

# STROKE

Augusta University Medical Center would like to share the following stroke information with you and your family. This information is published by the American Heart & American Stroke Association. At the end of the booklet there are several stroke resources you may find beneficial. We hope this information will be helpful!

Thank you for choosing us to care for you,



The Joint Commission



American Heart Association  
American Stroke Association

CERTIFICATION

Meets standards for

Comprehensive Stroke Center



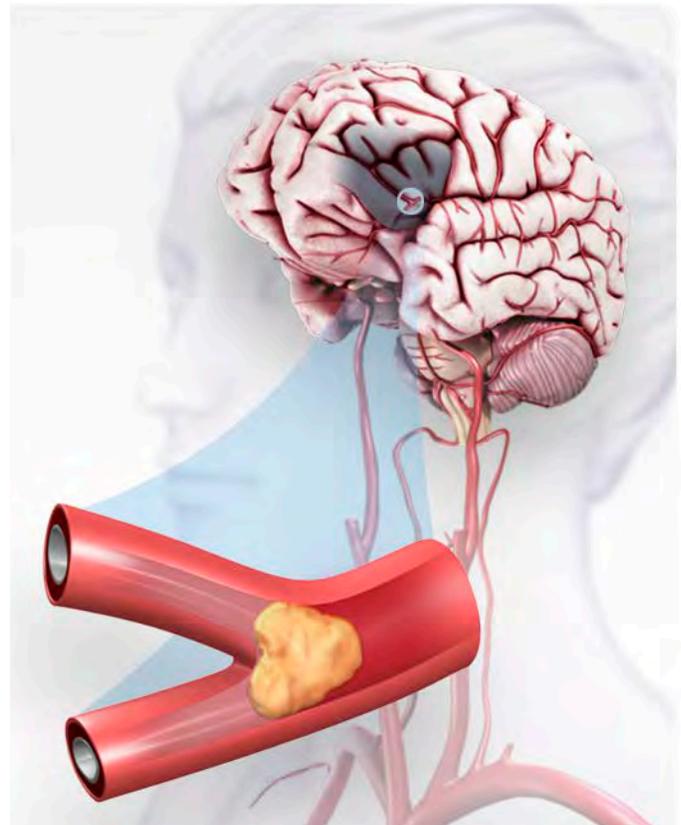
let's talk about

## 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.



- 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<sub>12</sub> 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<sub>12</sub> 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.

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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 aspirin or other antiplatelet agent should I take?**

**What is the right dose for me?**

### My Questions:

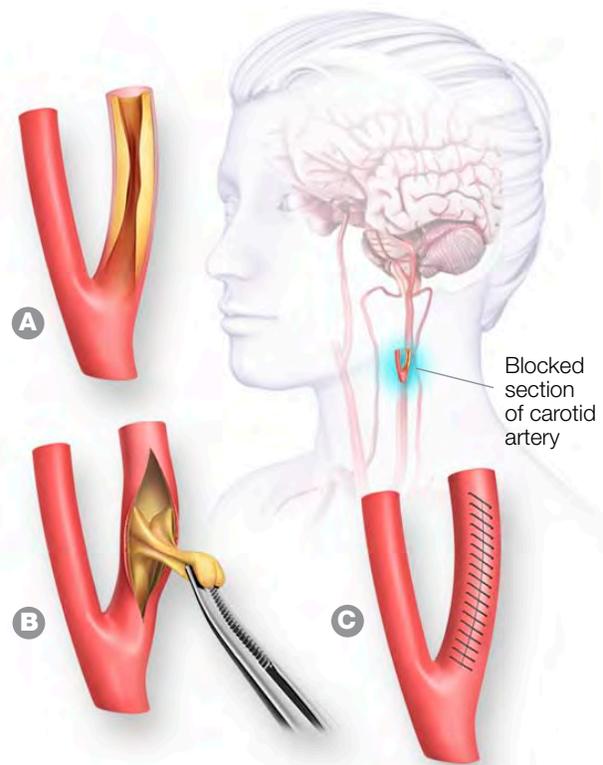
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# Carotid Endarterectomy

