

CHOLESTEROL AND STROKE

Every year, more than 795,000 Americans have a stroke, or brain attack. A stroke can occur when a blood clot blocks a blood vessel or artery, or when a blood vessel breaks, stopping blood flow to an area of the brain and cutting off vital supplies of oxygen. This lack of blood can cause damage to areas of the brain that control functions such as walking, thinking, talking and breathing.

WHAT IS CHOLESTEROL?

Cholesterol is a soft, waxy fat (lipid) in the blood stream that is found in all of your body's cells. Your body naturally makes all the cholesterol it needs to form cell membranes, some hormones and vitamin D. Certain foods such as egg yolks, liver or foods fried in animal fat or tropical oils contain cholesterol and saturated fats that increase blood cholesterol levels.

HOW DOES CHOLESTEROL AFFECT STROKE RISK?

High cholesterol may raise your risk for stroke by increasing your risk for heart disease, a stroke risk factor. Plaque build-up in the arteries from high levels of cholesterol also can block blood flow to the brain and cause a stroke.

Because cholesterol does not dissolve in the blood on its own, it must be delivered to and from cells by particles called lipoproteins.

The two lipoproteins that have a direct effect on cholesterol levels are low-density lipoproteins (LDL) and high-density lipoproteins (HDL).

WHAT IS LDL CHOLESTEROL?

Due to its artery-clogging properties, LDL cholesterol is often referred to as "bad" cholesterol. LDL carries cholesterol into the blood stream and to your tissues where your body can store it. This type of cholesterol can cause plaque build-up, a thick, hard substance that can clog arteries. In time the plaque can in time cause a narrowing of the arteries or block them completely, causing a stroke or heart attack.

WHAT IS HDL CHOLESTEROL?

HDL carries cholesterol away from the tissues to the liver, where it is filtered out of the body. High levels of HDL, also called "good" cholesterol, seem to protect against stroke and heart attack. A low HDL level may signify a greater stroke or heart disease risk.

WHAT DO MY CHOLESTEROL LEVELS MEAN?

According to National Heart, Lung and Blood Institute (NHLBI), for people over age 18, total cholesterol is considered high if it is more than 200 mg/dL. If the total cholesterol is more than 200 or if the HDL level is less than 40, risk of stroke and heart disease could increase.

Total blood cholesterol levels

Under 200 mg/dL	Desirable
200-239 mg/dL	Borderline High
240 mg/dL and above	High

LDL cholesterol levels

Under 70 mg/dL	if have other stroke risk factors
Under 100 mg/dL	if no other stroke risk factors
100-129 mg/dL	Near optimal/above optimal
130-159 mg/dL	Borderline High
160-189 mg/dL	High
190 mg/dL	Very High

HDL CHOLESTEROL LEVELS

HDL (good) cholesterol protects against stroke and heart disease so higher numbers are better. A level less than 40 mg/dL is low and is considered a risk factor for heart disease. HDL levels of 60 mg/dL or more can help lower your risk.

Cholesterol levels are measured in milligrams (mg) of cholesterol per deciliter (dL) of blood. If you have had a previous stroke or heart attack, your cholesterol levels may need to be less than indicated above. Ask your doctor about your cholesterol levels.

WHAT INCREASES CHOLESTEROL LEVELS?

Things that can affect levels of cholesterol in the blood including:

- Foods high in saturated fat
- Excess body weight
- Lack of exercise

- Family history
- Age (Most people experience an increase until the age of 65.)
- Gender (Women under age 50 tend to have lower cholesterol and those in menopause have higher levels.)

SHOULD I BE CHECKED FOR HIGH CHOLESTEROL?

According to NHLBI, all adults age 20 and older should have their cholesterol checked at least once every five years. This is done with a simple blood test. Cholesterol should be checked more frequently in men older than 45 and women older than 55. People with a family history of high cholesterol should also be checked more often.

WHAT CAN I DO TO MANAGE MY CHOLESTEROL?

Eat a low-fat diet: A diet with 30 percent or fewer total calories from fat, and low in saturated fat, can help to lower cholesterol. Your diet should also include vegetables, fruits and lean meats such as chicken, fish and low-fat dairy products. Adding fiber to the diet, such as whole grain bread, cereal products or dried beans, may also help reduce cholesterol – from 6 to 19 percent, according to published studies. Changing cooking habits to include baking, broiling, steaming or grilling instead of frying can also help.

Exercise: Active people tend to have lower cholesterol. Regular exercise also seems to slow down or stop fatty deposits from clogging arteries. Your doctor may recommend a program of regular exercise to help lower your cholesterol. Be sure to check with your doctor before starting any exercise program.

For best results, you should take part in some aerobic activity most days of the week for at least 20 to 30 minutes each day. And there are simple ways to increase your activity level. Take a brisk walk with a friend, take the stairs instead of the elevator or park farther from your destination.

Medicine: For people who cannot lower their cholesterol through diet and exercise, medicine such as statin drugs might be prescribed. It's important to take the medicine as directed, even when you feel well. Statins are drugs that may help reduce the size of plaque particles that can clog or harden the arteries. Studies have shown that some statins may be effective in reducing the risk of stroke or transient ischemic attack (TIA) in some people. There are currently five types of statins on the market. Several other types of cholesterol-lowering drugs also are available. Ask your doctor about the best cholesterol management method for you.

For more information contact:

National Heart, Lung and Blood Institute
Cholesterol Education Project
1-800-575-WELL (575-9355)
www.nhlbi.nih.gov/chd

National Stroke Association
1-800-787-6537 (1-800-STROKES)
www.stroke.org