PRISMA HEALTH®

Stroke education for patients and family

Thank you for choosing this Prisma Health facility for care following your stroke.

Our team is dedicated to supporting the health and well-being of you and your family by bringing our purpose to life: *Inspire health. Serve with compassion. Be the difference.*

We hope this booklet will be of help to you. It explains the kind of stroke you had (as well as other kinds of strokes), how to have a good recovery and how to prevent future strokes. It also gives information on resources.

Please let us know if we can answer any questions or be of further assistance. We wish you all the best as you continue to recover!

Prisma Health aims to reduce the effects of a stroke with quick identification, assessment, treatment and recovery.

Date of admission	
Patient name	
Type of stroke	
Discharge plan	
Additional notes	

Quick resource guide

For a full list of resources, see pages 32–33.

Prisma Health–Upstate Providers
Helps you find a doctor
1-844-447-3627 toll free
ghs.org/providers

Prisma Health–Upstate Cerebrovascular & Stroke Center
864-455-8848
ghs.org/stroke

American Stroke Association
1-888-4STROKE (478-7653) toll free
stroke.org

Prisma Health–Midlands CareCall
Helps you find a doctor
803-296-CARE (2273)

Prisma Health–Midlands Stroke Center
803-434-2471
PalmettoHealth.org

American Heart Association
1-800-AHA-USA-1 (242-8721) toll free
heart.org

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In the United States, a stroke occurs every 40 seconds on average, but 80% of strokes are preventable!

Impact of stroke

About 800,000 Americans suffer from a new or repeated stroke each year. That means a stroke occurs every 40 seconds on average. Stroke is the leading cause of serious long-term disability. Stroke is the fifth leading cause of death in the United States. Someone dies from a stroke about every four minutes.

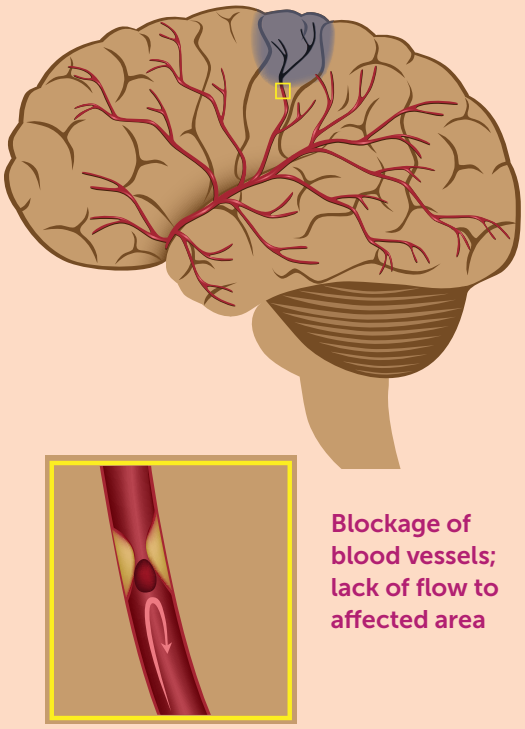
But 80% of strokes are preventable! Lowering your risk factors can help you prevent a stroke from happening. Lifestyle risk factors include being overweight, physical inactivity, cigarette smoking, heavy alcohol consumption and illegal drug use. Medical risk factors include high blood pressure, high cholesterol, diabetes, abnormal heart rhythm and family history of stroke.

What is a stroke?

Your brain is the control center for your whole body. It lets you see, hear, taste, smell, feel, think and move. Each area has special tasks to do, and some areas work together to get their jobs done. When your heart beats, it sends blood through vessels to every part of your body. Blood carries oxygen to brain cells through arteries in and around the brain. Oxygen keeps the brain cells alive and working well.