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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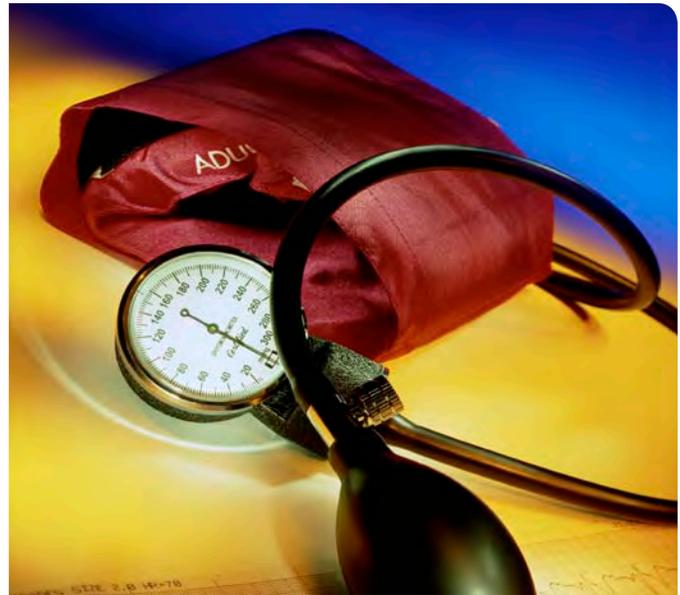


- You'll probably go home in a day or two.
- Your doctor will give you instructions on what you can and cannot do after the surgery. For example, you may be told not to lift anything heavy for a few weeks after the surgery.
- Ask your doctor when you can to return to work.
- Your doctor will prescribe 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?

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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:

**Could I have a stroke during surgery?**

**Will I need a surgery again?**

### My Questions:

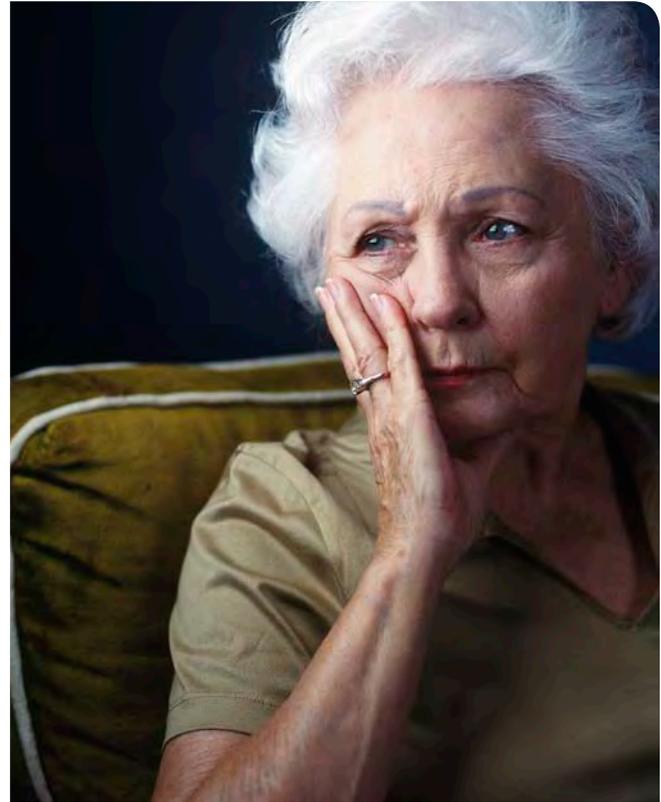
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## Emotional Changes After Stroke

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?

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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:

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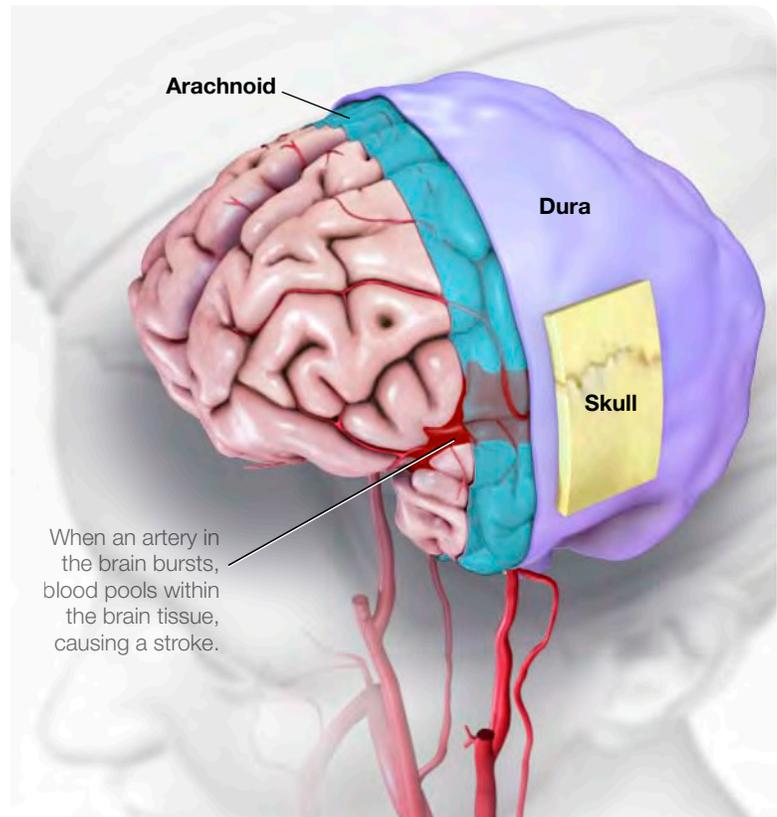


