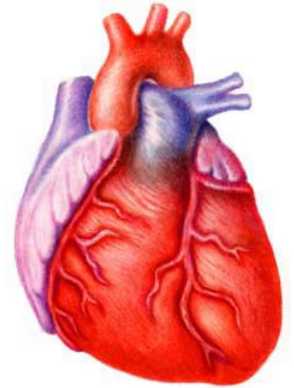




*X-Plain*™  
*Preventing Strokes*

## Reference Summary

A stroke or a “brain attack” is a very serious condition that can result in death and significant disability. This disease is ranked as the third leading cause of death in the United States and is the most common cause of adult disability. This reference summary will review the causes of strokes and what you can do to prevent them.



### What Is A Stroke? Anatomy

Most strokes occur when blood stops reaching a part of the brain. However, some strokes result from bleeding of the arteries into the brain. This is known as “hemorrhagic stroke”. The brain controls most functions of the body. It allows us to think, understand, speak, move, and feel. The biggest part of the brain is known as the cerebrum. It is divided in two hemispheres, right and left. The right side of the brain controls the movement and sensation of the left side of the body. The left side of the brain controls the movement and sensation of the right side of the body. In all right-handed people and most left-handed people, the left hemisphere controls understanding and speech.

A smaller part of the brain, known as the cerebellum, is located under the cerebrum. The cerebellum controls balance and coordination. The cerebrum and cerebellum are connected to the spinal cord through the brain stem, the deepest part of the brain. The brain stem also controls breathing and the heart’s rhythm.

To function properly, the brain needs a continuous supply of oxygen. The oxygen is carried in the blood to the brain. The heart continuously pumps blood. The blood reaches the brain through 4 large blood vessels. Two blood vessels, the carotid arteries, are located in the front of the neck. You can feel their pulse if you put your finger on either side of the trachea, or windpipe. The carotid arteries supply blood to the front of the cerebrum. Two other arteries, known as vertebral arteries, supply blood to the back part of the cerebrum, to the cerebellum, and to the brain stem.



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## Causes

Cholesterol can build up and clog the carotid and the vertebral arteries with fatty deposits, or plaque. This can lead to decreased blood flow to the brain and cause strokes. Parts of the plaque can also get dislodged and move through the arteries to the brain. This clogs smaller arteries, which also leads to strokes. This is known as an “embolus.” The blockage of blood vessels in the brain or neck is also called “thrombosis.” Heart problems can cause blood clots to form inside the heart. Some of these clots can get dislodged and move to the brain, blocking blood vessels in the brain and causing strokes. This is also known as an embolism. Long-standing high blood pressure, also known as hypertension, can also damage the blood vessels in the brain.

Hypertension can cause the blood vessels to narrow. This could lead to strokes. The narrowing of the arteries is called “stenosis.” It can also lead to the weakening of the blood vessels that can result in bleeding inside the brain.

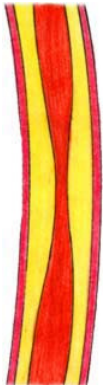
Smoking and drug abuse also increase the chances of blood vessel problems and strokes. To reduce your risk of death or disability from stroke you should:

1. Recognize the warning signs of a stroke so you can seek immediate treatment.
2. Change certain lifestyle habits that damage the blood vessels of the body.

## Symptoms of Strokes

Strokes occur if the blood supply to the brain gets interrupted. When the blood supply to the brain gets interrupted, the area involved stops working. Depending on which area of the brain was affected, the patient may be unable to speak, understand, or move one side of the body or the other. Your body sends signals that your brain is not receiving enough oxygen. The signs of a stroke include the following:

1. A sudden numbness or weakness of the face, arms, or legs. This usually occurs on one side of the body.
2. Sudden confusion, trouble speaking or understanding.
3. Trouble seeing in one or both eyes.
4. Difficulty walking, dizziness, loss of balance or coordination.
5. Severe headache with no known cause.



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If you see or have any of these symptoms, call 911. Treatment can be more effective if given quickly. Every minute counts. Sometimes the warning signs may last only a few moments and then disappear. These short strokes are known as ‘mini-strokes,’ “transient ischemic attack,” or TIA. Even if they last for a short period, you should not ignore them. You should check with your doctor. If not treated, “mini-strokes” can be followed by more severe strokes that can cause permanent disability. Severe strokes can also lead to death or a coma.

## **Prevention**

Preventing strokes is much easier than treating them after they have happened. Prevention consists of adopting lifestyle changes that improve the chance of healthier blood vessels. This includes:

1. Controlling high blood pressure,
2. Stopping smoking,
3. Controlling blood cholesterol

Heart problems can also predispose patients to strokes. It is therefore important for patients to check their heart condition regularly with their physician.

## **Controlling High Blood Pressure**

High blood pressure is also called hypertension. This is the most important factor that causes strokes. In patients with high blood pressure, the walls of the arteries narrow, increasing the chances of a stroke. Here are some ways you can control your blood pressure:

1. Maintain proper body weight and avoid obesity.
2. Avoid drugs known to raise blood pressure. Such drugs may be found in herbal supplements or over-the-counter medications for allergies and colds.
3. Cut down on salt.
4. Eat fruits and vegetables to increase potassium in your diet.
5. Exercise frequently.
6. Take any blood pressure medication prescribed by your doctor.

Controlling blood pressure will also help you avoid heart disease, diabetes, and kidney failure.

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## **Controlling Cholesterol**

Cholesterol is a fatty substance in the body. When the body has more cholesterol than it needs, the extra cholesterol can deposit in the walls of blood vessels, blocking them. This condition is known as “atherosclerosis.” Heart disease is the number one cause of death in the U.S. Coronary artery diseases cause most complications. By controlling your cholesterol, you improve the health of the blood vessels of your heart and brain. When the blood vessels of your heart are healthy, it is less likely that a stroke will occur because of an embolism. You can lower your blood cholesterol by:

1. Eating less egg yolk,
2. Eating more white meat than red meat.

Blood thinners may be given to patients who have heart problems. Surgery to open the arteries of the neck may be necessary to prevent strokes. This operation is known as a Carotid Endarterectomy.

## **Smoking Cessation**

Cigarette smoking has been linked to the buildup of fatty substances in the carotid artery. The blockage of this artery is a leading cause of strokes. Scientists believe that smoking damages the inner lining of the arteries, making it easier for fatty substances to deposit and block the artery. The nicotine in cigarettes and other tobacco products raises blood pressure. Cigarette smoke also makes the blood thicker and more likely to clot.

## **Summary**

Strokes are common and could cause permanent disability or death. Recent medical advances have helped improve the chance of survival and the quality of life for stroke victims. Patients should take steps toward stroke prevention. This prevention consists of adopting lifestyle changes that improve the chance of healthier blood vessels. These include:

1. Controlling high blood pressure,
2. Limiting the effect of smoking,
3. Controlling blood cholesterol,
4. Taking care of your heart condition

The adoption of a healthier lifestyle and recognizing the warning signs of a stroke are our best chances to reduce the occurrence of strokes.

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