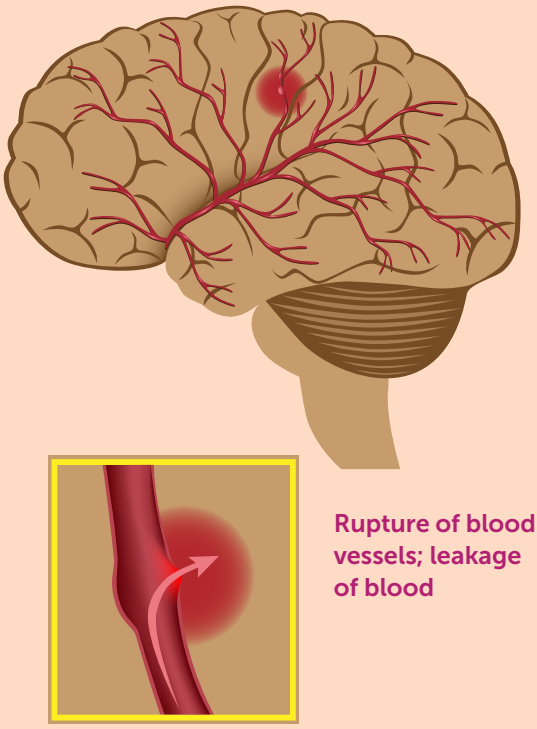
When the brain's blood flow is stopped by a blockage or leaks into the wrong place, brain cells die. This is called a stroke. Brain cells that die will not recover (resulting in permanent brain damage). Other brain cells are in shock and will start working again after a while. No one can tell just how long it will take for these cells to begin working again. Most healing happens in the first year, but people may improve their skills for much longer.

Ischemic stroke



Blockage of blood vessels; lack of flow to affected area

Hemorrhagic stroke



Rupture of blood vessels; leakage of blood

Signs of stroke

Any of the following can be a sign of stroke – and they do not all have to happen at once:

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

If any of these signs happen, call 911 as soon as possible. The ambulance team will call the hospital and tell them your signs. The stroke team will be ready to care for you when you arrive.

If you see any of these signs,

B

Balance off/ dizziness

Ask the person if they are experiencing sudden loss of balance or coordination.

E

Eyes not focusing

Ask the person if they have experienced sudden blurred vision, double vision or sudden, persistent vision trouble.

F

Face drooping

Ask the person to smile. If the face droops on one side, that is a sign of a stroke.

A

Arm weakness

Ask the person to raise both arms. If they cannot hold one arm up, that is a sign of a stroke.

S

Speech difficulty

Ask the person to say a few easy words. If they talk like they are drunk (slurred speech) or you cannot understand what they are trying to say, that is a sign of a stroke.

T

Time to call 911

Time is very important. The sooner you get to the hospital, the better your chances are for improving or getting better. If you wait too long, you may get worse or may not get better.

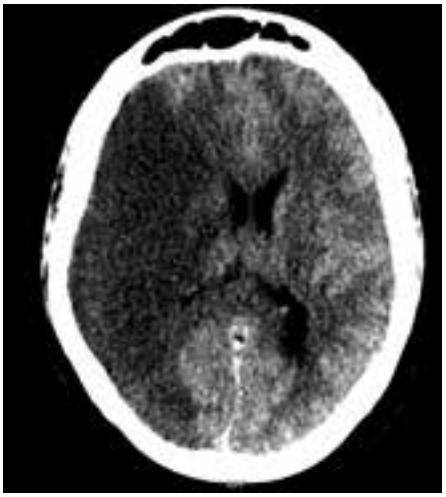
Diagnostics of stroke

When you show symptoms of a stroke, the emergency team will need to evaluate the type of stroke you are having and the areas of your brain affected by the stroke. Your doctor may use several tests to determine your risk of stroke, including:

- A review of medical history
- Physical and neurological examination
- Laboratory (blood) tests
- Diagnostic tests (radiologic)

Diagnostic tests are used to examine how the brain looks, works and obtains its blood supply. They can outline the injured area of the brain and sometimes determine the cause of the stroke. Diagnostic tests that may be ordered include:

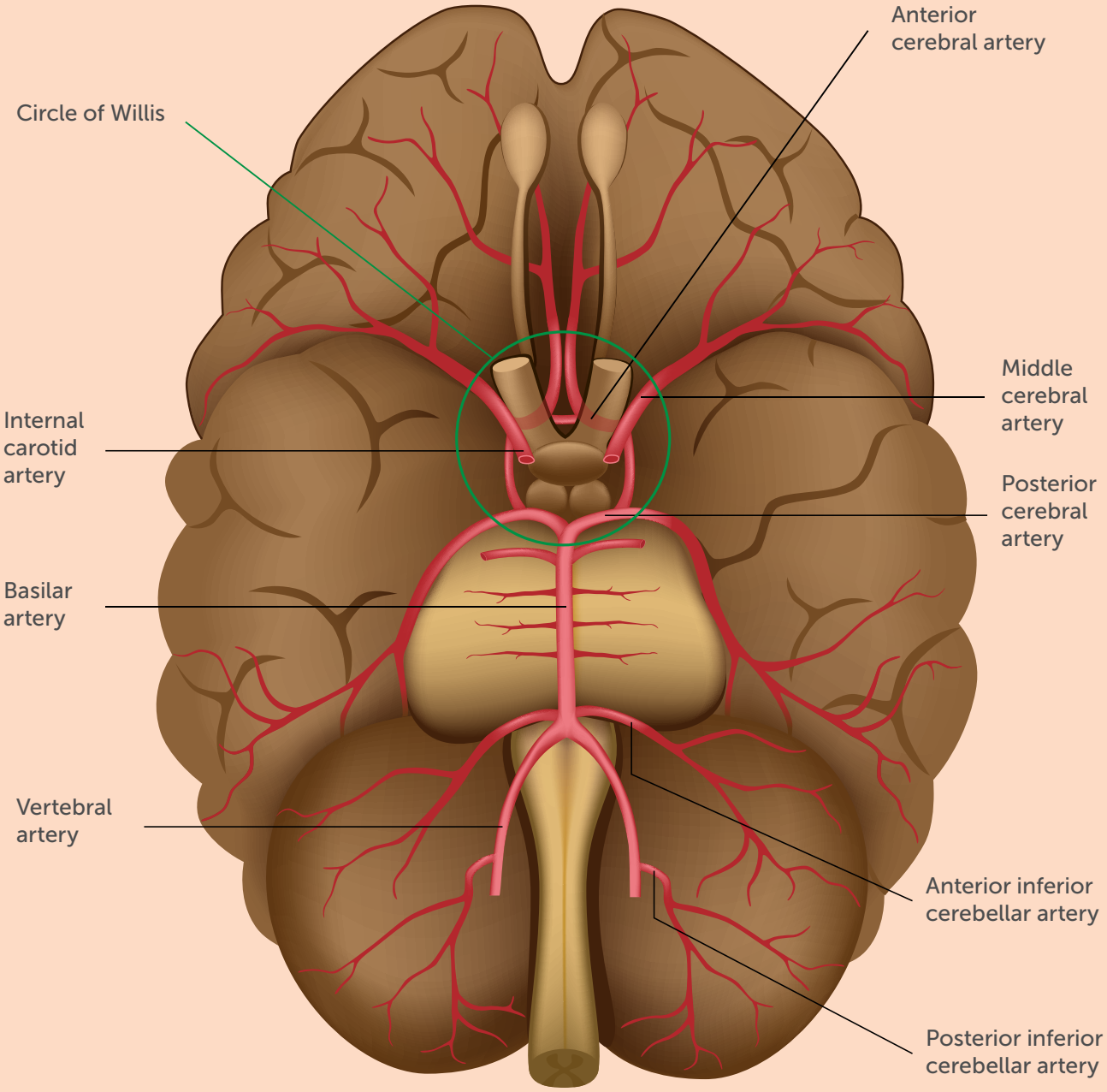
CT scan of hemorrhagic stroke



CT scan of an ischemic stroke

- **CT (computerized tomography) scan** is a test that uses radiation to create a picture of the brain. It is ordered first when diagnosing a stroke.
- **CTA (CT angiography)** uses intravenous contrast dye to show major arteries supplying the brain blood and detect the type and location of a stroke.
- **CTP (CT perfusion)** is a specialized CT test used to evaluate blood flow to brain tissue when an ischemic stroke is suspected.
- **MRI (magnetic resonance imaging)** is a test that uses a large magnetic field to create detailed image of the brain. The image produced by MRI is sharper and more detailed than a CT scan and can be used to diagnose small, deep injuries.
- **MRA (MR angiography)** uses intravenous contrast dye to view the blood flow of the head and neck. The MRA allows the doctor to look at smaller blood vessels to detect the type and location of a stroke.
- **Cerebral angiogram (arteriogram)** is the most definitive way to view the blood vessels of the brain and provides the highest level of detail. In addition to providing high-resolution images, an angiogram also provides information about the blood flow in your brain. For the procedure, a small catheter is placed through an artery in the wrist or groin and carefully moved up through the main blood vessels in the chest and neck. Contrast dye then is injected and X-ray images are taken to construct a 3D view of your vessels.
- **Echocardiogram** is a test that uses sound waves to create a moving picture of the heart. It can provide pictures of the heart's valves and chambers and help evaluate the pumping action of the heart.