let's talk about

# 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?

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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 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.



let's talk about

# 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 sodium (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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### 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:

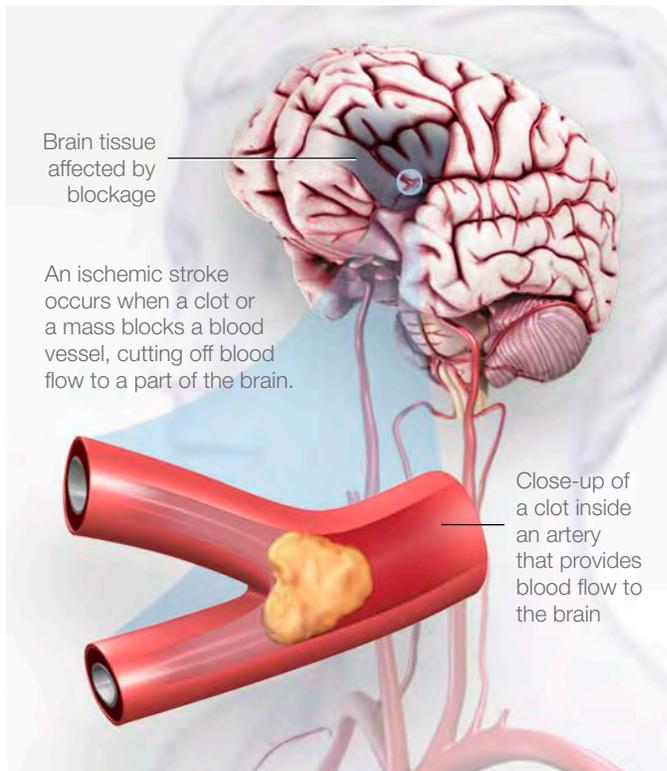
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let's talk about

# 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



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

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.

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.

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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 help prevent another stroke?**

**What medications may I be given?**

## My Questions:

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let's talk about

## The Connection Between Diabetes and Stroke

Diabetes, also called diabetes mellitus, is a condition that causes blood sugar to rise. A fasting blood glucose (sugar) level of 126 milligrams per deciliter (mg/dL) or higher is dangerous.

- More than 30 million Americans have diabetes.
- Diabetes is the 7th leading cause of death in the U.S.
- Occurrence of diabetes is higher among American Indians, Alaska Natives, non-Hispanic blacks, and Hispanics/Latinos.
- Adults who have diabetes are two times as likely to have a stroke compared to people who do not have diabetes.
- People with diabetes tend to develop heart disease or have a stroke at an earlier age than people without diabetes.
- People with prediabetes have an increased risk not only for developing Type 2 diabetes, but also for heart disease and stroke.
- Every two minutes an American adult with diabetes is hospitalized for stroke.



***Knowing this, it's important to understand the connection between diabetes and stroke, recognize the risk factors and take steps to stay healthy.***

### Why does diabetes often lead to stroke?

The connection between diabetes and stroke has to do with the way the body handles blood glucose to make energy. Most of the food we eat is broken down into glucose to give us energy. Glucose enters a person's bloodstream after food is digested and travels to cells throughout the body. For glucose to enter cells and provide energy, it needs a hormone called insulin. The pancreas is responsible for producing this insulin in the right amounts. In people who have Type 1 diabetes, the pancreas does not make insulin. In people who have Type 2 diabetes, the pancreas makes too little insulin, or muscles, the liver and fat do not use insulin in the right way.

