STROKE PATIENT EDUCATION

HOLY CROSS HEALTH
A Member of Trinity Health

Moving Life Ahead℠

STROKE CARE AT HOLY CROSS HEALTH

Holy Cross Health is committed to providing high-quality care to our stroke patients, so you can move your life forward. This stroke educational booklet contains the following information for you and your family to review:

- the risk factors associated with stroke
- the causes of stroke
- the signs and symptoms of stroke
- how a stroke is diagnosed or how your doctor determines you had a stroke
- recovery from a stroke
- medications your doctor may prescribe to prevent a stroke in the future
- self-care following a stroke
- additional resources for stroke information

During your stay, you will receive necessary tests and medications and will be closely monitored to determine the cause of your stroke. You also may receive therapy, if needed, during your recovery at Holy Cross Hospital or Holy Cross Germantown Hospital. Both hospitals are designated as Primary Stroke Centers by the Maryland Institute for Emergency Medical Services Systems (MIEMSS). Holy Cross Hospital also holds Advanced Primary Stroke Center designation by the Joint Commission.

While you are hospitalized, we recommend that you take the opportunity to view a video about stroke on the television in your room. If you need assistance to view the video, please ask your nurse to help you.

If you have additional questions about your condition, please call 301-754-7529 for Holy Cross Hospital or 301-557-5929 for Holy Cross Germantown Hospital.

Holy Cross Hospital
1500 Forest Glen Road
Silver Spring, MD 20910

Holy Cross Germantown Hospital
19801 Observation Drive
Germantown, MD 20876

TABLE OF CONTENTS

STROKE FACTS

- A stroke cuts off vital blood flow and oxygen to the brain.
- Two million brain cells die every minute during a stroke, increasing risk of permanent brain damage, disability or death.
- In the United States, stroke is the fifth leading cause of death, killing about 140,000 people each year, and a leading cause of serious, long-term adult disability.
- Approximately **795,000 strokes** will occur this year. About 690,000 of these are new acute ischemic strokes (AIS).
- Stroke can happen to anyone at any time, regardless of race, sex or age.
- Approximately **55,000 more women than men** have a stroke each year.
- Men's stroke incidence rates are greater than women's at younger ages, but not older ages.
- African Americans have almost twice the risk of first-ever stroke compared to Caucasians.

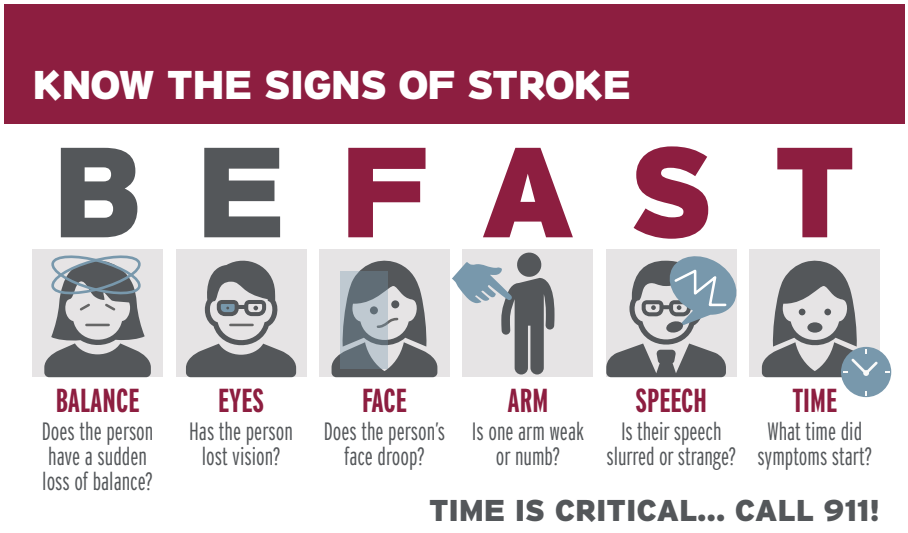
COMMON STROKE SYMPTOMS INCLUDE:

- sudden numbness or weakness of the face, arm or leg – especially on one side of the body
- sudden confusion, trouble speaking or understanding
- sudden trouble seeing in one or both eyes
- sudden trouble walking, dizziness, loss of balance or coordination
- sudden severe headache with no known cause

Stroke Strikes Fast. Learning the signs and symptoms and BE FAST when they occur could save your life or the life of a loved one.

USE THE B.E.F.A.S.T. TEST FOR RECOGNIZING AND RESPONDING TO STROKE SYMPTOMS:

B=BALANCE Does the person have sudden loss of balance?
E=EYES Has the person experienced a loss of vision in one or both eyes?
F=FACE Ask the person to smile. Does one side of the face droop?
A=ARMS Ask the person to raise both arms. Does one arm drift downward?
S=SPEECH Ask the person to repeat a simple sentence. Does the speech sound slurred or strange?
T=TIME If you observe any of these signs, it's time to call 9-1-1 or get to the nearest stroke center or hospital.



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STROKE RESOURCES

Holy Cross Health offers several resources that may benefit stroke patients and caregivers in need of further care and/or support:

Stroke Support Group at Holy Cross Germantown Hospital
Register at HolyCrossHealth.org/Support or call 301-754-8800.

Holy Cross Health Community Health Classes
Register at HolyCrossHealth.org/Classes-Events or call 301-754-8800.

Holy Cross Medical Adult Day Center
Phone: 301-754-7150
Website: HolyCrossHealth.org/MADC

Holy Cross Caregiver Resource Center
Phone: 301-754-7152
Website: HolyCrossHealth.org/CRC

Holy Cross Home Care and Hospice
Phone: 301-557-HOME (4663)
Website: HolyCrossHealth.org/HomeCareAndHospice

Holy Cross Private Home Services
Phone: 301-754-7780
Website: HolyCrossHealth.org/Private-Home-Services

Holy Cross Health Centers
Aspen Hill: 301-557-1950
Gaithersburg: 301-557-1832
Germantown: 301-557-2140
Silver Spring: 301-557-1870
Website: HolyCrossHealth.org/HCHC

Holy Cross Health Partners
Asbury Methodist Village: 301-557-2110
Kensington: 301-949-4242
Website: HolyCrossHealth.org/HCHP

There are also a variety of local and national stroke organizations and resources:

American Heart Association/ American Stroke Association Information
Website: StrokeAssociation.org

American Heart Association/ American Stroke Association Support Network
Website: SupportNetwork.Heart.org

National Institute of Neurological Disorders and Stroke (NINDS) Stroke Information Page
Website: NINDS.NIH.gov/Disorders/All-Disorders/Stroke-Information-Page

National Institutes of Health/NINDS Section on Stroke Diagnostics and Therapeutics
10 Center Dr., MSC 1063
Building 10, Room B1D733
Bethesda, MD 20892-1063
Phone: 301-435-9321
Email: NINDS.NIH.gov/Contact_Us

The Internet Stroke Center
Website: StrokeCenter.org

Stroke Comeback Center
Website: StrokeComebackCenter.org

Montgomery County Stroke Association
P.O. Box 9343
Silver Spring, MD 20916-9343
Phone: 301-681-6272
Email: mcstroke@comcast.net
Website: MCStroke.org

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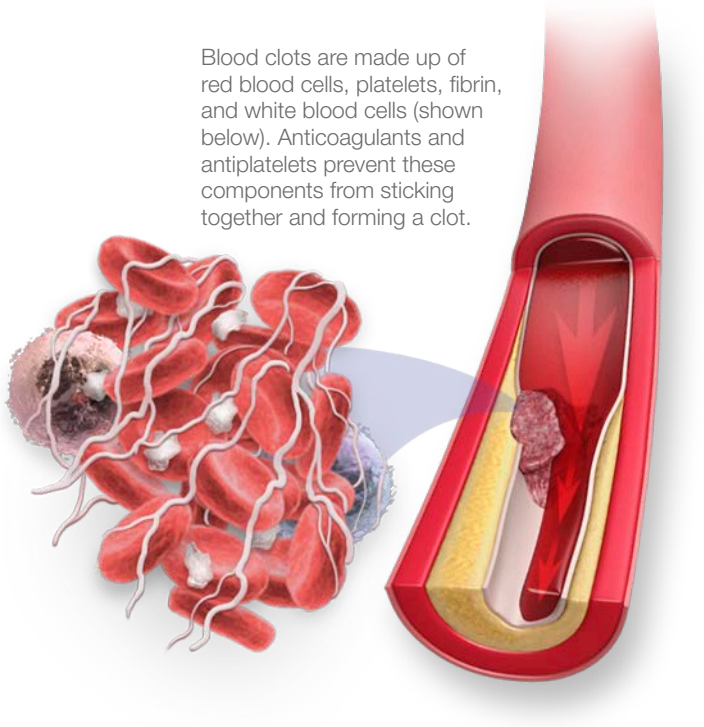
Anticoagulants and Antiplatelet Agents

Anticoagulants and antiplatelet agents are medicines that reduce blood clotting in an artery, vein or the heart. Blood clots can block the blood flow to your heart muscle and cause a heart attack. They can also block blood flow to your brain, causing a stroke. Doctors use these medicines to help patients prevent strokes caused by a blood clot.



Blood clots are made up of red blood cells, platelets, fibrin, and white blood cells (shown below). Anticoagulants and antiplatelets prevent these components from sticking together and forming a clot.

What should I know about anticoagulants?

Anticoagulants (sometimes known as "blood thinners") are medicines that delay the clotting of blood. Examples are heparin, warfarin, dabigitran, apixaban, and rivoraxaban.

Anticoagulants make it harder for clots to form or keep existing clots from growing in your heart, veins or arteries. Treatment should be managed by your healthcare provider.

- Follow your doctor's (or other healthcare provider's) instructions.
- If you take warfarin or heparin, have regular blood tests so your doctor can tell how the medicine is working.
  - The test for people on warfarin is called a prothrombin time (PT) or International Normalized Ratio (INR) test.
  - The test for persons on heparin is called an activated partial thromboplastin time (PTT) test.
- Never take aspirin with anticoagulants unless your doctor tells you to.
- You must tell other healthcare providers that you're taking anticoagulants.
- Always check with your doctor before taking other medicines or supplements, such as aspirin, vitamins, cold medicine, pain medicine, sleeping pills or antibiotics. These can affect the way anticoagulants work by strengthening or weakening them.
  - Let your doctor know if you have been started on any new medications that might interfere with the action of warfarin.
- Discuss your diet with your healthcare providers. Foods rich in Vitamin K can reduce the effectiveness of warfarin. Vitamin K is found in leafy, green vegetables, fish, liver, lentils, soybeans, and some vegetable oils.
- Tell your family that you take anticoagulant medicine and carry your emergency medical ID card with you.

Could anticoagulants cause problems?

If you do as your doctor tells you, there probably won't be problems. But you must tell your doctor right away if:

- Your urine turns pink or red. This could be a sign of urinary tract bleeding.

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- Your stools turn red, dark brown or black. This could be a sign of intestinal bleeding.
- You bleed more than normal when you have your period.
- Your gums bleed.
- You have a very bad headache or stomach pain that doesn't go away.
- You get sick or feel weak, faint or dizzy.
- You think you're pregnant.
- You often find bruises or blood blisters.
- You have an accident of any kind.

What should I know about antiplatelet agents?

Antiplatelet medicines keep blood clots from forming by preventing blood platelets from sticking together. They are used to treat patients with atherosclerosis or with increased clotting tendencies. In atherosclerosis deposits of cholesterol (plaque) form along inner walls of blood vessels, creating the conditions for blood clots to form on top of the plaque, blocking the blood vessel.

Many heart attack and stroke patients — and people seeking to avoid these events — are treated with two types of antiplatelet agents to prevent blood clotting; aspirin and a $P2Y_{12}$ inhibitor. This is called dual antiplatelet therapy (DAPT).

Almost everyone with coronary artery disease, including those who have had a heart attack, stent, or CABG, are treated with aspirin for the rest of their lives. Aspirin can help prevent an ischemic stroke. It can also help if you have had a TIA or if you have heart problems.

$P2Y_{12}$ inhibitors are usually prescribed for months or years in addition to the aspirin therapy. You may be prescribed one of three of these medications — clopidogrel, prasugrel, or ticagrelor. Prasugrel should not be prescribed if you have had a stroke or a transient ischemic attack (TIA). Which one of these your doctor prescribes will be based on what he or she feels is best for you, based on your risk of blood clots and bleeding.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit **StrokeAssociation.org.**
2. Sign up to get *Stroke Connection* magazine, a free magazine for stroke survivors and caregivers at **strokeconnection.org**.
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork**.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What kind of aspirin or other antiplatelet agent should I take?