- **TEE (transesophageal echocardiogram)** is a test that uses sound waves from a transducer that is placed in the esophagus to produce a very detailed picture of the heart, especially the back of the heart.
- **EEG (electroencephalogram)** is a diagnostic test that uses small metal discs placed on the scalp to pick up electrical impulses. These electrical impulses can show areas of the brain injury and may help identify seizure activity.
- **Carotid ultrasound (Doppler testing)** is a blood flow test that uses ultrasound to provide detailed information about the condition of the carotid and vertebral arteries that supply blood to the brain.

Blood supply of the brain



Your brain is the control center for your whole body. Each area has special tasks to do, and some areas work together to get their jobs done.

Types of stroke

There are three main types of stroke: transient ischemic attack, ischemic stroke and hemorrhagic stroke.

Transient ischemic attack

A transient ischemic attack or TIA ("mini-stroke") is a temporary blockage of blood flow to the brain. TIAs usually last only a few minutes. Although symptoms may go away soon, a TIA is a warning sign that a stroke may occur in the near future. About one-third of people who have a TIA go on to have a severe stroke within the first year. Steps should be taken immediately to prevent a stroke. Diagnostic workup for TIA is the same as for ischemic stroke.

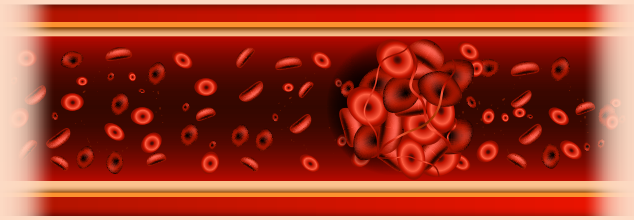


Illustration of transient ischemic attack

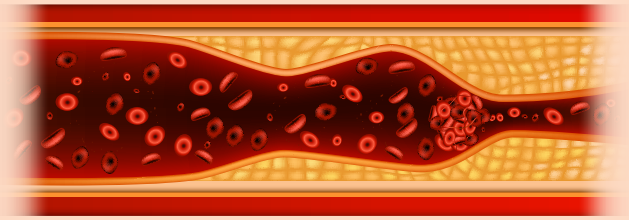


Illustration of ischemic stroke caused by atherosclerosis

Ischemic stroke

An ischemic (iss-KEE-mik) stroke is the most common type of stroke and makes up 87% of all strokes. Ischemic stroke occurs when there is a blockage in a vessel that supplies blood to the brain. If an ischemic stroke is caught early enough, debilitating effects may be reversed with treatment.