As a result, people with untreated diabetes accumulate too much glucose in their blood, and their cells don't receive enough energy. Over time, excessive blood glucose can result in increased fatty deposits or clots in blood vessels. These

clots can narrow or block blood vessels in the brain or neck, cutting off the blood supply, stopping oxygen from getting to the brain and causing a stroke.

### Stroke risk factors

- Diabetes or prediabetes.
- Excessive belly fat:
  - Men: waist more than 40 inches.
  - Women: waist more than 35 inches.
- High blood pressure.
- High blood glucose levels.
- High cholesterol.
- Cigarette smoking.

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**American  
Stroke  
Association.**  
A division of the  
American Heart Association.

## The Connection Between Diabetes and Stroke

### What You Can Do

If you have diabetes, you can ward off the risk of stroke by taking steps to keep your heart and blood vessels healthy.

1. Maintain a heart-healthy diet.
2. Don't smoke.
3. Maintain a healthy weight.
4. Exercise every day.
5. Limit alcohol.
6. Learn to manage stress.
7. Talk to your health care provider.



### BE INFORMED, BE HEALTHY

People with diabetes can live long, healthy lives, free from heart disease, stroke and other health problems. Recognizing the connection between diabetes and stroke is the first step toward lowering stroke risk.

### HOW CAN I LEARN MORE?

- 1 Call 1-888-4-STROKE (1-888-478-7653) or visit [stroke.org](https://stroke.org) to learn more about stroke or find local support groups.
- 2 Subscribe to the *Stroke Connection*, a free digital magazine for stroke survivors and caregivers, at [strokeconnection.org](https://strokeconnection.org).
- 3 Connect with others who have also had an experience with stroke by joining our Support Network at [stroke.org/supportnetwork](https://stroke.org/supportnetwork).

### Do you have questions for the doctor or nurse?

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

For example:

**How can I reduce my risk of stroke?**

### MY QUESTIONS:

We have many other fact sheets to help you make healthier choices, manage your condition or care for a loved one. Visit [stroke.org/letstalkaboutstroke](https://stroke.org/letstalkaboutstroke) to learn more.



let's talk about

## 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.

(continued)



- 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.



let's talk about

## 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.

(continued)



- **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?

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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 are my risk factors for stroke?**

**What are the warning signs of TIAs and stroke?**

### My Questions:

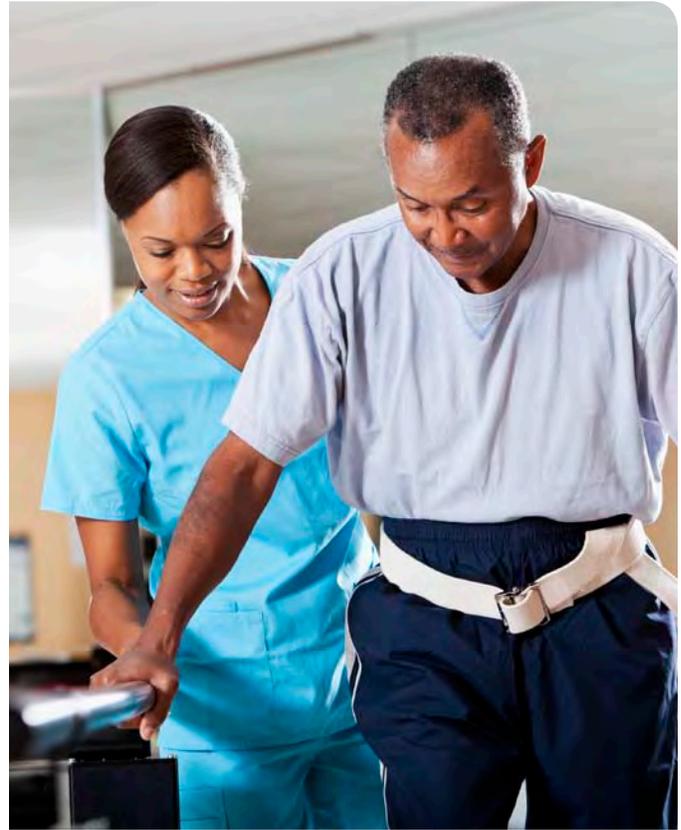
We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit **strokeassociation.org/letstalkaboutstroke** to learn more.



let's talk about

## Stroke and Rehabilitation

When the immediate crisis of a stroke has passed and you've been stabilized medically, it's time to consider rehabilitation (rehab) therapy.