What is the right dose for me?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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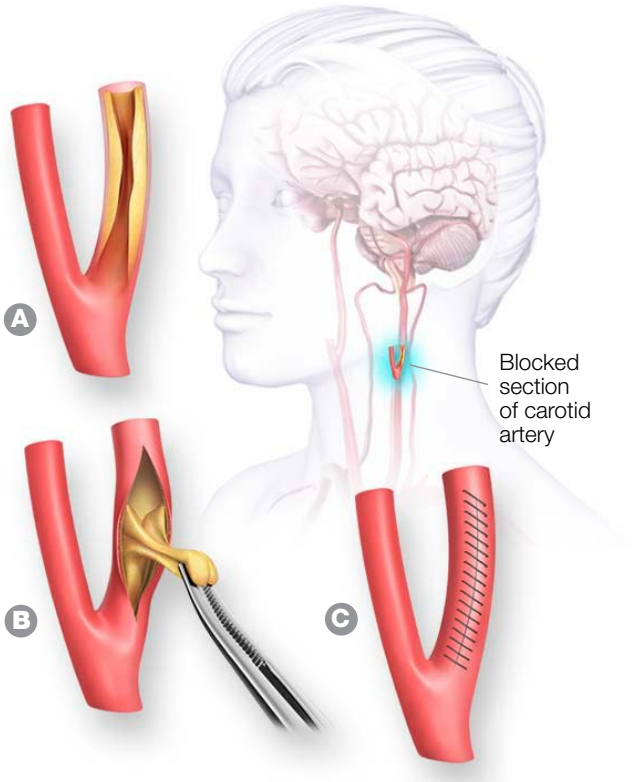
Carotid Endarterectomy

Carotid endarterectomy is a surgery to remove fatty deposits (plaque) that are narrowing the arteries in your neck. These are called the carotid arteries. They supply blood and oxygen to the front part of your brain. If plaque and other fatty materials block an artery, it slows or blocks the blood flow, and you could have a stroke.



A: The blocked section of the carotid artery is identified.
B: The artery is opened and the plaque is removed.
C: The cleaned artery is sutured shut.

Why do I need it?

Your doctor has given you one or more tests that show there is blockage of one or both of your carotid arteries. You may have had transient ischemic attacks (TIAs). A TIA is caused by a blood clot that lasts only a few minutes and usually causes no permanent injury. TIAs can serve as warning signs of a major stroke. About 15 percent of these are followed by a stroke in the following year. If you need this operation, it can stop TIAs from reoccurring and can reduce your risk for a stroke.

How is it done?

- You'll get medicine to make you sleep and prevent pain. In some cases the doctors may do this surgery while you are awake.
- The doctor makes a small cut in your neck at the spot where your carotid artery is blocked or narrowed.
- The doctor opens up the narrowed artery and removes the plaque.
- The doctor will make the artery as smooth and clean as possible.
- The artery and the cut will be closed up (sutured).
- The surgery usually takes about one or two hours.

What about afterwards?

- You'll wake up in the hospital and may feel confused at first.
- Your neck may be sore or will hurt for a couple of days.
- You may have a bruise where the surgery was done.
- Your doctor may prescribe medication for control of any pain you might have.
- It may be hard to swallow at first. Your doctor may ask you to eat a soft diet at first and then move you to a normal diet.

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- You'll probably go home in a day or two.
- Your doctor will give you instructions on what you can and cannot do after the surgery. For example, you may be told not to lift anything heavy for a few weeks after the surgery.
- Ask your doctor when you can to return to work.
- Your doctor will prescribe medications to prevent blood clotting such as aspirin, clopidogrel or the combination of aspirin and dipyridamole.
- You should make healthy lifestyle changes to help reduce the chance of new plaque deposits and to lower your risk of stroke.

How can I reduce my risk of stroke?

- Have your blood pressure checked often and manage high blood pressure.
- Don't smoke, and avoid second-hand smoke.
- Reach and maintain a healthy weight.
- Get regular physical activity.
- Have your blood sugar tested, and control diabetes if you have it.
- Eat less salt, saturated fat and *trans* fat.
- Limit alcohol to no more than two drinks a day for men, one drink a day for women.
- Take your medications exactly as prescribed.

Managing your blood pressure is a great way to reduce your risk of stroke.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit **StrokeAssociation.org.**
2. Sign up to get **Stroke Connection** magazine, a free magazine for stroke survivors and caregivers at **strokeconnection.org**
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork.**

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

Could I have a stroke during surgery?

Will I need a surgery again?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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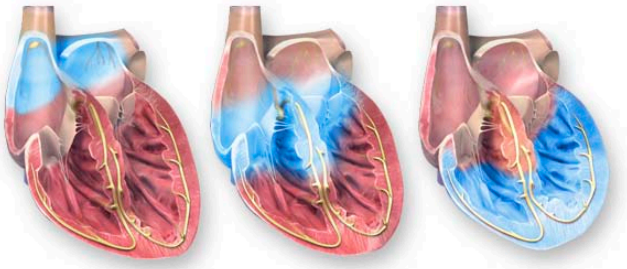
What Is Atrial Fibrillation?

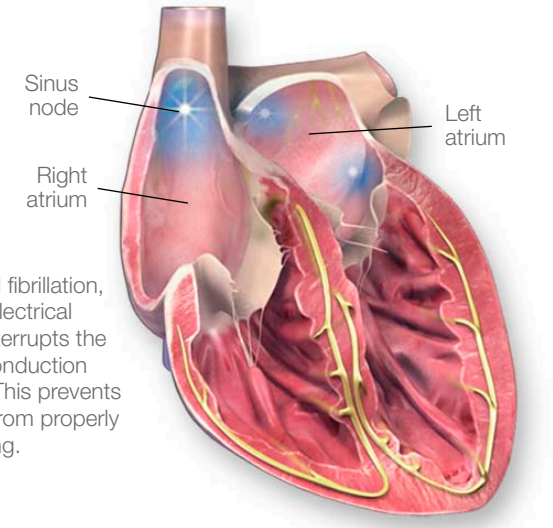
Normally, your heart contracts and relaxes to a regular beat. Certain cells in your heart make electric signals that cause the heart to contract and pump blood. These electrical signals show up on an electrocardiogram (ECG) recording. Your doctor can read your ECG to find out if the electric signals are normal.

In atrial fibrillation (AFib), the heart's two small upper chambers (atria) don't beat the way they should. Instead of beating in a normal pattern, the atria beat irregularly and too fast, quivering like a bowl of gelatin. It's important for the heart to pump properly so your body gets the oxygen and food it needs.

Your heart has a natural pacemaker, called the "sinus node," that makes electrical signals. These signals cause the heart to contract and pump blood.



The illustrations above show normal conduction and contraction.



With atrial fibrillation, random electrical activity interrupts the normal conduction rhythm. This prevents the atria from properly contracting.

How do I know I have atrial fibrillation?

Here are some of the symptoms you may have:

- Irregular and rapid heartbeat
- Heart palpitations or rapid thumping inside the chest
- Dizziness, sweating and chest pain or pressure
- Shortness of breath or anxiety
- Tiring more easily when exercising
- Fainting (syncope)

Can AFib lead to other problems?

Yes. You can live with AFib, but it can lead to other medical problems including:

- Stroke
- Heart failure
- Chronic fatigue
- Additional heart rhythm problems
- Inconsistent blood supply

The risk of stroke is about five times higher in people with AFib. This is because with AFib blood can pool in the atria and blood clots can form.

What can be done to correct it?

Treatment options may include one or more of the following:

- Medicines, such as beta blockers or antiarrhythmics, to help return your heart rate to a normal rhythm.
- Medicines, such as digitalis, calcium channel blockers or amiodarone to help slow your heart rate.
- Blood thinners to keep blood clots from forming.
- Electrical cardioversion (an electric shock) to change the beat of your heart back to normal.

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- Surgery, a pacemaker or other procedures may be needed.

Your treatment will depend on the underlying cause of your AFib and your level of disability.

How can I lower my risk of stroke?

To reduce your stroke risk, your doctor may prescribe you drugs to keep blood clots from forming. Two examples are anticoagulants and antiplatelets such as warfarin and aspirin.

Anticoagulants include warfarin and three other more recently FDA approved drugs referred to as novel oral anticoagulants or NOACs — dabigatran, rivoraxaban and apixaban.

- Always tell your doctor, dentist and pharmacist if you take any of these medications.
- If you have any unusual bleeding or bruising or other problems, tell your doctor right away.

If you have AFib, your doctor may prescribe medications to help prevent clots from forming in your arteries.

HOW CAN I LEARN MORE?

1. Call **1-800-AHA-USA1** (1-800-242-8721), or visit **heart.org** to learn more about heart disease and stroke.
2. Sign up to get *Heart Insight*, a free magazine for heart patients and their families, at **heartinsight.org**.
3. Connect with others sharing similar journeys with heart disease and stroke by joining our Support Network at **heart.org/supportnetwork**.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What should my pulse be?

How do I take my pulse?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **heart.org/answersbyheart** to learn more.

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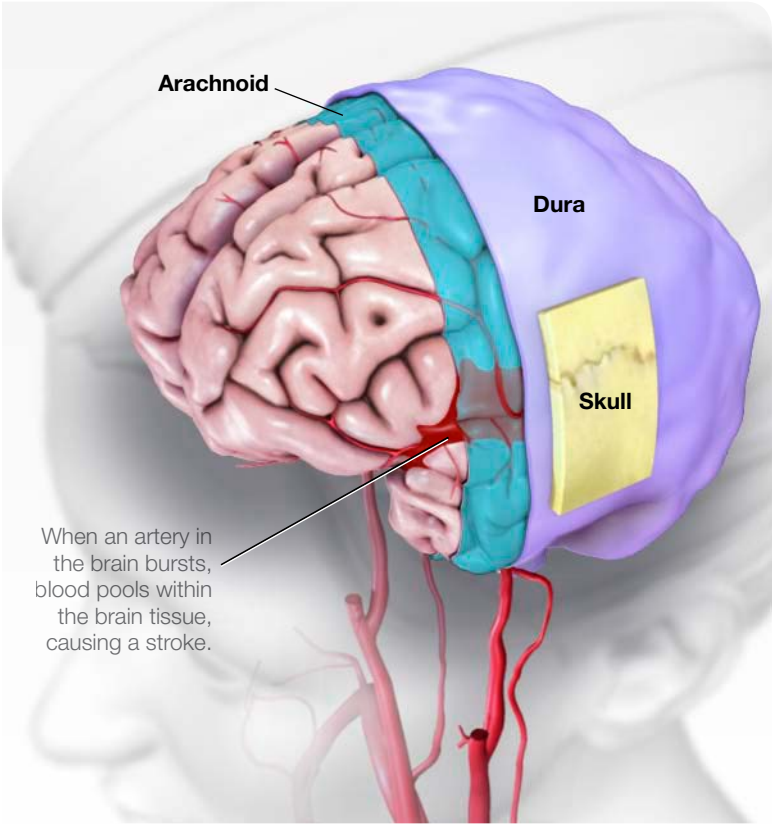
Hemorrhagic Stroke

About 13 percent of strokes happen when a blood vessel ruptures in or near the brain. This is called a hemorrhagic stroke as shown at right.

When a hemorrhagic stroke happens, blood collects in the brain tissue. This is toxic for the brain tissue causing the cells in that area to weaken and die.



A type of hemorrhagic stroke, known as a subarachnoid hemorrhage, can occur when an aneurysm (a blood-filled pouch that balloons out from an artery) on or near the surface of the brain ruptures, flooding the space between the skull and the brain with blood.

Are all hemorrhagic strokes the same?

There are two kinds of hemorrhagic stroke. In both, a blood vessel ruptures, disrupting blood flow to part of the brain.

Intracerebral hemorrhages (most common type of hemorrhagic stroke):

- Occur when a blood vessel bleeds or ruptures into the tissue deep within the brain.
- Are most often caused by chronically high blood pressure or aging blood vessels.
- Are sometimes caused by an arteriovenous malformation (AVM). An AVM is a cluster of abnormally formed blood vessels. Any one of these vessels can rupture, also causing bleeding into the brain.

Subarachnoid hemorrhages:

- Occur when an aneurysm (a blood-filled pouch that balloons out from an artery) on or near the surface of the brain ruptures and bleeds into the space between the brain and the skull.
- Are often caused by high blood pressure.

In addition to high blood pressure, factors that increase the risk of hemorrhagic strokes include:

- cigarette smoking
- use of oral contraceptives (particularly those with high estrogen content)
- excessive alcohol intake
- use of illegal drugs

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How are hemorrhagic strokes diagnosed?

When someone has shown symptoms of a stroke or a TIA (transient ischemic attack), a doctor will gather information and make a diagnosis. He or she will review the events that have occurred and will:

- get a medical history
- do a physical and neurological examination
- have certain laboratory (blood) tests done
- get a CT or MRI scan of the brain
- study the results of other diagnostic tests that might be needed

Diagnostic tests examine how the brain looks, works and gets its blood supply. They can outline the injured brain area. Diagnostic tests fall into three categories.

- Imaging tests give a picture of the brain similar to X-rays.
- Electrical tests record the electrical impulses of the brain (also called an EEG).
- Blood flow tests show any problem that may cause changes in blood flow to the brain.

How are hemorrhagic strokes treated?

Because hemorrhages may be life-threatening, hospital care is required. Medication is used to control high blood pressure. Other medicine may be given to reduce the brain swelling that follows a stroke.

Surgery may be needed depending on the cause and type of the hemorrhage. Surgery is often recommended to either place a metal clip at the base of an aneurysm or to remove the abnormal vessels that make up an AVM.

Some procedures are less invasive and use of a catheter that goes in through a major artery in the leg or arm. The catheter is guided to the aneurysm or AVM where it places a device, such as a coil, to prevent rupture.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit **StrokeAssociation.org.**
2. Sign up to get Stroke Connection magazine, a free magazine for stroke survivors and caregivers at **strokeconnection.org.**
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork.**

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What can I do to help prevent another stroke?

