

Stroke

WHAT IS A STROKE?

A Stroke occurs when a blood vessel (artery) that supplies blood to the brain bursts or is blocked by a blood clot. Within minutes, the nerve cells in that area of the brain are damaged, and they may die within a few hours. As a result, the part of the body controlled by the damaged section of the brain cannot function properly.

If you have symptoms of a stroke, you need emergency care, just as though you are having a heart attack. If medical treatment begins soon after symptoms are noticed, fewer brain cells may be permanently damaged.

TOPIC OVERVIEW

CAUSE

SYMPTOMS

WHAT INCREASES YOUR RISK

PREVENTION

WHAT CAUSES A STROKE?

- An ischemic stroke is caused by a reduction in blood flow to the brain. This can be caused by a blockage or narrowing in an artery that supplies blood to the brain or when the blood flow is reduced because of a heart or other condition.*
- A hemorrhagic stroke develops when an artery in the brain leaks or bursts and causes bleeding inside the brain tissue or near the surface of the brain.*

Before having a stroke, you may have one or more transient ischemic attacks (TIAs), which are a WARNING signal that a stroke may soon occur. TIAs are often called mini strokes because their symptoms are similar to those of a stroke. However, unlike stroke symptoms, TIA symptoms usually disappear within 10 to 20 minutes, although they may last up to 24 hours.

CAUSES OF ISCHEMIC STROKE

An ischemic stroke is caused by a blood clot that blocks blood flow to the brain. A blood clot can develop in a narrowed artery that supplies the brain or can travel from the heart (or elsewhere in the body) to an artery that supplies the brain. Blood clots are usually the result of other problems in the body that affect the normal flow of blood, such as:

- *Hardening of the arteries (atherosclerosis). This is caused by high blood pressure, diabetes, and high cholesterol.*
- *Atrial fibrillation or other irregular heart rhythms.*
- *Certain heart valve problems, including having an artificial heart valve, a repaired heart valve, heart valve disease such as mitral valve prolapse, or narrowing of a heart valve (stenosis).*
- *Infection of the heart valves (endocarditis).*
- *A patent foramen ovale, which is a congenital heart defect.*
- *Blood-clotting disorders.*
- *Inflammation of blood vessels (vasculitis).*
- *Heart attack.*

Low blood pressure (hypotension) may also cause a TIA, although less commonly. Low blood pressure results in reduced blood flow to the brain and may develop as a result of narrowed or diseased arteries, a heart attack, a large loss of blood, or a severe infection. Some surgeries (such as endarterectomy) or other procedures (such as angioplasty) that are used to treat narrowed carotid arteries may ultimately cause a blood clot to break loose, resulting in a stroke.

CAUSES OF HEMORRHAGIC STROKE

A hemorrhagic stroke is caused by bleeding inside the brain (called intracerebral hemorrhage) or bleeding in the space around the brain (called subarachnoid hemorrhage). Bleeding inside the brain may be a result of longstanding high blood pressure. Bleeding in the space around the brain may be caused by a ruptured aneurysm or uncontrolled high blood pressure.

Other causes of hemorrhagic stroke are less common but include:

- *Inflammation in the blood vessels, which may develop from conditions such as syphilis or tuberculosis.*
- *Blood-clotting disorders, such as hemophilia*
- *Head or neck injuries that result in damage to blood vessels in the head or neck.*
- *Radiation treatment for cancer in the neck or brain*
- *Cerebral amyloid angiopathy (a degenerative blood vessel disorder).*

SYMPTOMS

If you have symptoms of a stroke, seek emergency medical care. General symptoms of a stroke include sudden onset of:

- *Numbness, weakness, or paralysis of the face, arm, or leg, typically on one side of the body.*
- *Vision problems in one or both eyes, such as dimness, blurring, double vision, or loss of vision.*
- *Confusion, trouble speaking or understanding.*
- *Trouble walking, dizziness, loss of balance or coordination.*
- *Severe headache.*

Symptoms vary depending on whether the stroke is caused by a clot or bleeding. The location of the blood clot or bleeding and the extent of brain damage can also affect symptoms.

- *Symptoms of an ischemic stroke (caused by a clot blocking a blood vessel) usually occur in the side of the body opposite from the side of the brain where the clot occurred. For example, a stroke in the right side of the brain affects the left side of the body.*
- *Symptoms of a hemorrhagic stroke (caused by bleeding in the brain) can be similar to those of an ischemic stroke but may be distinguished by symptoms relating to higher pressure in the brain, including severe headache, nausea and vomiting, neck stiffness, dizziness, seizures, irritability, confusion, and possibly unconsciousness.*

WHAT INCREASES YOUR RISK

Risk factors for stroke include those you can change and those you can't change. Having certain diseases increases your risk for stroke. If you can control the disease, you lower your risk.

Risk factors you can control include:

- *High blood pressure. High blood pressure is the second most important stroke risk factor after age 55.*
- *Diabetes. About one-quarter of people with diabetes die of stroke. Having diabetes doubles your risk for stroke because of the circulation problems associated with the disease.*
- *High cholesterol. High cholesterol can lead to coronary artery disease and heart attack, which can damage the heart muscle and increase your risk for stroke.*
- *Coronary artery disease, which can lead to heart attack and stroke.*
- *Other heart conditions, such as atrial fibrillation, , endocarditis, heart valve conditions, patent foramen ovale, or cardiomyopathy.*
- *Smoking, including secondhand smoke.*
- *Physical inactivity.*
- *Being overweight*
- *Use of some medications, such as birth control pills-especially by women who smoke or have a history of blood-clotting problems-and anticoagulants or steroids. In postmenopausal women, hormone replacement therapy has been shown to slightly increase the risk of stroke.*
- *Heavy use of alcohol. People who drink alcohol excessively, especially people who binge drink, are more likely to have a stroke. Binge drinking is defines as drinking more than 5 drinks in a short period of time.*
- *Use of cocaine and other illegal drugs.*

Risk factors you cannot change include:

- ***Age. The risk for stroke increases with age. The risk doubles every decade after age 55. At least 66% of all people who have a stroke are age 65 or older.***
- ***Race. African Americans and Hispanics have a higher risk than those of other races. Compared with whites, young African Americans have 2 to 3 times the risk of ischemic stroke, and African-American men and women are more likely to die from stroke.***
- ***Gender. Stroke is more common in men than women until age 75.***
- ***Family history. The risk for stroke is greater if a parent, brother, or sister has had a stroke or transient ischemic attack (TIA).***
- ***History of stroke or TIA.***

EXAMS AND TESTS

Time is critical when diagnosing a stroke. A quick diagnosis may enable your doctor to use medications that can lead to a better recovery. The first priority will be to determine whether you are having an ischemic or hemorrhagic stroke. This distinction is critical because the medication given for an ischemic stroke (caused by a blood clot) could be life-threatening if the stroke is hemorrhagic (caused by bleeding). Your doctor will also want to rule out other conditions that have symptoms similar to a stroke and to check for complications.

The first and most important test after a stroke is a cerebral computed tomography (CT) scan, which is a series of X-rays of your brain that can identify whether there is bleeding. This test will help your doctor diagnose whether the stroke is ischemic or hemorrhagic. A magnetic resonance image (MRI) may also be done to determine the amount of damage to the brain and help predict recovery.

Developments to watch for:

The State of Texas has passed legislation to develop Stroke Centers and have state wide protocols for handling stroke patients. There will be a push for early recognition by the general public, and rapid treatment by the healthcare profession. EMS will be a major player in this system. Check out the American Heart Association website for more information. Also, watch GETAC updates for the progress of the Texas Stroke Committee.