### What is stroke rehabilitation?

After a stroke, you may have to change or relearn how you live day to day. Rehab may reverse some of the effects of stroke.

The goals of rehab are to increase independence, improve physical functioning, and help you gain a satisfying quality of life after stroke. Another goal is to help you make lifestyle changes to prevent another stroke.

### Who will be a part of my rehabilitation program?

Your rehab team may include:

- **Physiatrist** — A medical doctor who specializes in rehab.
- **Physical therapist** — A healthcare provider who specializes in maximizing a stroke survivor's

mobility and independence to improve major motor and sensory impairments, such as walking, balance and coordination.

- **Occupational therapist** — A therapist who focuses on helping stroke survivors rebuild skills in daily living activities such as bathing, toileting and dressing.
- **Rehabilitation nurse** — A nurse who coordinates the medical support needs of stroke survivors throughout rehab.
- **Speech therapist** — A specialist who helps to restore speech and language skills and also treats swallowing disorders.
- **Recreational therapist** — A therapist who helps to modify activities that the survivor enjoyed before the stroke or introduces new ones.
- **Psychiatrist or psychologist** — Specialists who

*(continued)*



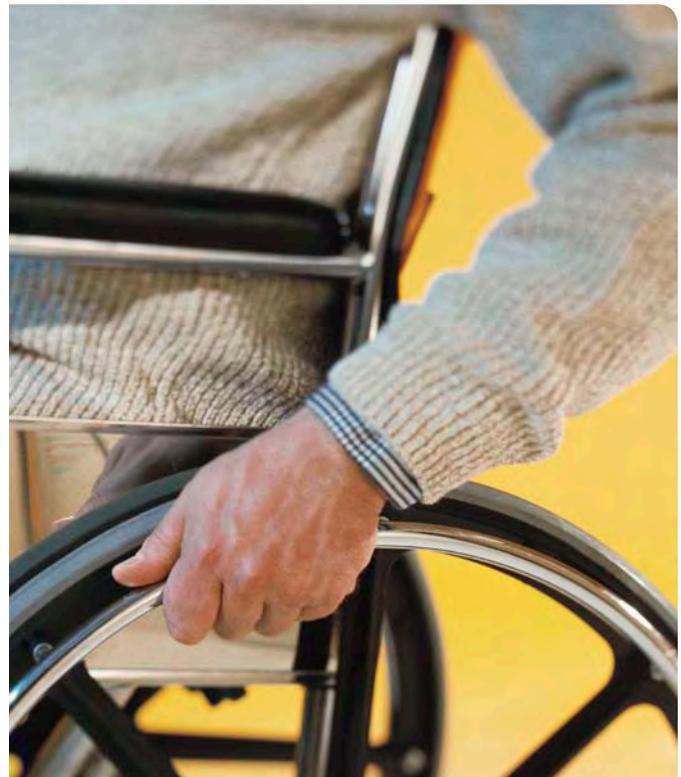
help stroke survivors adjust to the emotional challenges and new circumstances of their lives.

- **Vocational rehabilitation counselor** — A specialist who evaluates work-related abilities of people with disabilities. They can help stroke survivors make the most of their skills to return to work.

### What will I do in rehabilitation?

Rehab programs often focus on:

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



Learning how to use a wheelchair is among the many post-stroke skills taught by rehab therapists.

### 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:

**Can you refer me to a psychiatrist?**

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

### 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.



# What Is Atrial Fibrillation?

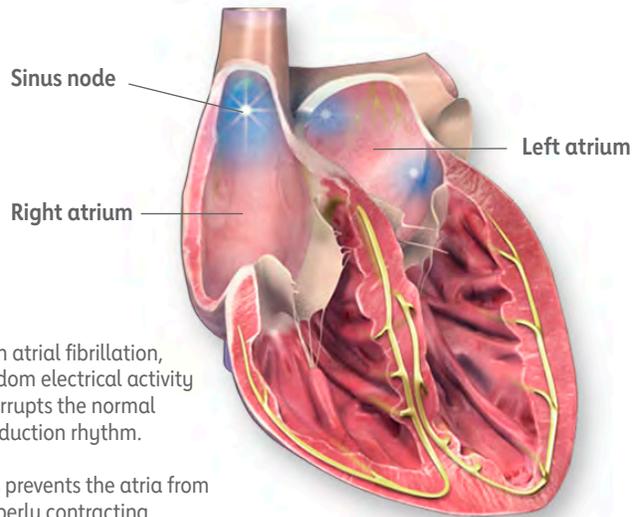
Normally, your heart contracts and relaxes to a regular beat. Certain cells in your heart, called the sinus node, make electrical signals that cause the heart to contract and pump blood. These electrical signals can be recorded using an electrocardiogram, or ECG. Your doctor can read your ECG to find out if the electrical signals are normal.