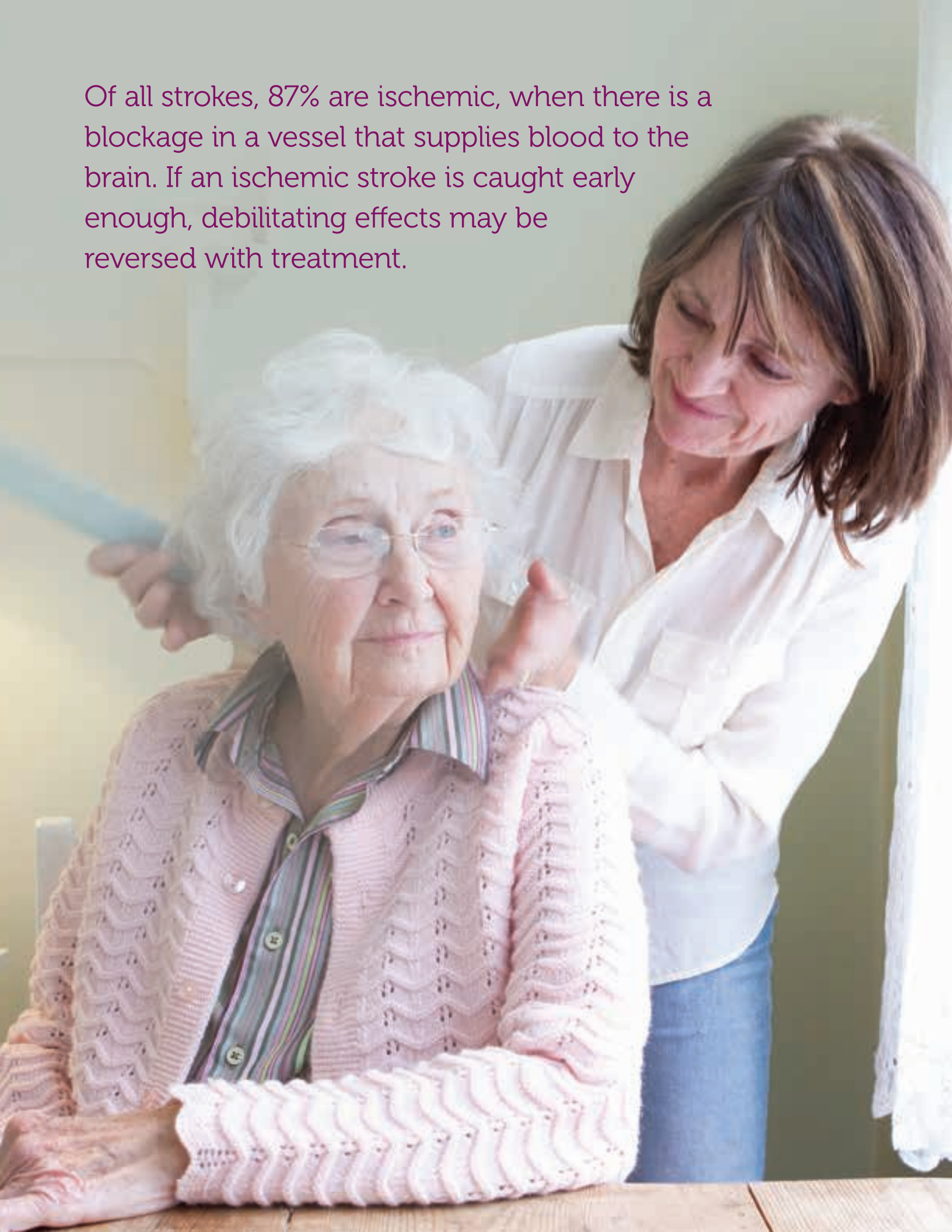
What causes an ischemic stroke?