How can I control high blood pressure?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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High Blood Pressure and Stroke

What is high blood pressure (HBP)?

High blood pressure means that the force of the blood pushing against the sides of your arteries is consistently in the high range. This can lead to stroke, heart attack, heart failure or kidney failure.

Two numbers represent blood pressure. The higher (systolic) number shows the pressure while the heart is beating. The lower (diastolic) number shows the pressure when the heart is resting between beats. The systolic number is always listed first. Blood pressure is measured in millimeters of mercury (mm Hg).

Normal blood pressure is below 120/80 mm Hg. If you're an adult and your systolic pressure is 120 to 129, and your diastolic pressure is less than 80, you have elevated blood pressure. High blood pressure is a pressure of 130 systolic or higher, or 80 diastolic or higher, that stays high over time.

How does high blood pressure increase stroke risk?

High blood pressure is the single most important risk factor for stroke because it's the leading cause of stroke.

HBP adds to your heart's workload and damages your arteries and organs over time. Compared to people whose blood pressure is normal, people with HBP are more likely to have a stroke.

About 87 percent of strokes are caused by narrowed or clogged blood vessels in the brain that cut off the blood flow to brain cells. This is an **ischemic stroke**. High blood pressure causes damage to the inner lining of the blood vessels. This adds to any blockage that is already within the artery wall.

About 13 percent of strokes occur when a blood vessel ruptures in or near the brain. This is a **hemorrhagic stroke**. Chronic HBP or aging blood vessels are the main causes of this type of stroke. HBP puts more pressure on the blood vessels until they can no longer maintain the pressure and the blood vessel ruptures over time.

Am I at higher risk for HBP?

There are risk factors that increase your chances of developing HBP. Some you can control, and some you can't.

Those that can be controlled are:

- Smoking and exposure to secondhand smoke
- Diabetes
- Being obese or overweight
- High cholesterol
- Unhealthy diet (high in sodium, low in potassium, and drinking too much alcohol)

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- Physical inactivity

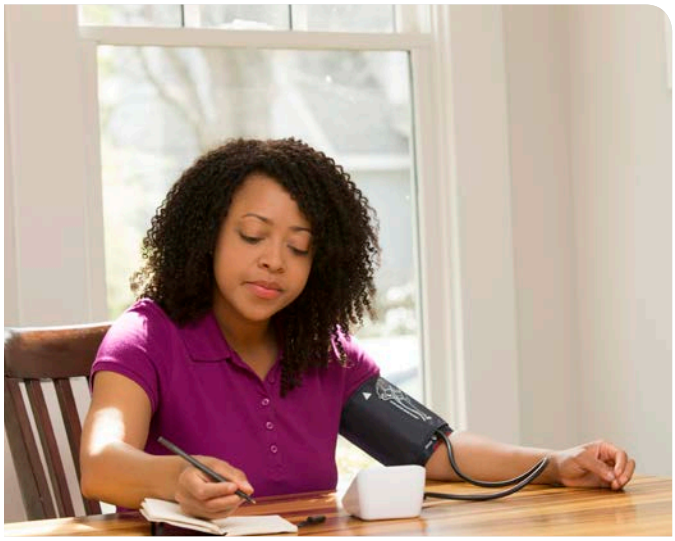
Factors that cannot be modified or are difficult to control are:

- Family history of high blood pressure
- Race/ethnicity
- Increasing age
- Gender (males)
- Chronic kidney disease
- Obstructive sleep apnea

Socioeconomic status and psychosocial stress are also risk factors for HBP. These can affect access to basic living necessities, medication, healthcare providers, and the ability to adopt lifestyle changes.

How can I control high blood pressure?

- Don't smoke and avoid secondhand smoke.
- Lose weight if you're overweight.
- Eat a healthy diet that's low in soldium (salt), saturated fat, and *trans* fat.
- Eat fruits and vegetables, whole grains and low-fat dairy products. Include foods rich in potassium.



The only way to know if your blood pressure is high is to check it regularly. Know what your blood pressure should be and try to keep it at that level.

- Enjoy regular physical activity.
- Limit alcohol to no more than two drinks a day if you're a man and one drink a day if you're a woman.
- Take all medicines as prescribed to control your blood pressure.

HOW CAN I LEARN MORE?

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3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork.**

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What should my blood pressure be?

How often should my blood pressure be checked?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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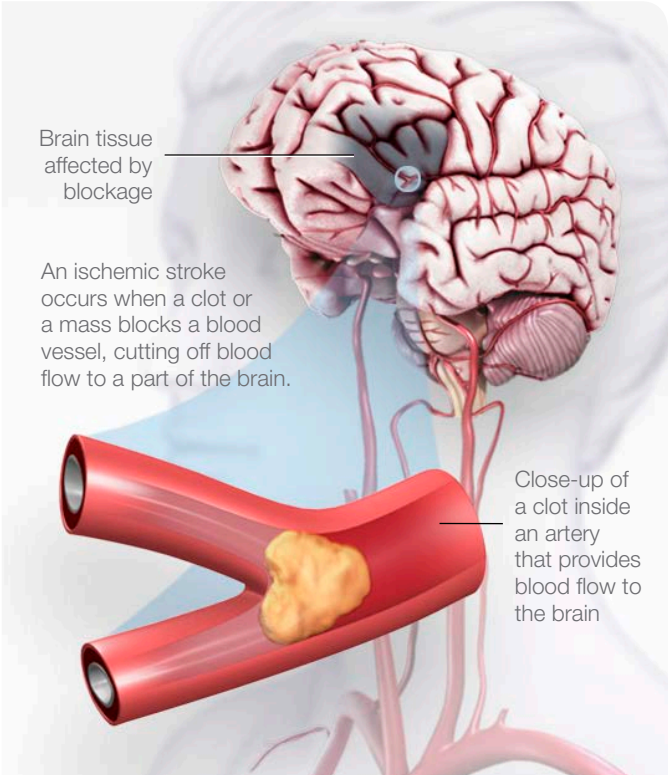
Ischemic Stroke

The majority of strokes occur when blood vessels to the brain become narrowed or clogged with fatty deposits called plaque. This cuts off blood flow to brain cells. A stroke caused by lack of blood reaching part of the brain is called an ischemic stroke. High blood pressure is a leading risk factor for ischemic stroke that you can change.



Are all ischemic strokes the same?

There are two types of ischemic strokes.

- **Thrombotic strokes** are caused by a blood clot (thrombus) in an artery going to the brain. The clot blocks blood flow to part of the brain. Blood clots usually form in arteries damaged by plaque.
- **Embolic strokes** are caused by a wandering clot (embolus) that's formed elsewhere (usually in the heart or neck arteries). Clots are carried in the bloodstream and block a blood vessel in or leading to the brain.

How are ischemic strokes diagnosed?

When someone has shown symptoms of a stroke or a TIA (transient ischemic attack), a doctor will gather information and make a diagnosis. He or she will review the events that have occurred and will:

- get a medical history from you or a family member.
- do a physical and neurological examination.
- have certain lab (blood) tests done.
- get a CT (computed tomography) or MRI (magnetic resonance imaging) scan of the brain.
- study the results of other diagnostic tests that might be needed.

How are ischemic strokes treated?

Acute treatment is the immediate treatment given by the healthcare team when a stroke happens. The goal of acute treatment is to keep the amount of brain injury as small as possible. This is done by restoring blood flow to the part of the brain where the blockage was quickly.

There is a clot-dissolving drug called IV Alteplase (tPA) to treat stroke. It can stop a stroke in progress and reduce disability from stroke by breaking up a blood clot that might be stopping the flow of blood to the brain. To be eligible for Alteplase, you must seek emergency treatment right away and have a clot-caused stroke. It must be given within 3 to 4.5 hours after symptoms start. Medication may also be used to treat brain swelling that sometimes occurs after a stroke.

For people with blood clots in larger arteries, Alteplase may not dissolve them completely. In this case, a

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procedure, called **mechanical thrombectomy**, should be done within six to 24 hours of the first symptoms of stroke. In most cases this is done only after the patient receives IV Alteplase. To remove the clot, doctors thread a catheter (thin tube) with a stent through an artery in the groin up to the blocked artery in the brain. The stent opens and grabs the clot. The doctors then remove the stent with the trapped clot. If necessary, other devices may also be used. Patients must meet certain criteria to be eligible for this procedure.

When someone has a stroke, they are at risk of another. Once the medical team identifies what caused the stroke, they may prescribe treatments or procedures to reduce the risk of a second stroke, such as:

- Antiplatelet agents, such as aspirin and clopidogrel, and anticoagulants interfere with the blood's ability to clot. This can play an important role in preventing a stroke.
- Carotid endarterectomy is a procedure in which blood vessel blockage (blood clot or fatty plaque) is surgically removed from the carotid artery in the neck. This reopens the artery and the blood flow to the brain. This is only done in people who have a large blockage.
- Doctors sometimes use balloon angioplasty and implantable steel screens called stents to treat and reduce fatty buildup clogging a vessel that may make it easy for clots to form in the bloodstream.

Aspirin can play an important role in preventing stroke because it helps keep blood from clotting.

Sometimes a stroke is the first sign a person has of other health conditions, such as high blood pressure, diabetes, atrial fibrillation (a heart rhythm disorder), or other vascular disease. If any of these are diagnosed, the healthcare team will prescribe appropriate treatment.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit **StrokeAssociation.org.**
2. Sign up to get *Stroke Connection* magazine, a free magazine for stroke survivors and caregivers at **strokeconnection.org**.
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork.**

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What can I do to help prevent another stroke?

What medications may I be given?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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Lifestyle Changes To Prevent Stroke

You can do plenty to make your heart and blood vessels healthy, even if you've had a stroke. A healthy lifestyle plays a big part in decreasing your risk for disability and death from stroke and heart attack.

How can I make my lifestyle healthier?

Here are steps to take to be healthier and reduce your risk of stroke:

- Don't smoke and avoid second-hand smoke.
- Improve your eating habits. Eat foods low in saturated fat, *trans* fat, sodium and added sugars.
- Be physically active.
- Take your medicine as directed.
- Get your blood pressure checked regularly and work with your healthcare provider to manage it if it's high.
- Reach and maintain a healthy weight.
- Decrease your stress level.
- Seek emotional support when it's needed.
- Have regular medical checkups.

How do I stop smoking?

- The first and more important step is making a decision to quit — and commit to stick to it.
- Ask your healthcare provider for information, programs and medications that may help.
- Fight the urge to smoke by going to smoke-free facilities. Avoid staying around people who smoke.
- Keep busy doing things that make it hard to smoke, like working in the yard.
- Remind yourself that smoking causes many diseases, can harm others and is deadly.
- Ask your family and friends to support you.

How do I change my eating habits?

- Ask your doctor, nurse or a licensed nutritionist or registered dietician for help.
- Be aware of your special needs, especially if you have high blood pressure, high cholesterol or diabetes.
- Avoid foods like fatty meats, butter and cream, which are high in saturated fat.
- Eat moderate amounts of food and cut down on saturated fat, *trans* fat, sugar and salt.
- Bake, broil, roast and boil foods instead of frying.

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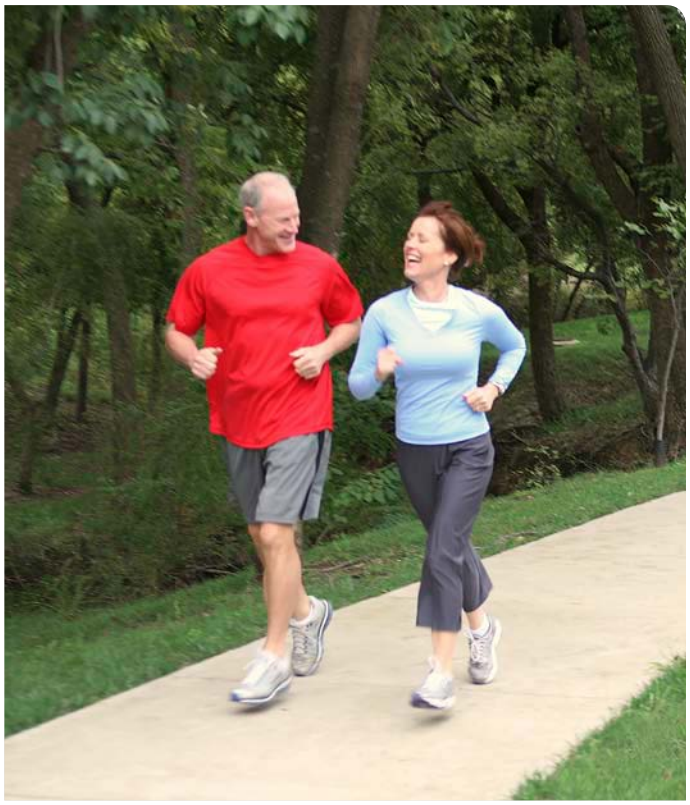
- Read nutrition labels on packaged meals. Many are very high in sodium.
- Limit alcohol to one drink a day for women; two drinks per day for men.
- Eat more fruit, vegetables, whole-grains, dried peas and beans, pasta, fish, poultry and lean meats.

What about physical activity?