In atrial fibrillation, or AFib, the heart's two small upper chambers (atria) beat irregularly and too fast, quivering instead of contracting properly.

During AFib, some blood may not be pumped efficiently from the atria into the ventricles. Blood that's left behind can pool in the atria and form blood clots.



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?

Some people with AFib don't have symptoms. Some of the symptoms are:

- Fast, irregular heartbeat
- Heart palpitations (rapid "flopping" or "fluttering" feeling in the chest)
- Feeling lightheaded or faint
- Chest pain or pressure
- Shortness of breath, especially when lying down
- Tiring more easily (fatigue)

## Can AFib lead to other problems?

You can live with and manage AFib. But when undetected or untreated, AFib can lead to other medical problems including:

- Stroke
- Heart failure
- Heart attack
- Sudden cardiac arrest

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

## What can be done to correct AFib?

Treatment options may include one or more of the following:

- Medication to help slow your heart rate, such as beta blockers, certain calcium channel blockers or digoxin
- Medication to restore normal heart rhythm, such as beta blockers or antiarrhythmics
- Procedures to stop or control the electrical impulses causing the AFib, such as electrical cardioversion or catheter ablation
- Anticoagulant or antiplatelet medications to prevent blood clots
- Pacemaker or other surgery

(continued)



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

### How can I lower my risk of stroke?

You'll likely be prescribed anticoagulant or antiplatelet medications to prevent blood clots. Anticoagulants include warfarin and newer drugs referred to as non-vitamin K antagonist oral anticoagulants, or NOACs, including dabigatran, rivoraxaban, apixaban and edoxaban. Your stroke risk determines the type and dose of medications you'll be prescribed.

While on these medications:

- Tell all of your health care professionals, including your dentist and pharmacist, that you're taking them. This is important before you start taking a new medication or have any procedure that can cause bleeding.
- If you forget to take your daily dose, call your health care professional and follow their directions.
- Report any unusual bleeding, bruising or other problems to your health care professional right away.



If you have AFib, your health care professional may prescribe medications to help prevent clots.

## HOW CAN I LEARN MORE?

- 1 Call 1-800-AHA-USA1 (1-800-242-8721), or visit [heart.org](http://heart.org) to learn more about heart disease and stroke.
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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](http://heart.org/SupportNetwork).

### Do you have questions for your doctor or nurse?

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

For example:

**What should my pulse be?**

**What if I miss a dose of my medication?**

### MY QUESTIONS:

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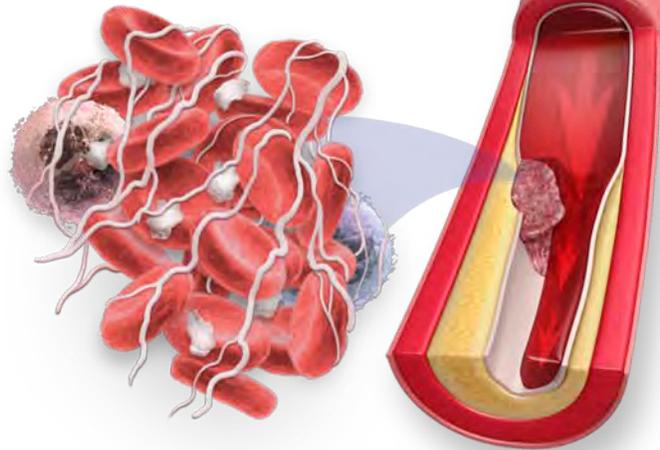


let's talk about

## 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, dabigatran, 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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American Heart Association.

