



<http://www.womenshealth.gov>

1-800-994-9662

TDD: 1-888-220-5446

Women may have unique symptoms:

- Sudden face and arm or leg pain
- Sudden hiccups
- Sudden nausea (feeling sick to your stomach)
- Sudden tiredness
- Sudden chest pain
- Sudden shortness of breath (feeling like you can't get enough air)
- Sudden pounding or racing heart-beat

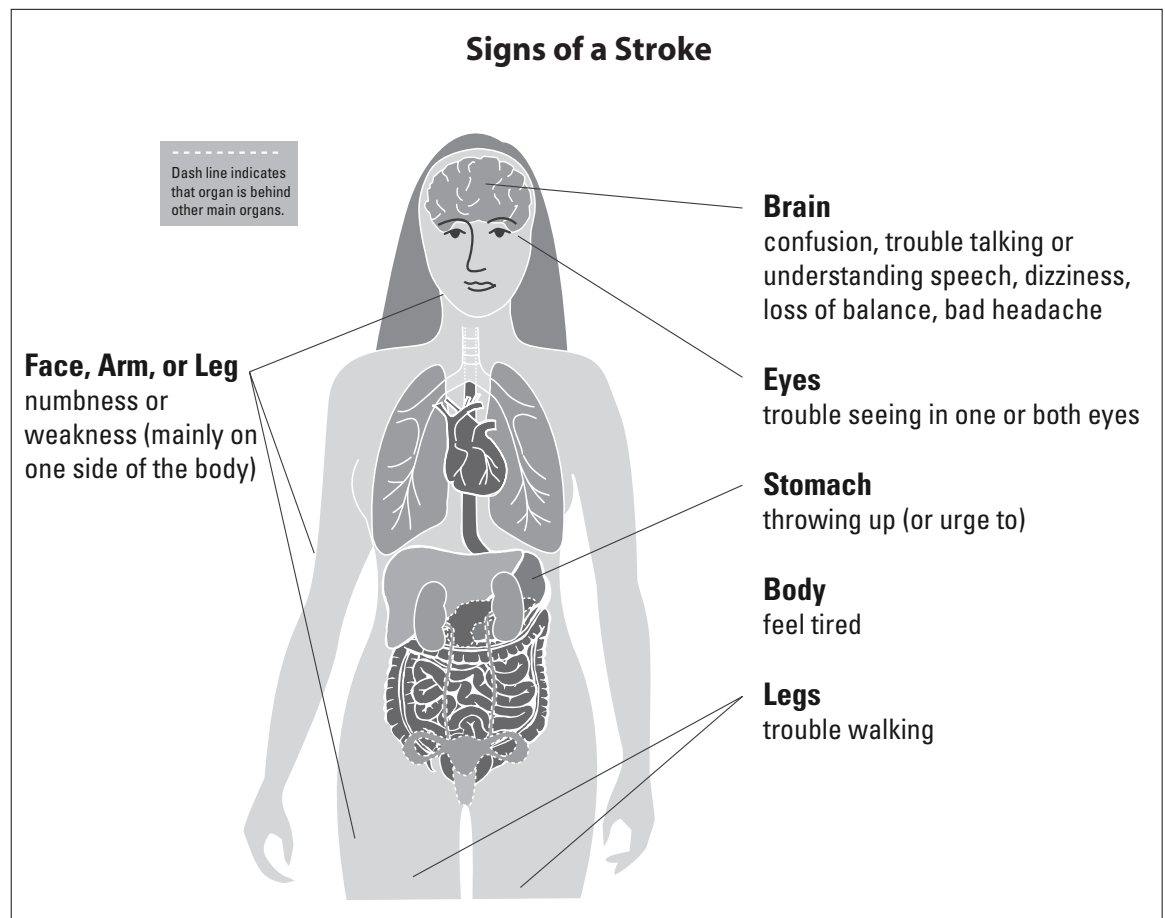
If you have any of these symptoms, call 911.

Q: How is stroke diagnosed?

A: The doctor will usually start by asking the patient what happened and when the symptoms began. Then the doctor will ask the patient some questions to see if she or he is thinking clearly. The doctor also will test the patient's reflexes to see if she or he may have had any physical damage. This helps the doctor find out which tests are needed.

The doctor may order one or more of the following tests:

- **Imaging tests** that give a picture of the brain. These include CT (computed tomography) scanning, some-