- If you have a chronic medical condition, check with your doctor before you start.
- Start slowly and build up to at least 150 minutes of moderate physical activity (such as brisk walking) a week. Or, you can do 75 minutes of vigorous-intensity physical activity, or a combination of the two, to improve overall cardiovascular health.
- Look for even small chances to be more active. Take the stairs instead of an elevator and park farther from your destination.



If you have a chronic medical condition, check with your doctor before starting an exercise program.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit **StrokeAssociation.org.**
2. Sign up to get *Stroke Connection* magazine, a free magazine for stroke survivors and caregivers at **strokeconnection.org**.
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork.**

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What is the most important change I can make?

What kind of physical activity can I do safely?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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Risk Factors for Stroke

Knowing your risk factors for stroke is the first step in preventing a stroke. You can change or treat some risk factors, but others you can't. By having regular medical checkups and knowing your risk, you can focus on what you can change and lower your risk of stroke.

What risk factors can I change or treat?

- **High blood pressure.** This is the single most important risk factor for stroke because it's the leading cause of stroke. Know your blood pressure and have it checked every year. Normal blood pressure is below 120/80. If you have been told that you have high blood pressure, work with your healthcare provider to reduce it.
- **Smoking.** Smoking damages blood vessels. This can lead to blockages within those blood vessels, causing a stroke. Don't smoke and avoid second-hand smoke.
- **Diabetes.** Having diabetes more than doubles your risk of stroke. Work with your doctor to manage diabetes.
- **High cholesterol.** High cholesterol increases the risk of blocked arteries. If an artery leading to the brain becomes blocked, a stroke can result.
- **Physical inactivity and obesity.** Being inactive, obese, or both, can increase your risk of heart disease and stroke.
- **Carotid or other artery disease.** The carotid arteries in your neck supply most of the blood to your brain. A carotid artery damaged by a fatty buildup of plaque inside the artery wall may become blocked by a blood clot. This causes a stroke.
- **Transient ischemic attacks (TIAs).** Recognizing and treating TIAs can reduce the risk of a major stroke. TIAs produce stroke-like symptoms but most have no lasting effects. Know the warning signs of a TIA and seek emergency medical treatment immediately.
- **Atrial fibrillation (AFib) or other heart disease.** In AFib the heart's upper chambers quiver (like a bowl of gelatin) rather than beating in an organized, rhythmic way. This can cause the blood to pool and clot, increasing the risk of stroke. AFib increases risk of stroke five times. People with other types of heart disease have a higher risk of stroke, too.
- **Certain blood disorders.** A high red blood cell count makes clots more likely, raising the risk of stroke. Sickle cell anemia increases stroke risk because the "sickled" cells stick to blood vessel walls and may block arteries.
- **Excessive alcohol intake.** Drinking an average of more than one drink per day for women or more than two drinks a day for men can raise blood pressure. Binge drinking can lead to stroke.

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- **Illegal drug use.** Drugs including cocaine, ecstasy amphetamines, and heroin are associated with an increased risk of stroke.
- **Sleep apnea.** Sleep disordered breathing contributes to risk of stroke. Increasing sleep apnea severity is associated with increasing risk.

What are the risk factors I can't control?

- **Increasing age.** Stroke affects people of all ages. But the older you are, the greater your stroke risk.
- **Gender.** Women have a higher lifetime risk of stroke than men do. Use of birth control pills and pregnancy pose special stroke risks for women.
- **Heredity and race.** People whose close blood relations have had a stroke have a higher risk of stroke. African Americans have a higher risk of death and disability from stroke than whites. This is because they have high blood pressure more often. Hispanic Americans are also at higher risk of stroke.
- **Prior stroke.** Someone who has had a stroke is at higher risk of having another one.

Age, gender, heredity and race are among the stroke risk factors that you can't control.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit **StrokeAssociation.org.**
2. Sign up to get *Stroke Connection* magazine, a free magazine for stroke survivors and caregivers at **strokeconnection.org**.
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork.**

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What are my risk factors for stroke?

What are the warning signs of TIAs and stroke?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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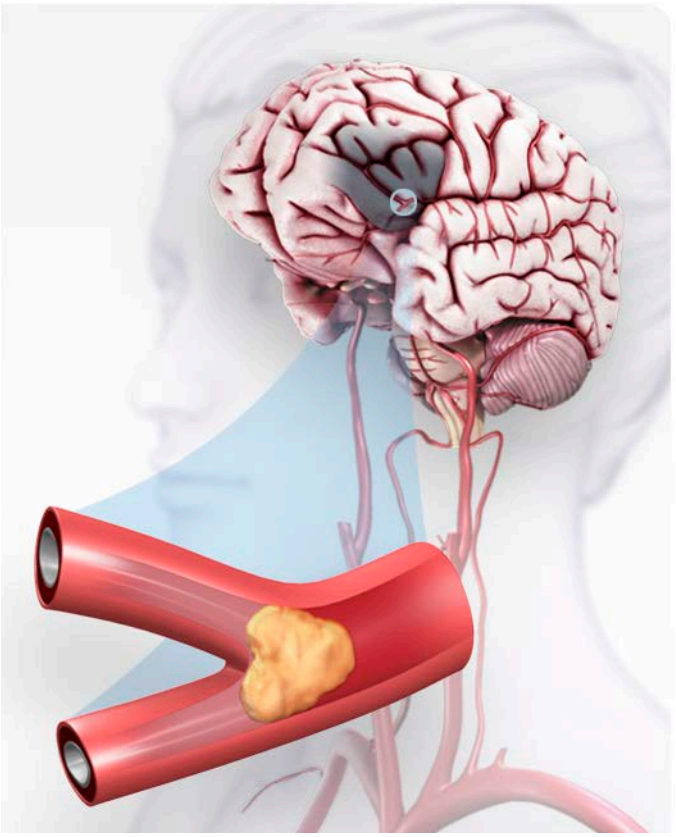
Stroke, TIA and Warning Signs



Stroke occurs when a blood vessel bringing blood and oxygen to the brain gets blocked by a clot or ruptures. When this happens, brain cells don't get the blood and oxygen that they need to survive. This causes nerve cells stop working and die within minutes. Then, the part of the body they control are affected.

The effects of stroke may be permanent depending on how many cells are lost, where they are in the brain, and other factors. Strokes can cause weakness (paralysis), affect language and vision, and cause other problems.

Stroke is the No. 5 cause of death and a leading cause of serious, long-term disability in America.

What is a TIA?

TIA, or transient ischemic attack, is a "minor or mini stroke" that occurs when a blood clot blocks an artery for a short time. The symptoms of a TIA are the same as those of a stroke, but they usually last only a few minutes. About 15 percent of major strokes are preceded by TIAs, so don't ignore a TIA. **Call 9-1-1 or seek emergency medical attention immediately!**

Is stroke preventable?

Yes. Stroke is largely preventable. You can reduce your stroke risk by living a healthy lifestyle — controlling high blood pressure; not smoking; eating a healthy diet low in saturated and *trans* fats; being physically active; maintaining a healthy body weight; managing diabetes; and drinking alcohol moderately or not at all.

Can stroke be treated?

If you're having a stroke, time is critical. Immediate treatment may minimize the long-term effects of a stroke and even prevent death. Treatment will vary depending on what type of stroke you had.

There is a clot-dissolving drug called IV Alteplase (tPA) to treat stroke. It can stop a stroke in progress and reduce disability from stroke by breaking up a blood clot that might be stopping the flow of blood to the brain. To be eligible for Alteplase, you must seek emergency treatment right away and have a clot-caused stroke. It must be given within 3 to 4.5 hours after symptoms start. The sooner it is given, the greater the possibility of a better outcome.

Another treatment option is called a **mechanical thrombectomy**. In this procedure, specially trained doctors try to remove the blood clot by using a wire-cage device called a **stent retriever**. To remove the clot, doctors thread a catheter (thin tube) with a stent through an artery in the groin up to the blocked artery in the brain. The stent opens and grabs the clot. The doctors then remove the stent with the trapped clot.

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This must be done within six hours to 24 hours of the first symptoms of stroke and only after the patient has received IV Alteplase. Patients must meet certain criteria to be eligible for this procedure.

What are warning signs of stroke?

You and your family should recognize the warning signs of stroke. You may have some or all of these signs. Note the time when symptoms start and call 9-1-1 or the emergency medical number in your area immediately. Stroke is a medical emergency!

Don't ignore these warning signs, even if they go away.

Stroke Warning Signs:

- Sudden numbness or weakness of the face, arm or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe headache with no known cause

F.A.S.T. is an easy way to remember how to recognize a stroke and what to do. Spot a stroke FAST. **F**ace drooping. **A**rm weakness. **S**peech Difficulty. **T**ime to call 9-1-1.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit **StrokeAssociation.org.**
2. Sign up to get Stroke Connection magazine, a free magazine for stroke survivors and caregivers at **strokeconnection.org**.
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork.**

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

Which facility close to me is best equipped to treat me if I am having stroke symptoms?

How can I reduce my risk for stroke?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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How Can I Quit Smoking?

Smoking harms almost every tissue and organ in the body, including your heart and blood vessels. Smoking also harms nonsmokers who are exposed to second-hand smoke.

If you smoke, you have good reason to worry about its effect on your health, your loved ones and others. Deciding to quit is a big step, and following through is just as important. Quitting smoking isn't easy, but others have done it, and you can too.

Is it too late to quit?

No matter how much or how long you've smoked, when you quit smoking, your risk of heart disease and stroke starts to drop. In the year after you quit smoking, your excess risk of coronary heart disease drops by 50 percent. After 15 years, your risk is as low as someone who has never smoked. While you may crave a cigarette after quitting, most people feel that quitting is the most positive thing they've ever done for themselves.

How do I quit?

It's never too late to quit. You are more likely to quit smoking for good if you prepare for two things: your last cigarette, and the cravings, urges and feelings that come with quitting. Think about quitting in five steps:

1. Set a Quit Date. Choose a date within the next seven days when you will quit smoking. Tell your family members and friends who are most likely to support your efforts.

2. Choose a method for quitting. There are several ways to quit smoking. Some include:

- Stop smoking all at once on your Quit Day.
- Reduce the number of cigarettes per day until you stop smoking completely.
- Smoke only part of your cigarette. If you use this method, you need to count how many puffs you take from each cigarette and reduce the number every two to three days.

3. Decide if you need medicines or other help to quit. Talk to your healthcare provider to discuss which medicine is best for you, and to get instructions about how to use it. These may include nicotine replacements (gum, spray, patch or inhaler) or prescription medicines such as bupropion hydrochloride or varenicline. You may also ask about referral to a smoking cessation program.

4. Plan for your Quit Day. Get rid of all cigarettes, matches, lighters, ashtrays from your house. Find healthy substitutes for smoking. Go for walks. Carry sugarless gum or mints. Munch carrots or celery sticks.

5. Stop smoking on your Quit Day.

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What if I smoke after quitting?

It's hard to stay a nonsmoker once you've had a cigarette, so do everything you can to avoid that "one." The urge to smoke will pass. The first two to five minutes will be the toughest. If you do smoke after quitting:

- This doesn't mean you're a smoker again — do something now to get back on track.
- Don't punish or blame yourself — tell yourself you're still a nonsmoker.
- Think about why you smoked and decide what to do differently the next time.
- Sign a contract to stay a nonsmoker.

What happens after I quit?

- Your senses of smell and taste come back.
- Your smoker's cough will go away.
- You'll breathe much easier.
- You'll be free from the mess, smell and burns in clothing.
- You'll increase your chances of living longer and reduce your risk of heart disease and stroke.

HOW CAN I LEARN MORE?

1. Call **1-800-AHA-USA1** (1-800-242-8721), or visit **heart.org** to learn more about heart disease and stroke.
2. Sign up to get *Heart Insight*, a free magazine for heart patients and their families, at **heartinsight.org**.
3. Connect with others sharing similar journeys with heart disease and stroke by joining our Support Network at **heart.org/supportnetwork**.

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Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

When will the urges stop?

How can I keep from gaining weight?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **heart.org/answersbyheart** to learn more.

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How Can I Cook Healthfully?

A healthful eating plan means more than choosing the right foods to eat. It's important to prepare foods in a healthy way. Some ways of cooking are better than others in cutting saturated fat, *trans* fat, sodium, added sugars and calories. At the same time, you want to get as much nutritional value as possible.

You don't have to give up taste or the things you love. Just learn some heart-healthy cooking skills and you can have it all (almost)!

Stir-frying can be healthy and delicious! The high temperature and constant movement of the food keep it from sticking and burning. For vegetables, poultry or seafood, use a tiny bit of liquid vegetable oil in your stir fry pan.

What are good ways to cook?

- **Roast** — in the oven with a rack so the meat or poultry doesn't sit in its own fat drippings. Set at 350 degrees to avoid searing. Baste with unsweetened liquids like wine, salt-free or low sodium broth, tomato juice or lemon juice. Roasting is also a delicious way to serve seasonal vegetables.
- **Bake** — in the oven in covered or uncovered cookware. When you bake, food cooks slowly with gentle heat. This causes the moisture to evaporate slowly and enhances flavor.
- **Braise or Stew** — on top of the stove or in the oven with a little bit of liquid (water or broth). After cooking, you can refrigerate the food and remove any fat that has become solid on the top before reheating.
- **Poach** — by immersing foods such as skinless chicken, fish or eggs in simmering liquid.
- **Grill or Broil** — on a rack over high heat.
- **Sauté** — in a skillet or frying pan over direct heat. Use nonstick vegetable spray or a small amount of canola oil.
- **Stir-fry** — in a wok over high heat with a small amount of vegetable oil.
- **Microwave** — heat food quickly in a microwave-safe dish.