Check. Change. Control.<sup>®</sup>  
Cholesterol

## CHOLESTEROL DRUGS

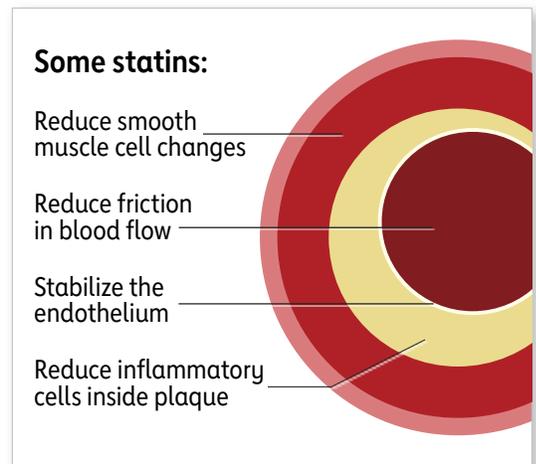
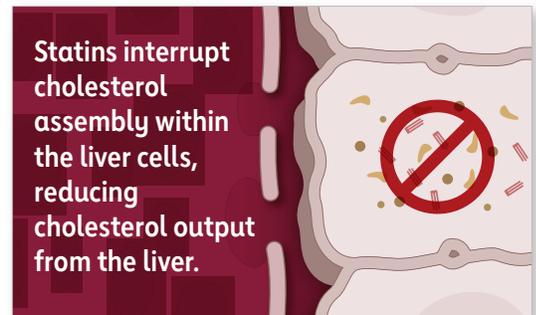
**People with high cholesterol** are often prescribed medications to help lower their cholesterol. The most common cholesterol-lowering drugs are called **statins**.

Statins disrupt the production of cholesterol by blocking a specific enzyme inside cholesterol-producing liver cells. This results in less cholesterol being released into the bloodstream.

Some statins also reduce the inflammatory process caused by elevated cholesterol within blood vessel walls. When the body has a reduced reaction to the invading cholesterol, fewer macrophages travel into the artery walls, where they would have formed foam cells and plaque.

When plaque stops growing inside an artery, the fibrous outer coating remains strong and less likely to rupture. This is called a **stable plaque**.

**Statins help to lower cholesterol and maintain the integrity of arteries.**



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Cardiovascular

Amgen sponsors the American Heart Association's Check. Change. Control. Cholesterol.<sup>™</sup> Initiative

Learn more about cholesterol at [heart.org/Cholesterol](http://heart.org/Cholesterol)

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## How Can I Improve My Cholesterol?

Most heart and blood vessel disease is caused by a buildup of cholesterol, plaque and other fatty deposits in artery walls. The arteries that feed the heart can become so clogged the blood flow is reduced, causing chest pain. If a blood clot forms and blocks the artery, a heart attack can occur. If a blood clot blocks an artery leading to or in the brain, a stroke results.

You can make lifestyle changes to improve your cholesterol. You can eat heart-healthy foods, reach and maintain a healthy weight, be physically active and not smoke. Some people also need to take medicine.

Your doctor can help you create a plan to improve your cholesterol. It's important to follow your plan and discuss any concerns you have with your doctor.



Cholesterol can join with fats and other substances in your blood to build up in the inner walls of your arteries. The arteries can become clogged and narrow, and blood flow is reduced.

### What should I eat?

Focus on foods low in saturated and trans fats such as:

- A variety of fruits and vegetables.
- A variety of whole grain foods such as whole-grain bread, cereal, pasta and brown rice. At least half of the servings should be whole grains.
- Fat-free, 1% and low-fat milk products.
- Skinless poultry and lean meats. When you choose to eat red meat and pork, select options labeled "loin" and "round." These cuts usually have the least amount of fat.
- Fatty fish such as salmon, trout, albacore tuna and sardines. Enjoy at least 8 ounces of non-fried fish each week.
- Unsalted nuts, seeds, and legumes (dried beans or peas).
- Nontropical vegetable oils like canola, corn, olive, or safflower oils.

### What should I limit?

- Foods with a lot of sodium (salt)
- Sweets and sugar-sweetened beverages
- Red meats and fatty meats that aren't trimmed
- Processed meats such as bologna, salami and sausage
- Full-fat dairy products such as whole milk, cream, ice cream, butter and cheese
- Baked goods made with saturated and trans fats such as donuts, cakes and cookies
- Foods that list the words "hydrogenated oils" in the ingredients panel
- Saturated oils like coconut oil, palm oil and palm kernel oil
- Solid fats like shortening, stick margarine and lard
- Fried foods

(continued)



### What are some cooking tips?

- Add a variety of fruits and vegetables to your meals.
- Use a rack to drain off fat when you broil, roast or bake poultry and meats.
- Look for leaner cuts if you choose to eat meat.
- Don't baste with drippings; use wine, fruit juice or marinade.
- Broil or grill instead of pan-frying.
- Cut off all visible fat from meat before cooking.
- Remove the skin from poultry.
- Use a vegetable oil spray to brown or sauté foods.
- Serve smaller portions of higher-calorie dishes.
- Use low-fat, low-sodium options instead of regular cheese.



