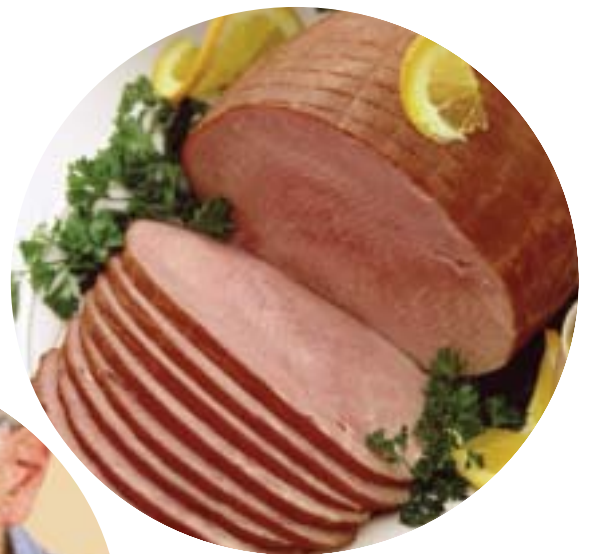




# CHOLESTEROL

&

# STROKE



Sponsored by an unrestricted educational grant from  
**Bristol-Myers Squibb/Sanofi Pharmaceuticals Partnership**  
– Represented by **Sanofi-Synthelabo, Inc.**

The North Carolina Stroke Association's mission is to reduce the incidence and impact of stroke through screening and education. The Stroke Association's goal is to create transportable stroke programs that address stroke prevention, stroke education, and post-stroke services.

## STROKE SIGNS AND SYMPTOMS

### A "Window of Opportunity" for Stroke Treatment



Weak, numb or paralyzed on one side.



Unable to speak or understand clearly.



Blurry vision or loss of vision.



Dizzy or loss of balance.



Sudden severe headache.



Stroke is a medical emergency.

### Warning Signs:

- Sudden one-sided weakness, numbness, paralysis
- Sudden trouble seeing in one or both eyes
- Sudden confusion, trouble speaking or understanding
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe or unexplained headache

Stroke is a medical emergency, and every minute counts. If you see stroke symptoms, don't delay.

**CALL 911 IMMEDIATELY!**

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## **Stroke is largely preventable by treating medical disorders and changing unhealthy lifestyles. Stroke risk factors include:**

- high blood pressure
- atrial fibrillation
- diabetes
- cigarette smoking
- heavy alcohol consumption
- carotid artery disease
- excess weight
- sedentary lifestyle

## **Cholesterol and Stroke**

### **What is cholesterol?**

- Cholesterol is a soft, waxy, fat in the bloodstream and in all your body's cells. Your body naturally makes all the cholesterol it needs for use to form cells, 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 which increase cholesterol levels.
- Cholesterol does not dissolve in the blood on its own. It is delivered to and from the cells by unique particles called lipoproteins.
- The two lipoproteins that have a direct effect on cholesterol are low density lipoproteins (LDL), which is referred to as "bad cholesterol", and high density lipoproteins (HDL), which is referred to as "good cholesterol".

### **How does cholesterol affect stroke risk?**

Stroke is a "brain attack" that cuts off blood and oxygen to the brain. Stroke can damage the brain cells that control everything we do – speaking, walking, and breathing. A stroke happens when an artery leading into the brain clogs or ruptures. Blood clots can form in the heart or elsewhere in the body by the gradual build-up of plaque and other fatty deposits such as cholesterol.



High cholesterol may increase stroke risk by increasing your risk for heart diseases – an important stroke risk factor. Fatty deposits that are caused by high cholesterol may also block normal blood flow to the brain, and cause a stroke.

### **What is LDL “Bad” cholesterol?**

LDL cholesterol is also often referred to as “bad” cholesterol due to its artery clogging properties. LDL carries cholesterol in the blood stream to the tissues where it can be stored in your body. This type of cholesterol can cause a build-up of plaque, a thick, hard substance that can clog arteries. The plaque can eventually cause narrowing of the arteries or block them completely, causing a heart attack or stroke.

### **What is HDL “Good” cholesterol?**

HDL has the opposite effect of LDL cholesterol. HDL carries cholesterol away from the tissues to the liver, where it is passed from the body. High levels of this type of cholesterol protect against heart attack and stroke and it is therefore known as “good” cholesterol. A low HDL level may indicate a greater risk of heart attack or stroke.

### **What increases cholesterol levels?**

Cholesterol levels may be affected by:

- Foods high in saturated fat
- Being overweight
- Lack of exercise
- Genetics
- Age (Most people experience increases in cholesterol until the age of 60 or 65.)
- Gender

### **Women and Cholesterol: Some Facts**



Women younger than 50 years old tend to have lower cholesterol levels than men. Once women reach menopause, their LDL “bad” cholesterol tends to increase and their HDL “good” cholesterol tends to decline.

After the age of 50, women tend to have higher cholesterol levels than men of the same age.