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- **Steam** — in a wire basket over simmering water. This can help keep some foods' shape and texture better than boiling.

How can I cut saturated fat and calories without losing taste?

- Add fruits, vegetables, and whole grains to your meals.
- Select lean cuts of meat and trim off any visible fat before cooking.
- After browning, put ground meat into a strainer lined with paper towels and rinse off any excess fat.
- Choose canned fish packed in water with no added salt or low sodium. Remove oils by draining canned tuna, salmon or sardines and rinsing them in water.
- Don't overcook vegetables. Steam or bake them instead of boiling so they keep more of their natural flavors and textures.
- Compare Nutrition Facts labels to find a tasty salad dressing that is lower in calories, saturated fat, and sodium.
- Use herbs and spices to add flavor to foods.

Instead of boiling vegetables, steam or bake them to keep more of their natural flavors and textures.

HOW CAN I LEARN MORE?

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Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What about desserts?

What's a good, healthy cookbook?

My Questions:

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How Do I Follow a Healthy Diet?

The American Heart Association recommends an eating plan that emphasizes intake of vegetables, fruits, and whole grains and includes low-fat dairy products, poultry, fish, legumes (dried beans and peas), nontropical vegetable oils, nuts and seeds. It should limit intake of sodium, sweets, sugar-sweetened beverages and red meats.

Vegetables

- One serving equals: 1 cup raw leafy vegetables (about the size of a small fist); ½ cup cut-up raw or cooked vegetables; ½ cup vegetable juice.
- Eat a variety of colors and types, especially deeply colored vegetables, such as spinach, carrots, and broccoli.
- Look for vegetables that are fresh, frozen, or canned in water without added sugar, saturated and *trans* fats, or salt.

Fruits

- One serving equals: 1 medium fruit (about the size of a baseball); ¼ cup dried fruit; ½ cup fresh, frozen, or canned fruit; ½ cup 100% fruit juice.
- Eat a variety of colors and types, especially deeply colored fruits such as peaches and berries.
- Eat whole fruits to get all of the nutrients (such as fiber) that can be missing in some juices.

Whole grains

- One serving equals: 1 slice bread; ½ cup hot cereal, 1 cup flaked cereal; or ½ cup cooked rice or pasta (about the size of a baseball).
- At least half of your servings should be high-fiber whole grains. Select items like whole-wheat bread, whole-grain crackers and brown rice.
- Aim for about 25-30 grams of fiber from foods each day.

Poultry, fish and lean meats (less than 6 cooked ounces per day)

- A 3 oz. portion is about the size of a deck of playing cards, ½ of a chicken breast or ¾ cup of flaked fish.
- Enjoy at least 2 servings of baked or grilled fish each week; especially fish high in omega-3 fatty acids, like salmon, trout, and herring. (3 oz. of grilled or baked fish is about the size of a checkbook).
- Trim all visible fat from meats before cooking.
- Remove skin from poultry before eating.

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Nuts, seeds, and legumes

- One serving equals: 1/3 cup or 1½ oz nuts; 2 Tbsp. peanut butter (no salt added); 2 Tbsp. or ½ oz seeds; ½ cup cooked legumes (dried beans or peas).
- Add beans to your soups, salads, and pasta dishes.
- Try unsalted nuts in your salads, stir-fries, or stirred into yogurt.

Low-fat dairy products

- One serving equals: 1 cup milk or yogurt or 1½ oz. low sodium, fat-free or low-fat cheese (about the size of 6 stacked dice).
- Use only milk products with 0% to 1% fat. 2% milk is not low-fat.
- Have only fat-free or low-fat yogurt with no added sugars.
- Use dry-curd, fat-free or low-fat cottage cheese.
- Cheeses (low-sodium, fat-free or low-fat) should have no more than 3 grams of fat per oz. and no more than 2 grams of saturated fat per oz.

HOW CAN I LEARN MORE?

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3. Connect with others sharing similar journeys with heart disease and stroke by joining our Support Network at **heart.org/supportnetwork**.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

How many calories should I eat each day?

What's a good, healthy cookbook?

My Questions:

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How Can I Monitor My Cholesterol, Blood Pressure and Weight?

High cholesterol, high blood pressure and being overweight or obese are major risk factors for heart disease and stroke. You should be tested regularly to know if you have high cholesterol or high blood pressure. That's because elevated cholesterol and blood pressure have no warning signs. And you should talk to your doctor about a healthy weight for you.

It is important to know your numbers. You can record your blood pressure, cholesterol and weight in the tracker below to track your progress. Work with you healthcare provider to determine your risk and manage it. Then ask how often to measure your levels.

Have your cholesterol levels measured every five years, or more often if needed. A fasting lipoprotein profile is the best measurement.

	Goal	Date	Date	Date	Date	Date
Blood Pressure						
Total Cholesterol						
Weight						

What can I do to lower my cholesterol and blood pressure?

- Eat a nutritious, well-balanced diet low in added sugars, sodium, and saturated and *trans* fats. A healthy diet includes a variety of fruits, vegetables, whole grains, low-fat dairy products, poultry, fish, legumes, nontropical vegetable oils and nuts. You can adapt this diet to your calorie needs and personal food preferences.
- Eat oily fish twice per week.
- Limit red meats. If you choose to eat red meats, select lean cuts of meat. Trim all visible fat and throw away the fat that cooks out of the meat.
- Remove the skin from poultry.
- Substitute meatless or "low-meat" main dishes for regular entrees.
- Aim for a diet that achieves 5% to 6% of calories from saturated fats and a reduced percent of calories from *trans* fat.
- Reduce your sodium intake to 1500 mg per day or less. Limit your intake of processed, packaged and fast foods which tend to be high in sodium.

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How Can I Monitor My Cholesterol, Blood Pressure and Weight?

- Limit the amount of alcohol you drink. If you're a woman, don't drink more than one drink a day. If you're a man, have no more than two drinks a day.
- Aim for at least 150 minutes a week of moderate-intensity physical activity, such as brisk walking.
- Reach and maintain a healthy weight.
- Don't smoke and avoid exposure to second-hand smoke.
- Take your medicines as prescribed.

How can I manage my weight?

If you are overweight or obese, your healthcare provider may advise you that you are at greater risk of heart disease, stroke and other diseases. Lifestyle changes such as the ones listed above may help you lose 3-5% of your body weight. This could result in meaningful health benefits. Larger weight losses (5-10%) can produce even greater benefits.

- Reduce the number of calories you eat. Excess calories add excess weight.
- Get at least 150 minutes of moderate-intensity aerobic physical activity, such as brisk walking, a week.

- To maintain weight lost or minimize regain, some people need to do physical activity each week (200-300 minutes).

HOW CAN I LEARN MORE?

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Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What kind of physical activity would be good for me?

How can I know what my weight should be?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **heart.org/answersbyheart** to learn more.

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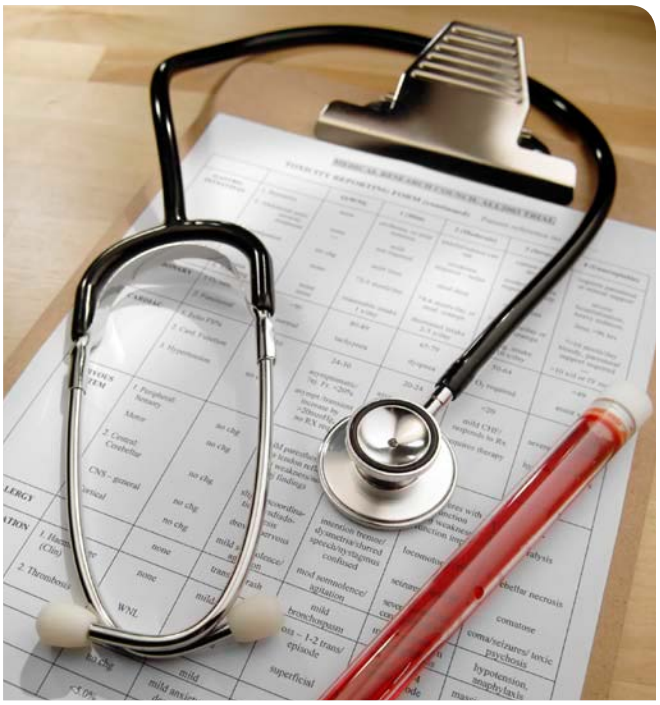
What Do My Cholesterol Levels Mean?



High cholesterol can increase your risk of heart attack and stroke. That's why it's important to have your cholesterol checked regularly. Your doctor will do a blood test called a fasting "lipoprotein profile" to measure your cholesterol levels. It assesses several types of fat in the blood. It is measured in milligrams per deciliter (mg/dL). The test gives you four results: total cholesterol, LDL (bad) and HDL (good) cholesterol, and triglycerides (blood fats).

What should my total cholesterol level be?

The ideal total cholesterol is less than 180 mg/dL.

In the past, treatment guidelines directed healthcare providers to focus on treating their patients to target goal levels for total cholesterol, LDL, HDL and triglycerides. However, current prevention guidelines recommend an approach that goes beyond cholesterol levels alone and considers overall risk assessment and reduction.

It's still important to know your numbers, but work with your healthcare provider to treat your risk.

What numbers do I need to know?

You should be aware of four key numbers: total cholesterol, blood pressure, blood sugar and body mass index (BMI).

These numbers are important because they will allow you and your healthcare provider to determine your risk for developing cardiovascular disease caused by atherosclerosis. This includes conditions such as angina (chest pain), heart attack, stroke (caused by blood clots) and peripheral artery disease (PAD).

Ideal numbers for most adults are:

Category	Ideal Numbers
Total Cholesterol	Less than 180 mg/dL
Blood Pressure	Less than 120/80 mm Hg
Fasting Blood Sugar	Less than 100 mg/dL
Body Mass Index (BMI)	Less than 25 kg/m^2

What is HDL cholesterol?

HDL cholesterol is called "good" cholesterol. Having a high level of HDL can lower your risk of heart attack and stroke.

HDL takes cholesterol away from your arteries and back to the liver. There, it's processed so that excess can be removed from your body. HDL may also remove cholesterol from plaque in the arteries.

What is LDL cholesterol?

LDL cholesterol is known as "bad" cholesterol. The body's tissues use some of this cholesterol to build cells. But when you have too much of it, LDL can build up inside your arteries.

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Together with other substances, it can form plaque (a thick, hard, fatty deposit). Plaque narrows the arteries and reduces blood flow. This is called atherosclerosis.

What are triglycerides?

Triglycerides are the most common type of fat in your body. They're also a major energy source. They come from food, and your body also makes them.

As people get older, gain excess weight (or both), their triglyceride and cholesterol levels tend to rise.

Know Your Numbers

Use the chart below to keep track of your numbers each time you have a test. Make sure you discuss these numbers with your doctor.

	1st Visit	2nd Visit	3rd Visit	4th Visit
Total Blood Cholesterol				
Blood Pressure				
Fasting Blood Sugar				
Body Mass Index (BMI)				

HOW CAN I LEARN MORE?

1. Call **1-800-AHA-USA1** (1-800-242-8721), or visit **heart.org** to learn more about heart disease and stroke.
2. Sign up to get ***Heart Insight,*** a free magazine for heart patients and their families, at **heartinsight.org.**
3. Connect with others sharing similar journeys with heart disease and stroke by joining our Support Network at **heart.org/supportnetwork.**

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

How often should I have my cholesterol checked?

How can I reduce my cholesterol?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **heart.org/answersbyheart** to learn more.

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Stroke Diagnosis

It's critical to diagnose a stroke in progress because the treatment for stroke depends on the type of stroke, and, in some cases, the location of the injury to the brain.

Other conditions with similar symptoms to stroke and transient ischemic attack (TIA) will need to be ruled out to diagnose stroke. Some of these include seizures, fainting, migraine headaches, drug overdose, heart problems or other general medical conditions.

A CT or "CAT" scan is usually one of the first tests used to diagnose stroke.

How is a stroke diagnosed?

The type of stroke must be determined. Ischemic strokes are caused by a blocked artery in the brain. A ruptured blood vessel causes a hemorrhagic stroke. Treatment for ischemic stroke is different than it is for a hemorrhagic stroke.

Ischemic strokes may be treated with a clot-busting drug, called IV Alteplase (tPA). So, it's important to receive a correct diagnosis before treatment begins. To receiveIV Alteplase, a doctor must diagnose your stroke as an ischemic stroke and treat you within **3 to 4.5 hours** of the onset of stroke symptoms. This treatment usually takes place in the hospital emergency department. If more than 4.5 hours passes, it can't be given.

For people with blood clots in larger arteries, Altaplase may not dissolve them completely. In this case, a procedure, called **mechanical thrombectomy**, should be done within six to 24 hours of the first symptoms of stroke. Patients must meet certain criteria to be eligible for this procedure.

