



## Frequently Asked Questions about Stroke

### What is a stroke?

A stroke is sometimes called a “brain attack.” A stroke can injure the brain like a heart attack can injure the heart. Stroke is the result of *cerebrovascular* disease — disease of the blood vessels in the brain.

There are two types of stroke:

- *Ischemic* stroke, the most common type of stroke. This type of stroke happens when there is a sudden lack of blood flow to some part of the brain, usually due to a blood clot blocking an *artery* or blood vessel. Often the artery is already clogged with fatty deposits (*atherosclerosis*).
- *Hemorrhagic* stroke. Bleeding in the brain from a broken or leaking blood vessel causes this type of stroke. A hemorrhagic stroke may be due to an *aneurysm*—a thin or weak spot in an artery that balloons out and can burst.

Either type of stroke can cause brain cells to die. This brain damage may cause a person to lose control of certain functions, such as speech, movement, and memory. Like a heart attack, a stroke is an emergency and should be treated as quickly as possible.

### What is a “mini-stroke” or TIA?

A “mini-stroke” refers to a *transient ischemic attack* (TIA). In a TIA, there is a short-term reduction in blood flow to the brain. This causes temporary stroke symptoms (often just for a few minutes) such as weakness or tingling in an arm or leg. TIAs don’t cause brain damage, but they are important warning signs that a person is at risk of having a stroke. If you have a TIA, you should seek medical care right away to prevent a full stroke.

### What are the warning signs of stroke?

Know that not everyone gets all of the following warning signs of stroke. And, sometimes these signs can go away and return. Treatments are most effective if given within one hour of when the attack begins. If you have any of these symptoms, call 911 right away!

- Sudden numbness or weakness of face, arm, or leg, especially on one side of the body.
- Sudden confusion or trouble speaking or understanding speech.
- Sudden trouble walking, dizziness, or loss of balance or coordination.
- Sudden severe headache with no known cause.
- Blurred or double vision, drowsiness, and nausea or vomiting.

## What are the effects of stroke?

A person who has a stroke may suffer little or no brain damage and disability, especially if the stroke is treated promptly. But stroke can lead to severe brain damage and disability, or even death. The type of disability caused by a stroke depends on the extent of brain damage and what part of the brain is damaged.

Stroke may cause paralysis or weakness of one side of the body, memory problems, mood changes, trouble speaking or understanding speech, problems with eating and swallowing, pain, depression, and other problems. Rehabilitation and medical treatment can help a person recover from the effects of stroke and prevent another stroke from occurring.

## Where can stroke occur in the brain and how does that affect the body?

The brain is a complex organ. Each area of the brain is responsible for a particular function or ability. The brain is divided into four main parts: the right *hemisphere* (or half), the left hemisphere, the *cerebellum* and the *brain stem*.

A stroke in the right hemisphere of the brain often causes paralysis in the left side of the body. This is known as *left hemiplegia*. In addition, a stroke in this part of the brain may cause:

- Problems with spatial and perceptual abilities. For example, the stroke survivor may misjudge distances and fall, or be unable to guide her hands to pick up an object.
- Impaired judgment and behavior. For example, she may try to do things that she should not attempt to do, such as trying to drive a car.
- Problems with short-term memory. Although she may be able to recount events from 30 years ago, she may be unable to remember what she ate for breakfast that morning.

Someone who has had a left hemisphere stroke may have right hemiplegia, paralysis of the right side of the body. She may also have:

- *Aphasia*—speech and language problems.
- Slow and cautious behavior, in contrast to the behavior of a right-hemisphere stroke survivor. She may need a lot of help to complete tasks.
- Memory problems similar to those of right-hemisphere stroke survivors. For example, she may have trouble learning new information and have poor short-term memory.

A stroke that takes place in the cerebellum can cause:

- Abnormal reflexes of the head and torso
- Coordination and balance problems
- Dizziness, nausea and vomiting.

Strokes that occur in the brain stem are especially devastating. The brain stem is the area of the brain that controls all of our involuntary "life-support" functions, such as breathing rate, blood pressure and heartbeat. The brain stem also controls abilities such as eye movements, hearing, speech and swallowing. Since impulses generated in the brain's hemispheres must travel through the brain stem on their way to the arms and legs, patients with a brain stem stroke may also develop paralysis in one or both sides of the body.