Throughout life, women’s HDL cholesterol remains higher than that of men. This difference may help explain why women under the age of 80 experience lower rates of heart disease and stroke than men.

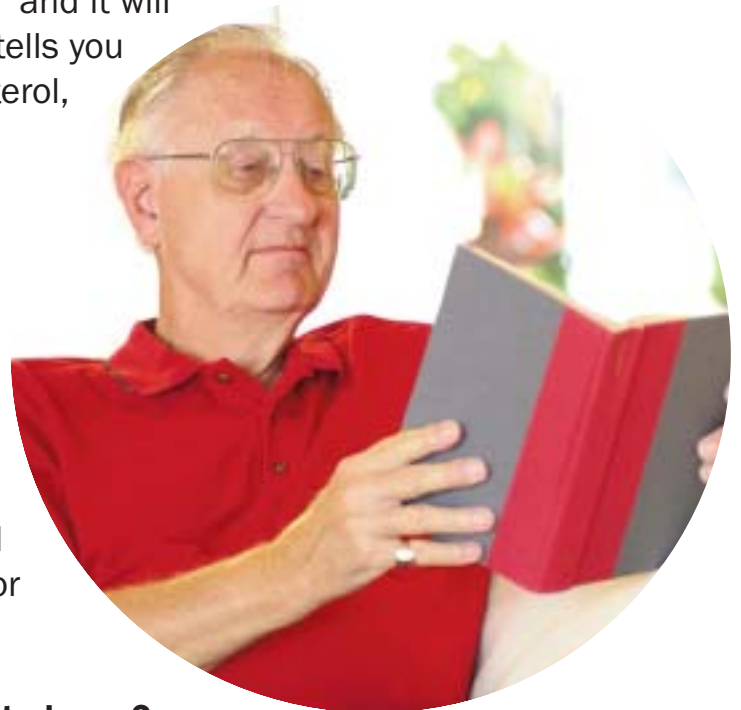
## Should I be checked for high cholesterol?

All adults over 20 years old should have their cholesterol checked at least once every 5 (five) years. Your cholesterol should be checked more frequently if you are older than 45 (for men) or 55 (for women) or have a family history of high cholesterol. A simple blood test can determine your cholesterol levels.

## What do your cholesterol numbers mean?

The blood test is called a “lipoprotein profile” and it will tell you your cholesterol numbers. This test tells you your total cholesterol, your LDL (bad) cholesterol, your HDL (good) cholesterol and your triglycerides.

A high cholesterol level is considered to be over 200 mg/dL for people over 18 years old. The total cholesterol combines both LDL “Bad” and HDL “Good” levels. If the total blood cholesterol number is higher than 200, or if your HDL “Good cholesterol” is lower than 40, you may have an increased risk for heart disease and stroke. Your doctor can determine if you are at greater risk.



## What are the ranges of cholesterol for you to know?

### Total Blood Cholesterol Levels

|             |                     |
|-------------|---------------------|
| Desirable:  | less than 200 mg/dL |
| Borderline: | 200-239 mg/dL       |
| High        | 240 mg/dL or higher |

### HDL-Cholesterol Levels

|            |                    |
|------------|--------------------|
| Desirable: | 40 mg/dL or higher |
|------------|--------------------|

### LDL-Cholesterol Levels

|             |                     |
|-------------|---------------------|
| Desirable:  | less than 130 mg/dL |
| Borderline: | 130-159 mg/dL       |
| High        | 160 mg/dL or higher |

If you have had a stroke or previous heart attack your cholesterol levels may need to be even lower.

## What can I do to lower my cholesterol levels?

### Eat a Low Fat Diet

- Your diet should include vegetables, fruits, lean meats such as chicken and fish, low-fat dairy products and limited number of egg yolks.
- You should include foods high in fiber such as whole grain bread, cereal products or dried beans.
- You may help reduce cholesterol levels by 6 to 19 percent with a high fiber diet, according to published studies.
- Cook your food by baking, broiling, steaming, and grilling, rather than by frying. If you do fry foods, use non-stick cookware and non-stick spray or olive oil.

### Exercise

- Active people tend to have lower cholesterol levels.
- Regular exercise also seems to slow down or stop the clogging of blood vessels by fatty deposits.
- 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 exercise, like a brisk walk, most days of the week, for at least 20 to 30 minutes each time. Take the stairs instead of the elevator or park further away from you need to be, and walk the extra distance.

### Follow your doctor's advice for medication:

- Sometimes, doctors will prescribe medication to help lower cholesterol levels
- Take medication as directed, even on days you feel fine.
- You and your doctor may have to try several different medications before you find the one that's right for you. This is very common so do not be discouraged.



## **What is special about cholesterol-lowering medication?**

One type of cholesterol-lowering medication is called a Statin. A Statin may help reduce the size of the fatty deposits that cause hardening and clogging of the arteries. Statins may prove to be effective in reducing stroke risk or “mini-stroke” (transient ischemic attack) risk in patients who have had a heart attack.

Several other cholesterol lowering drugs are also available. Talk with your doctor about which medication is right for you.



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