### HOW CAN I LEARN MORE?

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#### Do you have questions for your doctor or nurse?

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

For example:

**What about eating out?**

**Why are weight control and physical activity important?**

#### MY QUESTIONS:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage your condition or care for a loved one. Visit [heart.org/AnswersByHeart](http://heart.org/AnswersByHeart) to learn more.



## How Can I Quit Smoking?

Smoking harms almost every tissue and organ in the body, including your heart and blood vessels. Nicotine, one of the main chemicals in cigarettes, causes your heart to beat faster and your blood pressure to rise. Carbon monoxide from smoking also gets into the blood and robs your body of oxygen. Nonsmokers who are exposed to secondhand smoke are also harmed.

If you smoke or vape, you have good reason to worry about its effect on your health and the health of your loved ones and others.

Deciding to quit is a big step. Following through is just as important. Quitting tobacco and nicotine addiction isn't easy, but others have done it, and you can, too.



### Is it too late to quit smoking or vaping?

It's never too late to quit. Quitting smoking has both short-term and long-term benefits for lowering your cardiovascular risk. No matter how much or how long you've smoked when you quit, your risk of heart disease and stroke starts to drop. People who quit smoking generally live longer than people who continue to smoke.

While you may crave tobacco or nicotine after quitting, most people feel that becoming tobacco-free is the most positive thing they've ever done for themselves.

### How do I quit?

You are more likely to quit 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 Day.** Choose a date within the next seven days when you will quit smoking or vaping. 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. Some are:

- Stopping all at once on your Quit Day.
- Cutting down the number of cigarettes per day or how many times you vape until you stop completely.
- Smoking only part of each 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 whether you need medicines or other help to quit.** Talk with your health care professional to determine which medicine is best for you. Get instructions for using it. Therapies may include nicotine replacement (gum, lozenges, spray, patches or an inhaler) or prescription medicines, such as bupropion hydrochloride or varenicline. You could also ask about a referral for a smoking cessation program.
4. **Plan for your Quit Day.** Get rid of all the cigarettes, matches, lighters, ashtrays and smoking products in your home, office and car. Find healthy substitutes for smoking. Go for walks. Keep sugarless gum or mints with you. Munch carrots or celery sticks.
5. **Stop smoking on your Quit Day.**

(continued)



### What if I smoke or vape after quitting?

It's hard to stay off tobacco and nicotine once you've given in, so do everything you can to avoid that "one." The urge will pass. The first two to five minutes will be the toughest. If you do smoke or vape 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 what triggered the urge and decide what to do differently the next time.
- Sign a contract to stay tobacco-free.

### What happens after I quit?

- Your senses of smell and taste improve.
- Your smoker's cough will go away.
- You'll breathe more easily.
- You'll be free from the mess and smell and the burns on your clothing.
- You'll increase your chances of living longer and reduce your risk of heart disease and stroke.



## 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](http://heart.org/SupportNetwork).

### Do you have questions for your doctor or nurse?

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

For example:

**When will the urges stop?**

**How can I keep from gaining weight?**

### MY QUESTIONS:

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**American  
Stroke  
Association.**  
A division of the  
American Heart Association.

# Blood Glucose Tracker

Week of: \_\_\_\_\_

## SUNDAY

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## FRIDAY

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## SATURDAY

Time: \_\_\_\_\_ MG/DL: \_\_\_\_\_  
 Time: \_\_\_\_\_ MG/DL: \_\_\_\_\_  
 Time: \_\_\_\_\_ MG/DL: \_\_\_\_\_  
 Time: \_\_\_\_\_ MG/DL: \_\_\_\_\_  
 Time: \_\_\_\_\_ MG/DL: \_\_\_\_\_

Weight: \_\_\_\_\_

Questions for my healthcare team:

\_\_\_\_\_  
 \_\_\_\_\_

*Use as many spaces as needed or add more to record your individual daily blood glucose readings.*