<http://www.womenshealth.gov>

1-800-994-9662

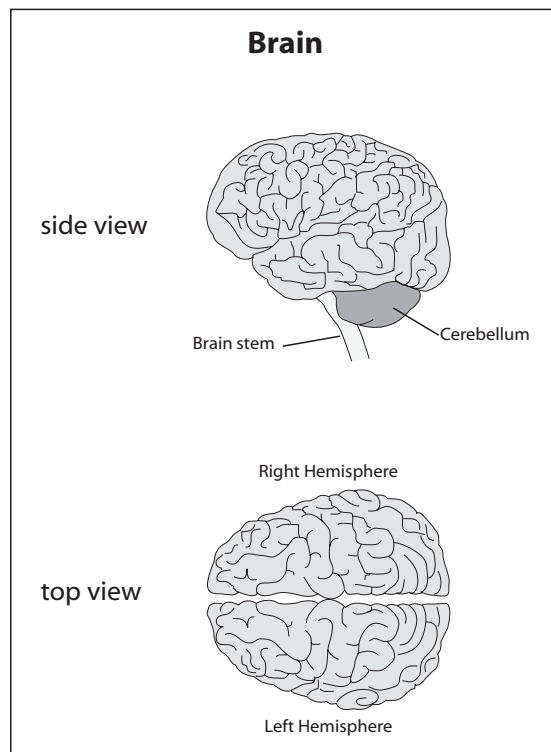
TDD: 1-888-220-5446

times called CAT scans and MRI (magnetic resonance imaging) scanning. CT scans are useful for finding out 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.

Q: What are the effects of stroke?

A: It depends on the type of stroke, the area of the brain where the stroke occurs, and the extent of brain injury. A mild stroke can cause little or no brain damage. A major stroke can cause severe brain damage and even death.



A stroke can occur in different parts of the brain. The brain is divided into four main parts: the right hemisphere (or half), the left hemisphere (or half), the cerebellum, and the brain stem.

A stroke in the right half of the brain can cause:

- Problems judging distances — The stroke survivor may misjudge distances and fall or be unable to guide her hands to pick something up.
- Impaired judgment and behavior — The stroke survivor may try to do things that she should not do, such as driving a car.
- Short-term memory loss — The stroke survivor may be able to remember events from 30 years ago, but not what she ate for breakfast that morning.

A stroke in the left half of the brain can cause:

- Speech and language problems — The stroke survivor may have trouble speaking or understanding others.
- Slow and cautious behavior — The stroke survivor may need a lot of help to complete tasks.
- Memory problems — The stroke survivor may not remember what she did ten minutes ago or she may have a hard time learning new things.

A stroke in the cerebellum, or the part of the brain that controls balance and coordination, can cause:

- Abnormal reflexes of the head and upper body
- Balance problems



<http://www.womenshealth.gov>

1-800-994-9662

TDD: 1-888-220-5446

- Dizziness, nausea (feeling sick to your stomach), and vomiting

Strokes in the brain stem are very harmful because the brain stem controls all our body's functions that we don't have to think about, such as eye movements, breathing, hearing, speech, and swallowing. Since impulses that start in the brain must travel through the brain stem on their way to the arms and legs, patients with a brain stem stroke may also develop paralysis, or not be able to move or feel on one or both sides of the body.

In many cases, a stroke weakens the muscles, making it hard to walk, eat, or dress without help. Some symptoms may improve with time and rehabilitation or therapy.

Q: Who is at risk for stroke?

A: It is a myth that stroke occurs only in older adults. A person of any age can have a stroke. But, stroke risk does increase with age. For every 10 years after the age of 55, the risk of stroke doubles, and two-thirds of all strokes occur in people over 65 years old. Stroke also seems to run in some families. Stroke risk doubles for a woman if someone in her immediate family (mom, dad, sister, or brother) has had a stroke.

Compared to white women, African American women have more strokes and have a higher risk of disability and death from stroke. This is partly because more African American women have high blood pressure, a major stroke risk factor. Women who smoke or who have high blood pressure, atrial fibrillation (a kind of irregular heart beat), heart disease, or dia-

betes are more likely to have a stroke. Hormonal changes with pregnancy, childbirth, and menopause are also linked to an increased risk of stroke.

Q: How do I prevent a stroke?

A: Experts think that up to 80% of strokes can be prevented. Some stroke risk factors cannot be controlled, such as age, family history, and ethnicity. But you can reduce your chances of having a stroke by taking these steps:

- **Know your blood pressure.** Your heart moves blood through your body. If it is hard for your heart to do this, your heart works harder, and your blood pressure will rise. People with high blood pressure often have no symptoms, so have your blood pressure checked every 1 to 2 years. If you have high blood pressure, your doctor may suggest you make some lifestyle changes, such as eating less salt (DASH Eating Plan) and exercising more. Your doctor may also prescribe medicine to help lower your blood pressure.
- **Don't smoke.** If you smoke, try to quit. If you are having trouble quitting, there are products and programs that can help:
 - Nicotine patches and gums
 - Support groups
 - Programs to help you stop smoking

Ask your doctor or nurse for help. For more information on quitting, visit *Quitting Smoking* at <http://www.womenshealth.gov/quitsmoking>.

- **Get tested for diabetes.** People with diabetes have high blood glucose (often called blood sugar).



<http://www.womenshealth.gov>

1-800-994-9662

TDD: 1-888-220-5446

People with high blood sugar often have no symptoms, so have your blood sugar checked regularly. Having diabetes raises your chances of having a stroke. If you have diabetes, your doctor will decide if you need diabetes pills or insulin shots. Your doctor can also help you make a healthy eating and exercise plan.