In the emergency room, your doctor or stroke emergency team may:

- Ask you when the symptoms of the stroke started. This is critical in determining what treatment is best for you.
- Ask you about your medical history.
- Do a physical and neurological examination.
- Have certain lab (blood) tests done.
- Do a CT (computed tomography) or MRI (magnetic resonance imaging) brain scan. This determines what kind of stroke a person has had.
- Study the results of other diagnostic tests that might be needed.

What are the types of diagnostic tests?

Diagnostic tests examine how the brain looks, works and gets its blood supply. Most are safe and painless. These tests fall into two categories: 1) imaging tests and 2) blood flow tests.

Imaging Tests

- **CT (computed tomography) or CAT scan.** It uses radiation to create a picture (like an X-ray) of the brain. It's usually one of the first tests given to a patient with stroke symptoms. CT test results give valuable information about the cause of stroke and the location and extent of brain injury.
- **MRI (magnetic resonance imaging).** This test uses a large magnetic field to produce an image of the brain. Like the CT scan, it shows the location and extent

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of brain injury. The image produced by MRI is sharper and more detailed than a CT scan, so it's often used to diagnose small, deep injuries.

- **CTA (computed tomographic angiography).** In CTA, a special contrast material (dye) is injected into a vein and images are taken of the blood vessels to look for abnormalities such as an aneurysm.
- **MRA (magnetic resonance angiography).** In this test, the blood vessels are imaged through a magnetic resonance scanner to locate a cerebral aneurysm.

Additional advanced tests that may be done include CT perfusion, diffusion-weighted MRI or MRI perfusion.

Blood Flow Tests

These tests give information about the condition of arteries in your head and neck that supply blood to your brain.

- **Cerebral angiography (or cerebral arteriography).** Special substances are injected into the blood vessels and an X-ray is taken. This test gives a picture of the blood flow through the vessels. This allows the size and location of blockages to be reviewed. This test is very valuable in diagnosing aneurysms and malformed blood vessels.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit **strokeassociation.org**.
2. Sign up to get ***Stroke Connection*** magazine, a free magazine for stroke survivors and caregivers, at **strokeconnection.org**.
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork**.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your health care provider.

For example:

Do these tests cause any complications?

MY QUESTIONS:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit strokeassociation.org/letstalkaboutstroke to learn more.

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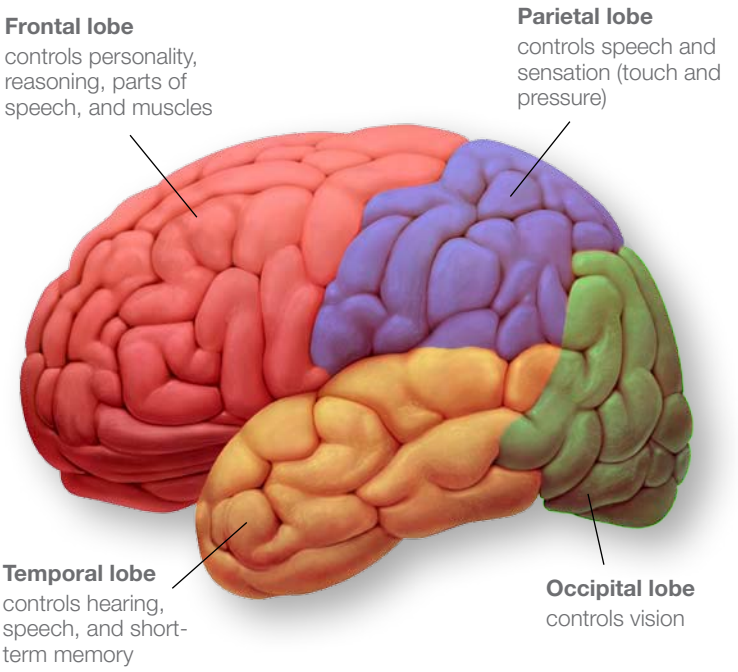
Changes Caused by Stroke

Your brain controls how you move, feel, communicate, think and act. Brain injury from a stroke may affect any of these abilities. Some changes are common no matter which side of the brain the injury is on. Others are based on which side of the brain the stroke injures.



What are the most common general effects of stroke?

- Hemiparesis (weakness on one side of the body) or hemiplegia (paralysis on one side of the body)
- Dysarthria (difficulty speaking or slurred speech), or dysphagia (trouble swallowing)
- Fatigue
- Loss of emotional control and changes in mood
- Cognitive changes (problems with memory, judgment, problem-solving or a combination of these)
- Behavior changes (personality changes, improper language or actions)
- Decreased field of vision (inability to see peripheral vision) and trouble with visual perception

What are common changes with a left-brain injury?

- Paralysis or weakness on the right side of the body.
- Aphasia (difficulty getting your words out or understanding what is being said).
- Behavior that may be more reserved and cautious than before.

What are common changes with a right-brain injury?

- Paralysis or weakness on the left side of the body.
- One-sided neglect, which is a lack of awareness of the left side of the body. It may also be a lack of awareness of what is going on to the survivor's left. For example, they may only eat from the right side of their plate, ignoring the left side of the plate.
- Behavior may be more impulsive and less cautious than before.
- It may be harder for the survivor to understand facial expressions and tone of voice. They also may have less expression in their own face and tone of voice when communicating.

What are common emotional effects of stroke?

- Depression
- Apathy and lack of motivation
- Frustration, anger and sadness
- Pseudobulbar affect, also called reflex crying or emotional lability (emotions may change rapidly

(continued)

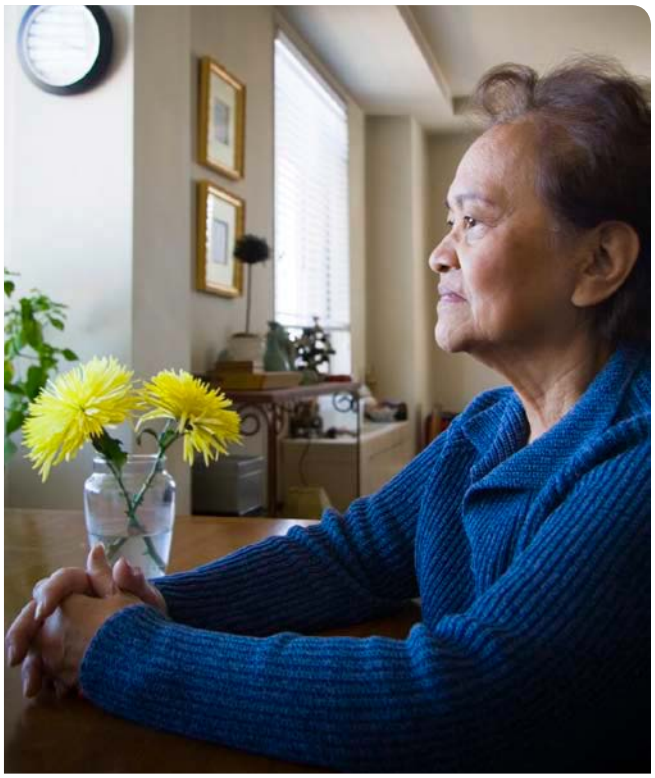
and sometimes not match the mood)

- Denial of the changes caused by the brain injury

Will I get better?

In most cases people do get better over time. The effects of a stroke are greatest right after the stroke. From then on, you may start to get better. How fast and how much you improve depends on the extent of the brain injury and your rehabilitation.

- Some improvement occurs spontaneously and relates to how the brain works again after it's been injured.
- Stroke rehabilitation (rehab) programs help you improve your abilities and learn new skills and coping techniques.
- Rehab begins after the stroke is over and you're medically stable.
- Depression after stroke can interfere with rehab. It's important to treat depression.
- Improvement often occurs most quickly in the first months after a stroke. Then it continues over years, perhaps at a slower pace, with your continued efforts.



Emotional changes such as depression are common effects of stroke, but most people do get better over time.

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3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork**.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

Can other areas of the brain help the damaged part of the brain?

How has my stroke affected me?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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Complications After Stroke

The treating doctor's highest priorities are to prevent complications that can occur as a result from the stroke and to prevent another stroke. Your doctor must determine that you are medically stable and able to resume some self-care activities. This means that all complications must be treated and under control.

Some things happen as a direct result of injury to the brain due to stroke. Others are because of a change in your abilities. For example, being unable to move freely can result in bedsores. Clinical depression can also occur with a stroke.

What are common complications of stroke?

The most common complications of stroke are:

- Brain edema — swelling of the brain after a stroke.
- Pneumonia — causes breathing problems, a complication of many major illnesses. Pneumonia occurs as a result of not being able to move as a result of the stroke. Swallowing problems after stroke can sometimes result in things 'going down the wrong pipe', leading to aspiration pneumonia.
- Urinary tract infection (UTI) and/or bladder control. UTI can occur as a result of having a foley catheter placed to collect urine when the stroke survivor cannot control bladderd function.
- Seizures — abnormal electrical activity in the brain causing convulsions. These are common in larger strokes.
- Clinical depression — a treatable illness that often occurs with stroke and causes unwanted emotional and physical reactions to changes and losses. This is very common after stroke or may be worsened in someone who had depression before the stroke.
- Bedsores — pressure ulcers that result from decreased ability to move and pressure on areas of the body because of immobility.
- Limb contractures — shortened muscles in an arm or leg from reduced ability to move the affected limb or lack of exercise.
- Shoulder pain — stems from lack of support of an arm due to weakness or paralysis. This usually is caused when the affected arm hangs resulting in pulling of the arm on the shoulder.
- Deep venous thrombosis (DVT) — blood clots form in veins of the legs because of immobility from stroke.

What can be done?

If you need medical treatment, your doctor will prescribe it.

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- Medical treatment often involves medical supervision, monitoring and drug therapies.
- Physical treatment usually involves some type of activity that may be done by you, a healthcare provider or by both of you working together. Types of treatment may include:
  - Range-of-motion exercises and physical therapy to avoid limb contracture, shoulder pain and blood vessel problems.
  - Frequent turning while in bed to prevent pressure sores and good nutrition.
  - Bladder training programs for incontinence.
- Swallowing and respiratory therapy, and deep-breathing exercises. These all help to decrease the risk of pneumonia.
- Psychological treatment can include counseling or therapy for feelings that result from clinical depression. Types of treatment may include antidepressant medication, psychotherapy or both. You may also be referred to a local stroke support group.

Physical therapy and range-of-motion exercises are effective ways to strengthen limbs and prevent muscular contracture.

HOW CAN I LEARN MORE?

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2. Sign up to get *Stroke Connection* magazine, a free magazine for stroke survivors and caregivers at **strokeconnection.org.**
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork.**

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What complications am I most at risk for?

What can I do to prevent complications?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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Spasticity After Stroke

After a stroke, muscles may become stiff, tighten up and resist stretching. This is called spasticity. Spasticity relates to muscle tone. Tone is the natural tension, or contraction, in a muscle that resists stretching. Stroke may cause an abnormal increase in muscle tone, leading to spasticity. Muscle contractions become more intense. The contractions may involve one muscle or a group of muscles. For some, spasticity may be mild muscle stiffness, for others it may be severe, resulting in pain or spasms.

Spasticity may also lead to fixed joints (contracture). When muscle tone is abnormally tight, it causes muscles to shrink and shorten. Joints can become stuck in one position and quite hard to move. For example, this may cause a wrist to curl in or an arm to stay in a folded position up against the chest.

What causes spasticity and how common it is?

A stroke is a brain injury. When the injured area of the brain controls muscle tone, spasticity may occur. About 25 to 43% of survivors will have spasticity in the first year after their stroke. It's more common in younger stroke survivors. It's also more common when the stroke is caused by a bleed (hemorrhagic). The timing of spasticity occurring after a stroke can vary. It may start soon after having the stroke or more than a year later.

What are the effects of spasticity?

Effects of spasticity include:

- Stiff fingers, arms or legs
- Muscles contract and relax on their own
- Contracture that may cause pain or discomfort
- Muscle tiredness
- Muscle and joint deformity over time

Examples:

- A clenched fist
- Tensed fingers
- A bent arm held against the chest
- Tightness in the knees
- Involuntary crossing (scissoring) of the legs
- A foot that's bent at an angle
- A weakened foot that drags, making it hard to walk (also known as foot drop)
- Curled toes, making it hard to walk (also known as claw toe)

Everyday tasks may become much harder when an arm or hand is affected. Simply grasping and using objects, reaching overhead or taking care of personal hygiene can be a challenge. Walking becomes much harder when the legs or feet are affected. The risk of falling increases.

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How is spasticity treated?

- Moving as much as possible is important to ease muscle tightening and prevent muscle shortening. Regular stretching with a wide range of motion is helpful. Regular exercise of the affected limbs is beneficial.
- Braces or splints may help to hold a muscle in place and stop it from contracting.
- Shots of botulinum toxin into spastic muscles in the upper and lower limbs can bring relief. There may be some soreness in the area of the injections.
- There are oral medications that can help. However, side effects, such as weakness, sleepiness or nausea may occur when taking oral medications.
- ITB (intrathecal baclofen) therapy involves implanting a small pump. The pump delivers medication (baclofen) directly into the spine. The medicine travels via the spinal fluid. This helps prevent side effects that may happen with oral medication. ITB may be considered when a patient doesn't respond well to other treatments.

