in the liver when we eat foods that contain a lot of saturated fat such as beef, pork, lamb, high-fat dairy products, chocolate (made with cocoa butter), and possibly coconut and palm oil. Eating trans fats (hydrogenated fats) found in many fried foods, cookies, pastries, muffins and shortenings also increases the body's cholesterol production.

Most of the cholesterol you eat is absorbed and transported to the liver. Once in the liver, cholesterol, including the cholesterol your liver makes when you eat foods high in saturated fat and/or trans fats, is transported out of the liver in a carrier vehicle known as VLDL (very low-density lipoprotein). The VLDL looks a bit like an egg. Its outer shell is made out of protein and the inside of the shell has cholesterol, where the white of the egg would normally reside. In this model, the yolk represents triglycerides. Triglycerides are the chemical form in which most fat exists in food as well as in the body.

- Copyright © Stock Photo / Register Mark As the VLDL circulates through the bloodstream, the triglycerides are taken up by your fat cells (and your fat cells in turn get larger) and your muscles. Fat is the primary fuel that muscles burn when you are at rest and during light to moderate activity. Thus, the more muscle mass you have, the faster you burn fat, even when sitting in a chair. Once the triglycerides are removed from the VLDL, the remnant particle is known as the LDL (low-density lipoprotein) cholesterol, which is the bad cholesterol that promotes heart attack and stroke.

## **How Does LDL Cholesterol Promote Heart Attack and Stroke?**

Although various body tissues remove LDL ("bad") cholesterol from the bloodstream and use the cholesterol to make cell membranes, bile acids, vitamin D and various hormones (e.g. estrogen, progesterone, cortisone, testosterone), once the tissues have acquired all the cholesterol they need, they stop extracting LDL cholesterol from the bloodstream. Any extra LDL cholesterol continues to circulate in your arteries.

This is where the trouble begins, as LDL cholesterol tends to stick to the walls of the artery, causing progressive narrowing of these important blood vessels. It's a bit more complex than this, but the bottom line is that excess LDL cholesterol causes narrowing of your arteries. Once 85 percent of the artery is blocked with LDL cholesterol, plaque symptoms start to occur, such as angina and transient ischemic attacks (resembling mini-strokes).

In up to 40 percent of cases, the first symptom is a sudden-death heart attack. Waiting for symptoms to occur is not a good idea. A good idea is to keep your LDL cholesterol level within the safe and desirable zone, which is under 2.5 mmol/L (96 mg/dL). If you already have had a heart attack, stroke or heart operation, or have diabetes or kidney disease (including kidney transplant), then you should aim for an LDL cholesterol level at or below 2.0 mmol/L (77 mg/dL).

## **What's the Difference Between Total, LDL and HDL Cholesterol?**

Your doctor wants to know several things about your cholesterol level, each of which indicate your risk level for heart attack and stroke. Total cholesterol comprises the total amount of cholesterol in your bloodstream when you total the amount found in VLDL, LDL and HDL (high-density lipoprotein). Total cholesterol should be below 3.9 mmol/L (150 mg/dL) or, at worst, 4.7 mmol/L (180 mg/dL). LDL cholesterol was covered in the previous section. HDL cholesterol is the "good" cholesterol, in that it is a carrier vessel that vacuums up the cholesterol in the artery wall and brings it back to the liver. Thus, high levels of HDL cholesterol help to protect you against heart disease. Being fit and at your ideal weight helps to raise HDL cholesterol.

## **How Can You Lower Cholesterol Levels Naturally?**

*Eat less saturated fat and trans fats:* To lower your cholesterol, it is best to refrain from eating foods that are high in saturated fat and trans fats, as explained above. This means relying on chicken breast, turkey breast and fish as your main protein staples if you are not vegetarian. It also means not eating any milk or yogurt that is above 1 percent milk fat or any cheese that is above 3 percent milk fat. It means eliminating butter, ice cream, whipped cream and all other high-fat dairy products, and avoiding fried food and foods containing a lot of trans fats and palm or coconut oil.

*Eat cholesterol-lowering fiber.* You should also eat foods that drag cholesterol out of the body and have been shown to lower blood cholesterol by up to 25 percent. These foods include beans and peas (especially red kidney beans, chick peas and lentils), oat bran and oatmeal, psyllium husk fiber (2-3 teaspoons per day), ground flaxseed (2 tablespoons per day) and fruits containing pectin fiber (apples, peaches, pears, plums).

*Consider supplementing with natural agents proven to lower cholesterol.* Certain natural supplements aimed at lowering cholesterol contain gum guggul and artichoke leaf extract. Both of these natural agents have been used in human clinical trials to lower the bad cholesterol by up to 27 percent and triglycerides by up to 30 percent.

Gum guggul (or gugulipid) is derived from the mukul myrrh tree, which contains guggulsterones, the active constituent that accounts for its cholesterol- and triglyceride-lowering effects. Gugulipid was granted approval in India for marketing as a cholesterol- and triglyceride-lowering product in June 1986, due to its impressive efficacy and safety. Gugulipid has been shown to help the body clear excess cholesterol and triglycerides from the bloodstream.

image - Copyright â Stock Photo / Register Mark Artichoke leaf extract contains active constituents that help flush cholesterol from the body via the fecal route. It increases the flow of cholesterol (and bile, which is a building block of cholesterol) from the liver to the intestinal tract. Human studies indicate that artichoke leaf extract alone can reduce LDL cholesterol (the bad cholesterol) by 23 percent.

Dosage: Take two capsules, two or three times per day (with meals) of a supplement that contains 500 mg gum guggul (standardized to 2.5 percent guggulsterones) and 200 mg artichoke leaf extract (standardized to 13-18 percent caffeoylquinic acids) per capsule. Speak to your health practitioner for more information about supplementation.

In some cases, prescription drugs may also be required to get cholesterol into the safe range. However, studies suggest that 90 percent of individuals with high cholesterol can reduce it into the ideal range using the nutrition, lifestyle and supplementation practices outlined in this article. Talk to your doctor for more information about cholesterol and drugless solutions.

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