## **Who is at risk for stroke?**

Stroke risks are higher in people who have a family or personal history of stroke and for African Americans. African American women have a higher risk of disability and death from stroke than Caucasian women do. This is partly because more African American women have high blood pressure, a major stroke risk factor. Age is also a factor: the chance of having a stroke more than doubles for each decade of life after age 55. Women who smoke or who have high blood pressure, heart disease, or diabetes are at greater risk of having a stroke. Hormonal changes with pregnancy, childbirth, and menopause are also linked to an increased risk of stroke.

## **How is stroke prevented?**

The more stroke risk factors you have, the greater the chance that you will have a stroke. You can't control some risk factors, such as aging, family health history, race and gender. But you can change or treat most other risk factors to lower your risk.

Here are some of the best ways to prevent stroke:

- Eat a healthy diet low in saturated fat and rich in fruits, vegetables, and whole grains. Don't overeat, and keep your weight under control.
- Get regular exercise (30 minutes a day, most days of the week, or more).
- Find ways to manage stress in your life.
- If you have high blood pressure, take your blood pressure medicine as prescribed by your health care provider.
- If your cholesterol level is too high, talk to your health care provider about ways to lower it.
- If you smoke, stop smoking. If it is hard to quit on your own, there are products like nicotine patches, support groups, and programs to help you stop smoking.
- If you have heart disease or diabetes, take good care of yourself. See your health care provider and take your medicine as prescribed.
- Get help if you have a TIA ("mini-stroke"). Talk to your health care provider to see if you need medicine or surgery.
- Aspirin therapy may be useful, but check with your health care provider before starting to take aspirin on a daily basis.

## How is stroke diagnosed?

Before a stroke can be treated, diagnostic tests must be performed. Health care providers must find out what kind of stroke it is to treat it correctly. A person thought to be having a stroke may have a neurological exam, blood tests and an *electrocardiogram*.

Other kinds of tests used in diagnosing stroke include:

- Imaging tests that give a picture of the brain. These include CT (*computed tomography*) scanning, sometimes called CAT scans, and MRI (*magnetic resonance imaging*) scanning. CT scans are particularly useful for determining if a stroke is caused by a blockage or by bleeding in the brain.
- Electrical tests such as *EEG (electroencephalogram)* and an evoked response test to record the electrical impulses and sensory processes of the brain.
- Blood flow tests, such as *Doppler ultrasound* tests, to show any changes in the blood flow to the brain.

## How is stroke treated?

Strokes caused by blood clots can be treated with clot-busting drugs such as *TPA (tissue plasminogen activator)*. TPA must be given within 3 hours of the start of a stroke to be effective, and tests must be done first. This is why it is so important for a person having a stroke to get to a hospital fast.

Other medicines are used to treat and to prevent stroke. Anticoagulants such as warfarin and antiplatelet agents such as aspirin interfere with the blood's ability to clot and can play an important role in preventing stroke.

Surgery is sometimes used to treat or prevent stroke. For example, *carotid endarterectomy* is the surgical removal of fatty deposits clogging the carotid artery in the neck that could lead to a stroke. For hemorrhagic stroke, surgical treatment may include placing a metal clip at the base of an aneurysm or removing abnormal blood vessels.

## What about stroke rehabilitation?

Rehabilitation is a very important part of recovery for many stroke survivors. The effects of stroke may mean that you must change, relearn or redefine how you live. Stroke rehabilitation is designed to help you return to independent living.

Rehabilitation doesn't reverse the effects of a stroke. Its goals are to build your strength, capability and confidence so you can continue your daily activities despite the effects of your stroke. Rehabilitation services may include:

- physical therapy to restore movement, balance and coordination
- occupational therapy to relearn basic skills such as bathing and dressing oneself
- speech therapy.

## **For more information...**

For more information on stroke, contact the National Women's Health Information Center (NWHIC) at (800) 994-9662 (WOMAN) or the following organizations.

### **National Institute of Neurological Disorders and Stroke**

Phone Number(s): (800) 352-9424

Internet Address: <http://www.ninds.nih.gov>

### **National Heart, Lung, and Blood Institute**

Phone Number(s): (301) 592-8573

Internet Address: <http://www.nhlbi.nih.gov>

### **American Heart Association**

Phone Number(s): (800) 242-8721

Internet Address: <http://www.americanheart.org>

### **National Stroke Association**

Phone Number(s): (800) 787-6537

Internet Address: <http://www.stroke.org>

### **The Heart Truth**

National Awareness Campaign for Women about Heart Disease

National Heart, Lung, and Blood Institute

Phone Number(s): (800) 793-2665

Internet Address: <http://www.nhlbi.nih.gov/health/hearttruth/index.htm>

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