Your health care provider will prescribe the best treatment approach for you based on how severe your spasticity is. A combination of physical therapy and medication can be quite effective.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit strokeassociation.org.
2. Sign up to get ***Stroke Connection*** magazine, a free magazine for stroke survivors and caregivers, at strokeconnection.org.
3. Connect with others sharing similar journeys with stroke by joining our Support Network at strokeassociation.org/supportnetwork.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your health care provider.

For example:

What are the best stretching exercises to keep my muscles from tightening?

MY QUESTIONS:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit strokeassociation.org/letstalkaboutstroke to learn more.

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Driving After Stroke

Driving is often a major concern after a stroke. It's not unusual for stroke survivors to want to drive. Getting around after a stroke is important — but safety is even more important.

Can I drive after a stroke?

Injury to the brain may change how you do things. Many people who have had a stroke develop some type of cognitive changes. This may include problems with memory, judgment, problem-solving or a combination of these. So before you drive again, think carefully about how these changes may affect safety for you, your family and others.

What are some warning signs of unsafe driving?

Often survivors are unaware of the difficulties in driving that they might have. Some may not realize all of the effects of their stroke. They may feel that they're able to drive even when it's a bad idea. Driving against your doctor's advice can be dangerous and may be illegal. In some cases, your doctor may have to notify your state that you've been advised not to drive.

If you or someone you know has experienced some of these warning signs of unsafe driving, please consider taking a driving test:

- Drives too fast or too slow for road conditions or posted speeds
- Needs help or instructions from passengers
- Doesn't observe signs or signals
- Makes slow or poor distance decisions
- Gets easily frustrated or confused
- Often gets lost, even in familiar areas
- Has accidents or close calls
- Drifts across lane markings into other lanes

How can I tell if I can drive?

- Talk to your doctor or occupational therapist. They will offer a professional opinion about how your stroke might change your ability to drive. Contact your State Department of Motor Vehicles. Ask for

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the Office of Driver Safety. Ask what applies to people who've had a stroke.

- Have your driving tested. Professionals such as driver rehabilitation specialists can evaluate your driving ability. You'll get a behind-the-wheel evaluation and be tested for vision perception, functional ability, reaction time, judgment and cognitive abilities (thinking and problem solving). Call community rehabilitation centers or your local Department of Motor Vehicles.
- Enroll in a driver's training program. For a fee, you may receive a driving assessment, classroom instruction and suggestions for modifying your vehicle (if necessary). These programs are often available through rehab centers.
- Ask your family if they have seen changes in your communication, thinking, judgment or behavior that should be evaluated before you drive again. Family often have more opportunities to observe changes than others do.

HOW CAN I LEARN MORE?

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Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

When should I test my driving ability?

Is my driving restriction permanent?

If not, when might I be able to drive again?

My Questions:

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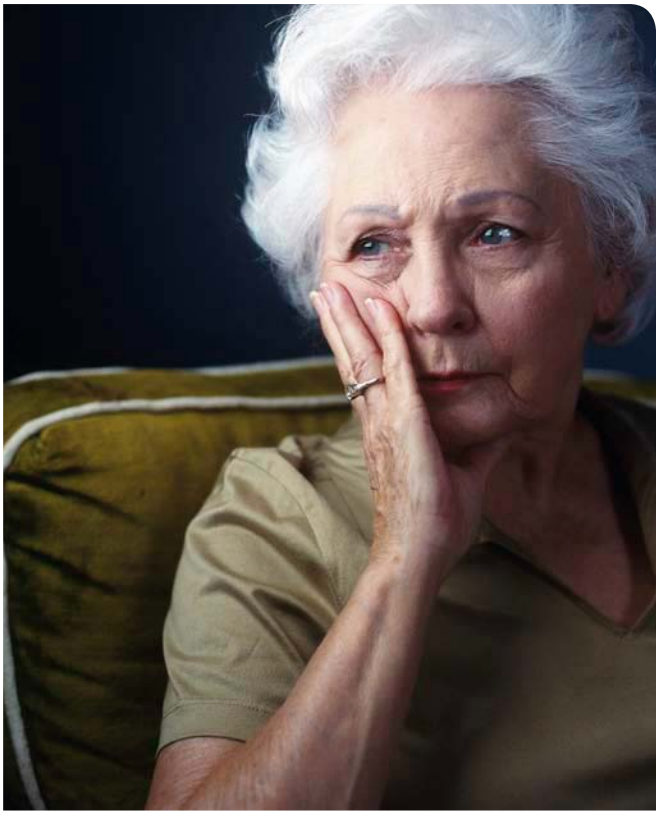
Emotional Changes After Stroke

Right after a stroke, a survivor may respond one way, yet weeks later respond differently. Some survivors may react with sadness; others may be cheerful. These emotional reactions may occur because of biological or psychological causes due to stroke. These changes may vary with time and can interfere with rehabilitation.



How does stroke cause emotional changes?

Emotions may be hard to control, especially right after a stroke. Some changes are a result of the actual injury and chemical changes to the brain caused by the stroke.

Others are a normal reaction to the challenges, fears and frustrations that one may feel trying to deal with the effects of the stroke. Often, talking about the effects of the stroke and acknowledging these feelings helps stroke survivors deal with these emotions.

What are some common emotional changes after stroke?

Pseudobulbar Affect, also called "emotional lability," "reflex crying" or "labile mood," can cause:

- Rapid mood changes — a person may "spill over into tears" for no obvious reason and then quickly stop crying or start laughing.
- Crying or laughing that doesn't match a person's mood.
- Crying or laughing at unusual times or that lasts longer than seems appropriate.

Post-stroke depression is characterized by:

- Feelings of sadness
- Hopelessness or helplessness
- Irritability
- Changes in eating, sleeping and thinking

Treatment for post-stroke depression may be needed. If not treated, depression can be an obstacle to a survivor's recovery. Don't hesitate to take antidepressant medications prescribed by your doctor.

Other common emotional reactions include:

- Frustration
- Anxiety
- Anger
- Apathy or not caring what happens
- Lack of motivation
- Depression or sadness

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How can I cope with my changing emotions?

- Tell yourself that your feelings aren't "good" or "bad." Let yourself cope without feeling guilty about your emotions.
- Find people who understand what you're feeling. Ask about a support group.
- Get enough exercise and do enjoyable activities.
- Give yourself credit for the progress you've made. Celebrate the large and small gains.
- Learn to "talk" to yourself in a positive way. Allow yourself to make mistakes.
- Ask your doctor for help. Ask for a referral to a mental health specialist for psychological counseling and/or medication if needed.
- Stroke may cause you to tire more easily. Rest when you feel fatigued. Make sure you get enough sleep. Sometimes lack of sleep can cause emotional changes and cause you not to cope as well.

Connecting with friends or joining a stroke support group may help you cope with your changing emotions.

HOW CAN I LEARN MORE?

1. Call **1-888-4-STROKE** (1-888-478-7653) to learn more about stroke or find local support groups, or visit **StrokeAssociation.org**.
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Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What can my family do to help me when I am emotional?

Will these emotional changes improve over time?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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Feeling Tired After Stroke

After a stroke, almost all stroke survivors feel tired or some type of fatigue at some point. Stroke survivors often must work harder to make up for the loss of normal functions (such as being unable to use an arm or hand). But you'll probably start feeling less tired after a few months. For some people, tiredness may continue for years after a stroke, but they usually find ways to make the most of the energy they have.

Why am I so tired?

It's important to pinpoint what's causing you to be tired. Then you can take action to manage it. Consult with your healthcare provider to rule out any medical conditions that might cause tiredness or make it worse. You may feel tired after a stroke for four major reasons:

- You may have less energy than before because of sleeping poorly, not getting enough exercise, poor nutrition or the side effects of some of the medicine.
- You have as much energy as before, but you're using it differently. Because of the effects of your stroke, things, like dressing, talking or walking, take a lot more effort. Changes in thinking and memory take more concentration. You have to stay "on alert" all the time — and this takes energy.
- You also may feel tired due to emotional changes. Coping with frustration, anxiety, anger and sadness can be draining. Depressed feelings are common after a stroke. Often, loss of energy, interest or enthusiasm occurs along with a depressed mood.
- You may feel tired because of depression. Depression is very common after a stroke. Clinical depression is a treatable illness that happens to many stroke survivors. Symptoms include significant lack of energy, lack of motivation, and problems concentrating or finding enjoyment in anything. Talk to your doctor about an evaluation for clinical depression if tiredness continues. There is nothing to be ashamed of if you are feeling depressed. It is very common, and the good news is that it is treatable!

How can I increase my energy?

- Tell your doctor how you are feeling and make sure you have had an up-to-date physical. Your doctor can evaluate any medical reasons for your tiredness. He or she can also check to see if your fatigue could be a side effect of your medication.

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- Celebrate your successes. Give yourself credit when you accomplish something. Look at your progress, not at what's left to be done.
- Try naps, or schedule rest periods throughout the day. Rest as long as you need to feel refreshed.
- Learn to relax. Sometimes the harder you try to do something, the harder it is to do. You become tense, anxious and frustrated. All this takes more energy. Being relaxed lets you use your energy more efficiently.
- Do something you enjoy every day. A positive attitude or experience helps a lot to boost energy levels.
- Be social. It is very important that you get back into the "swing of things" and stay involved with friends and family. Go out into the community and interact with friends, family and other people.
- Physical activity is important. With permission from your doctor, consider joining a health and wellness program.

Being with family and friends may provide that energy boost you need.

HOW CAN I LEARN MORE?

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Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What can I do to decrease my tiredness?

Could clinical depression be causing my tiredness?

Are the medicines I take causing my fatigue?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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Living at Home After Stroke

Most stroke survivors are able to return home and resume many of the activities they did before the stroke. Leaving the hospital may seem scary at first because so many things may have changed. The hospital staff can help prepare you to go home or to another setting that can better meet your needs.

For your safety, you may need to have handrails installed in your bathroom.

How do I know if going home is the right choice?

Going home poses few problems for people who have had a minor stroke and have few lingering effects. For those whose strokes were more severe, going home depends on these four factors:

- **Ability to care for yourself.** Rehabilitation should be focused on being able to perform daily activities such as eating, dressing and bathing.
- **Ability to follow medical advice.** This is a critical step in recovery and preventing another stroke or other complications after stroke. It's important to take medication as prescribed and follow medical advice.
- **A caregiver.** Someone should be available who is willing and able to help when needed.
- **Ability to move around and communicate.** If stroke survivors aren't independent in these areas, they may be at risk in an emergency or feel isolated.

What changes do I need to make at home?

Living at home successfully also depends on how well your home can be adapted to meet your needs.

- **Safety.** Take a look around your home and remove anything that might be dangerous. This might be as simple as taking up throw rugs, testing the temperature of bath water or wearing rubber-soled shoes. Or it may be more involved, like installing handrails in your bathroom or other areas.
- **Accessibility.** You need to be able to move freely within the house. Changes can be as simple as moving the furniture or as involved as building a ramp.
- **Independence.** Your home should be modified so you can be as independent as possible. Often this means adding special equipment like grab bars or transfer benches.

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What if I can't go home?

Your doctor may advise a move from the hospital to another type of facility that can meet your needs for a short time or permanently. It's important that the living place you choose is safe and supports your continued recovery. Your social worker and case manager at the hospital can give you information about facilities that might work for you. Possibilities include:

- **Nursing facility.** This can be a good option for someone who has ongoing medical problems. This type of facility provides round-the-clock care.
- **Skilled nursing facility.** This is for people who need more than usual medical attention, continued therapy and more care than a caregiver can provide at home. This type of facility also provides round-the-clock care.
- **Intermediate care facility.** This is for people who don't have serious medical problems and can manage some level of self-care.
- **Assisted living.** This is for people who can live somewhat independently but need some assistance with things like meals, medication and housekeeping.

Many stroke survivors who are unable to immediately return home find the support they need at assisted living or nursing facilities.

HOW CAN I LEARN MORE?

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2. Sign up to get *Stroke Connection* magazine, a free magazine for stroke survivors and caregivers at **strokeconnection.org**.
3. Connect with others sharing similar journeys with stroke by joining our Support Network at **strokeassociation.org/supportnetwork**.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

What living arrangement would you recommend for me?

Is there a caregiver or stroke support group available in my community?

My Questions:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.

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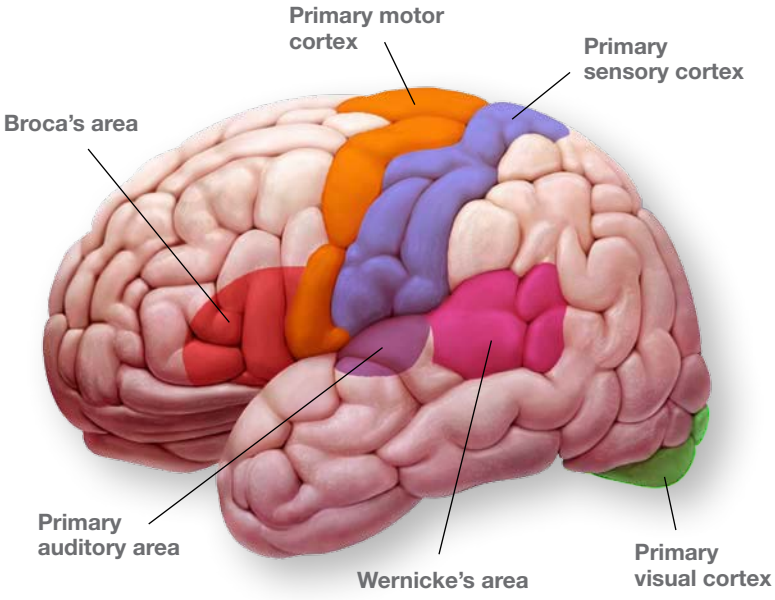
Stroke and Aphasia

Aphasia is a language disorder that affects the ability to communicate. It's most often caused by strokes that occur in areas of the brain that control speech and language.