- **Get your cholesterol and triglyceride levels tested.** Cholesterol is a waxy substance found in all parts of your body. When there is too much cholesterol in your blood, cholesterol can build up on the walls of your arteries. Cholesterol can clog your arteries and keep your brain from getting the blood it needs. This can cause a stroke. Triglycerides are a form of fat in your blood stream. High levels of triglycerides are linked to stroke in some people. People with high blood cholesterol or high blood triglycerides often have no symptoms, so have your blood cholesterol and triglyceride levels checked regularly. If your cholesterol or triglyceride levels are high, talk to your doctor about what you can do to lower them. You may be able to lower your cholesterol and triglyceride levels by eating better and exercising more. Your doctor may prescribe medication to help lower your cholesterol.
- **Maintain a healthy weight.** Being overweight raises your risk for stroke. Calculate your Body Mass Index (BMI) at <http://www.cdc.gov/nccdphp/dnpa/healthyweight/assessing/bmi/index.htm> to see if you are at a healthy weight. Make healthy food choices and get plenty of exercise. Each week, aim for at least 2 hours and 30 minutes of

moderate-intensity aerobic physical activity, 1 hour and 15 minutes of vigorous-intensity aerobic physical activity, or a combination of moderate and vigorous activity. Start by adding more fruits, vegetables, and whole grains to your diet. Take a brisk walk on your lunch break or take the stairs instead of the elevator.

- **If you drink alcohol, limit it to no more than one drink (one 12 ounce beer, one 5 ounce glass of wine, or one 1.5 ounce shot of hard liquor) a day.**
- **Find healthy ways to cope with stress.** Lower your stress level by talking to your friends, exercising, or writing in a journal.

Q: Should I take a daily aspirin to prevent stroke?

A: Aspirin may be helpful for women at high risk, such as women who have already had a stroke. Aspirin can have serious side effects and may be harmful when mixed with certain medications. If you're thinking about taking aspirin, talk to your doctor first. If your doctor thinks aspirin is a good choice for you, be sure to take it exactly as your doctor tells you to.

Q: Does taking birth control pills increase my risk for stroke?

A: Taking birth control pills is generally safe for young, healthy women. But birth control pills can raise the risk of stroke for some women, especially women over 35; women with high blood pressure, diabetes, or high cholesterol; and women who smoke. Talk with your doctor if you have questions about the pill.



<http://www.womenshealth.gov>

1-800-994-9662

TDD: 1-888-220-5446

If you are taking birth control pills, and you have any of the symptoms listed below, call 911:

- Eye problems such as blurred or double vision
- Pain in the upper body or arm
- Bad headaches
- Problems breathing
- Spitting up blood
- Swelling or pain in the leg
- Yellowing of the skin or eyes
- Breast lumps
- Unusual (not normal) heavy bleeding from your vagina

Q: Does using the birth control patch increase my risk for stroke?

A: The patch is generally safe for young, healthy women. The patch can raise the risk of stroke for some women, especially women over 35; women with high blood pressure, diabetes, or high cholesterol; and women who smoke. Recent studies show that women who use the patch may be exposed to more estrogen (the female hormone in birth control pills and the patch that keeps users from becoming pregnant) than women who use the birth control pill. Research is underway to see if the risk for blood clots (which can lead to heart attack or stroke) is higher in patch users. Talk with your doctor if you have questions about the patch.

If you are using the birth control patch, and you have any of the symptoms listed below, call 911:

- Eye problems such as blurred or double vision
- Pain in the upper body or arm
- Bad headaches
- Problems breathing
- Spitting up blood
- Swelling or pain in the leg
- Yellowing of the skin or eyes
- Breast lumps
- Unusual (not normal) heavy bleeding from your vagina

Q: How is stroke treated?

A: Strokes caused by blood clots can be treated with clot-busting drugs such as TPA, or tissue plasminogen activator. TPA must be given within three hours of the start of a stroke to work, 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, block the blood's ability to clot and can help prevent a stroke in patients with high risk, such as a person who has atrial fibrillation (a kind of irregular heartbeat).

Surgery is sometimes used to treat or prevent stroke. Carotid endarterectomy is a surgery to remove fatty deposits clogging the carotid artery in the neck, which could lead to a stroke. For hemorrhagic stroke, a doctor may perform surgery to place a metal clip at the base of an *aneurysm* (a thin or weak spot in an artery that balloons out and can burst) or remove abnormal blood vessels.



<http://www.womenshealth.gov>

1-800-994-9662

TDD: 1-888-220-5446

Q: What about rehabilitation?

A: 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 does not reverse the effects of a stroke. Its goals are to build your strength, capability, and confi-

dence 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
- Speech therapy to relearn how to talk ■

For more information

For more information on stroke, contact the National Women's Health Information Center (NWHIC) at 1-800-994-9662 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/index.htm>

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/>

All material contained in this FAQ is free of copyright restrictions, and may be copied, reproduced, or duplicated without permission of the Office on Women's Health in the Department of Health and Human Services. Citation of the source is appreciated.

This FAQ was reviewed by:

Patrice Desvigne-Nickens, M.D.
 Leader, Cardiovascular Medicine SRG
 Clinical and Molecular Medicine Program
 Division of Heart and Vascular Diseases
 National Heart, Lung, and Blood Institute

Content last updated January 28, 2009.