Certain areas of the brain (usually in the left side of the brain) influence one's ability to communicate and understand language. When a stroke occurs in one of these areas, it may result in aphasia.

What are the effects of aphasia?

Aphasia does not affect intelligence. Stroke survivors remain mentally alert, even though their speech may be jumbled, fragmented or impossible to understand. Some survivors continue to have:

- Trouble speaking, like "getting the words out"
- Trouble finding words
- Problems understanding what others say
- Problems with reading, writing or math
- Inability to process long words and infrequently used words

How does it feel to have aphasia?

People with aphasia are often frustrated and confused because they can't speak as well or understand things the way they did before their stroke. They may act differently because of changes in their brain. Imagine looking at the headlines of the morning newspaper and not being able to recognize the words. Or think about trying to say "put the car in the garage" and it comes out "put the train in the house" or "widdle tee car ung sender plissen." Thousands of alert, intelligent men and women are suddenly plunged into a world of jumbled communication because of aphasia.

Are there different types of aphasia?

Yes, there are several forms of aphasia. They include:

- **Global aphasia** — People with this aphasia may be completely unable to speak, name objects, repeat phrases or follow commands.
- **Broca's aphasia** — The person knows what they want to say, but can't find the right words (can't get the words out).
- **Wernicke's aphasia** — A person with this aphasia can seldom understand what's being said or control what they're saying.

How can family and friends help?

The stroke survivor and their family members will need the help and support of a doctor, counselor and speech pathologist. It's a good idea for family and friends to:

- Be open about the problem so people can understand.

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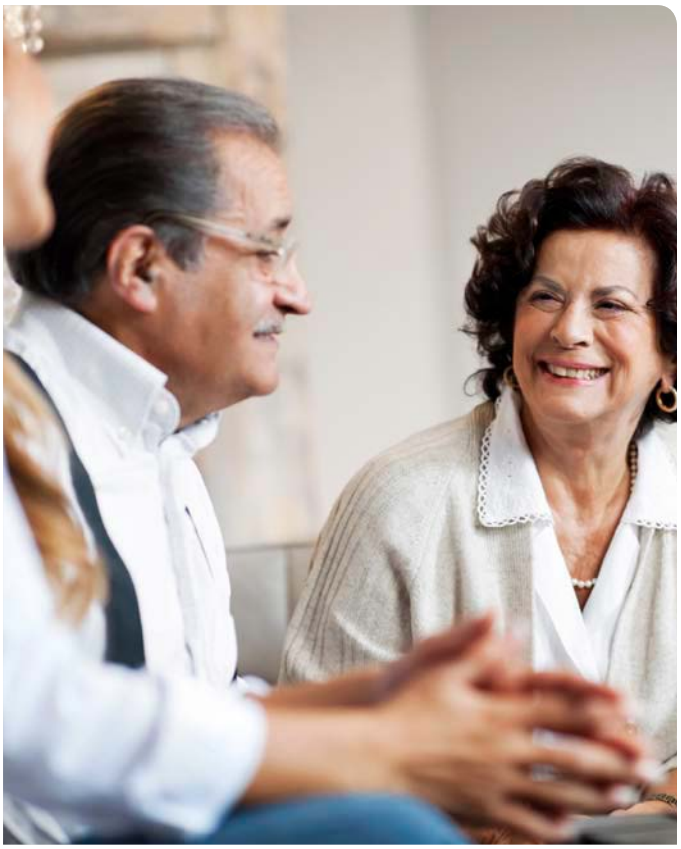
- Always assume that the stroke survivor can hear. Check understanding with yes/no questions.
- Set up a daily routine for the person with aphasia that includes rest and time to practice skills.
- Use sentences that are short and to the point.
- Keep the noise level down and stand where the survivor can see you.
- Remember to treat the stroke survivor as an adult and let him or her share in decision-making. No one likes to be ignored. Include the survivor in your conversation.
- Help the stroke survivor cope with feelings of frustration and depression.
- Be patient with the person with aphasia. Give them the time they need to try to speak and get their point across to you. This not only respects their dignity, but makes it less stressful for them when communicating.



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Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

How long will I need therapy?

Will my aphasia go away?

How can I find a stroke or aphasia support group?

My Questions:

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Stroke Rehabilitation

There is life – and hope – after stroke. Rehabilitation (rehab) can build your strength, capability and confidence. It can help you continue our daily activities despite the effects of your stroke.

The American Stroke Association recommends an inpatient rehabilitation facility (IRF) when possible. In an IRF, the stroke survivor must be capable of doing three hours of therapy five days a week. They must be medically stable. IRF's provide hospital-level care that is physician directed with 24-hour specialized nursing care.

Some survivors may get rehab in skilled nursing facilities (SNF), long-term acute care facilities, nursing homes, outpatient clinics and in-home care through a home health agency. Patients may receive care in one or more settings during their recovery.

Stroke rehabilitation can be hard work. But survivors who've been there will tell you it's well worth it.

What is stroke rehabilitation?

After a stroke, you may have to change or relearn how you live day to day. Getting quality rehab from a strong team of therapists leads to better recovery. It can also make a positive difference in other areas of your health.

The goal of rehab is to become as independent as possible. To do so means working on physical and communication functions harmed by the stroke. Making healthy lifestyle changes to prevent another stroke is another goal.

Who will be a part of my rehabilitation program?

Rehabilitation is a team effort. This team communicates about and coordinates the care to help achieve your goals. Your physician and neurologist are on the team, others may include:

- **Physiatrist** — A medical doctor specializing in stroke rehab.
- **Physical therapist (PT)**— PTs work to get you as mobile and as independent as possible. They help improve major physical and sensory deficits. The focus on walking, balance and coordination.
- **Occupational therapist (OT)**— OTs help you with daily activity skills (bathing, toileting, eating, driving).
- **Rehabilitation nurse** — A nurse who coordinates your medical support needs throughout rehab.
- **Speech-language pathologists (SLP)** — SLPs help with speech and language skills and swallowing disorders.
- **Recreation therapist (RT)** — RTs help with adapting activities you enjoyed before the stroke. They may introduce new ones, too.
- **Psychiatrist or psychologist** — Stroke may bring emotional and life changes. These health care providers can help you adjust.
- **Vocational rehabilitation counselor** — This specialist evaluates your work-related abilities. They help you make the most of your skills to return to work.

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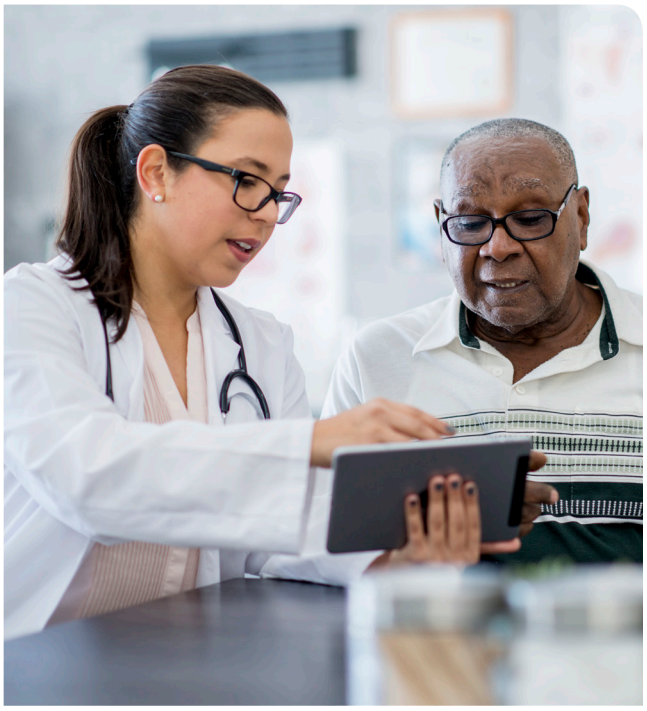
What will I do in rehabilitation?

Rehab programs focus on assessing and improving:

- Activities of daily living such as eating, bathing and dressing.
- Mobility (getting from bed to chair, walking, climbing stairs or using a wheelchair).
- Communication skills in speech and language.
- Cognitive skills such as memory or problem solving.
- Social skills, interacting with other people.
- Psychological functioning to improve coping skills and treatment to overcome depression, if needed.

The rehabilitation team meets weekly to check on progress. Part of rehab is working on recovery. Another part is learning to adapt for deficits that may not fully recover.



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2. Sign up for ***Stroke Connection***, a free magazine for stroke survivors and caregivers, at **strokeconnection.org**.
3. Connect with stroke survivors and caregivers by joining our Support Network at **strokeassociation.org/supportnetwork**.

Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your health care provider.

For example:

How can I continue to improve my skills after formal rehab ends?

MY QUESTIONS:

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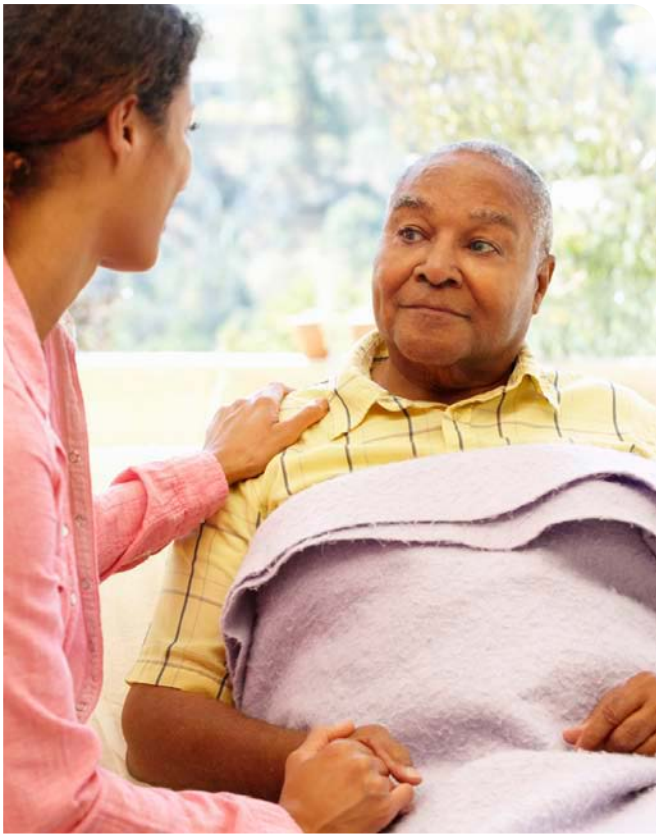
The Stroke Family Caregiver

People who provide help for stroke survivors are often called **caregivers**. Everyone involved in helping a stroke survivor is a caregiver. It can be the spouse, family members or friends. Often one person, spouse, adult child or parent, will provide most of the care.

It's important that caregivers and stroke survivors strive to be "care partners" in their efforts. It's often a challenge for both to adjust to their changed roles. The adjustment may be easier if the caregiver and stroke survivor share in decision-making as much as possible and try to share their feelings honestly.



What should a caregiver do?

There is no one "job description" that explains what all caregivers do. Each caregiver's responsibilities vary according to the unique needs of the stroke survivor. Role changes and new skills may need to be learned. Common responsibilities of caregiving include:

- Providing physical help with personal care and transportation.
- Managing financial, legal and business affairs.
- Monitoring behavior to ensure safety.
- Managing housework and making meals.
- Coordinating health care and monitoring or giving medications.
- Helping the survivor maintain learned rehab skills and work to improve them.
- Providing emotional support for the stroke survivor and family members.
- Encouraging the stroke survivor to continue working toward recovery and to be as independent as possible.

Is there assistance for caregivers?

Many people find caring for another person very rewarding. But there may be times when a stroke survivor's needs are too much for any one person. Sometimes a caregiver just needs a break. These breaks are important to not only the caregiver but also to the stroke survivor. These community resources may be helpful:

- **Adult day care** — professional supervision of adults in a social setting during the day.
- **Adult foster homes** — supervised care in approved (licensed) private homes.
- **Meal programs (Meals on Wheels)** — a federally sponsored nutrition program.

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- **Home health aide service** — in-home personal care assistance.
- **Homemaker assistance** — supervised, trained personnel who help with household duties.
- **Respite care** — people come into the home for a limited time to give caregivers a break. Some nursing homes also provide short-term respite care.

Is training available for family caregivers?

Finding caregiver training locally can be hit or miss. A good place to start is with your local Area Agency on Aging. Visit **eldercare.gov** to find an office near you.

Hiring a home health aide is a great way to give yourself a break from the rigors of being the primary caregiver.

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Do you have questions for the doctor or nurse?

Take a few minutes to write your questions for the next time you see your healthcare provider.

For example:

Is there a stroke support group or caregiver support group in my area?

Do you know of any other national organizations that support caregivers?

My Questions:

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