Ischemic strokes occur when the vessels in your brain become narrowed or blocked, causing severely reduced blood flow (ischemia). The most common ischemic strokes include:

- **Thrombotic stroke.** A thrombotic stroke occurs when a blood clot (thrombus) forms in one of the arteries supplying blood to your brain. A clot may be caused by fatty deposits (plaque) that build up in arteries and cause reduced blood flow (atherosclerosis) or other artery conditions.
- **Large vessel thrombosis.** This occurs in the larger blood-supplying arteries of the brain, such as the carotid artery or middle cerebral artery. Most large vessel thromboses are caused by a combination of long-term atherosclerosis followed by rapid blood clot formation. Thrombotic stroke patients also are likely to have coronary artery disease, and heart attack is a frequent cause of death in patients who have suffered this type of stroke.
- **Small vessel disease/lacunar infarct.** This occurs when blood flow to one of the small arteries deep within the brain becomes blocked. Lacunar strokes represent about 20% of all strokes. The most common risk factor for the development of lacunar stroke is chronic high blood pressure. The condition causes the arteries to narrow. This makes it easier for cholesterol plaques or blood clots to block blood flow to the deep brain tissues.

When treating an ischemic stroke, timing is everything and will affect what treatments are used. Treatment choices can include medications to break up the blood clot or surgery to remove the blood clot.

Of all strokes, 87% are ischemic, when there is a blockage in a vessel that supplies blood to the brain. If an ischemic stroke is caught early enough, debilitating effects may be reversed with treatment.



- **Embolic stroke.** An embolic stroke occurs when a blood clot or other debris known as an embolus forms away from your brain. A common place where blood clots form is in your heart. Then the blood clot is swept through your bloodstream where it can lodge in narrower brain arteries. The blood clot formed in the heart may be the result of a cardiac condition such as atrial fibrillation (Afib) and patent foramen ovale (PFO).
- **Atrial fibrillation (AFib)** is an irregular heartbeat that is a common cause of an embolism. The heart's upper chambers quiver instead of beating effectively, which can let the blood pool and clot. If the clot breaks off, enters the bloodstream and lodges in an artery leading to the brain, a cardioembolic stroke is the result. This condition can cause clots to form in the heart and travel to the brain. 10-12% of all ischemic strokes are caused by AFib.
- **Patent foramen ovale (PFO)** is a small hole in the heart between two chambers (the left and right atrium) that allows blood clots to enter the blood stream. They then can travel to the brain, causing a stroke or a TIA.

Treatment of an acute ischemic stroke: Time is brain

Timing is everything and will affect what treatments are used. Treatment choices can include medications to break up the blood clot or surgery to remove the blood clot.

- **Medication** – Alteplase is a clot-busting drug that can be given to dissolve the clot, but this medication must be administered within 4.5 hours of the time last known to be well, when stroke signs start. Because the benefit of Alteplase is time dependent, it is critical to treat with this medication as quickly as possible.
- **Surgery** – Mechanical thrombectomy is a procedure in which attempts are made to surgically remove a blockage. Thrombectomy is indicated for patients with acute ischemic stroke due to a large vessel occlusion, and guidelines support treatment in eligible patients up to 24 hours after the last known to be well time.

Complications following an ischemic stroke

Complications after a stroke may occur as a direct result of injury to the brain from the stroke or because of a change in individuals' ability to care for themselves. The health care team will closely monitor each stroke patient to treat and prevent complications.

- **Brain edema** is swelling to the brain after injury from the stroke. It is treated with intensive care monitoring, and a craniectomy may be performed to decrease pressure in the brain and on the brain tissue.
- **Cerebral bleeding** is breaking of blood vessels in the brain and can occur after having an ischemic stroke. It is treated with frequent monitoring and may require placement of an external ventricular drain (EVD) and/or performing a craniotomy to decrease pressure in the brain and on the brain tissue.
- **Seizures** are abnormal electrical activity in the brain that causes convulsions. They are treated with medications and decreased stimulation and monitored with electroencephalogram (EEG).
- **Blood clots** (deep vein thromboses) form in veins because of immobility and may migrate to the lungs. They are managed with anticoagulants/blood thinners, frequent position changes and compression hose.

No one can tell just how long it will take for damaged brain cells to begin working again after a stroke. Most healing happens in the first year, but people may improve their skills for much longer.

Hemorrhagic stroke

Hemorrhagic (bleeding) strokes account for about 13% of strokes. Hemorrhagic stroke occurs when a weakened blood vessel ruptures, allowing blood to leak into the brain. This leakage will cause that part of the brain not to function properly.

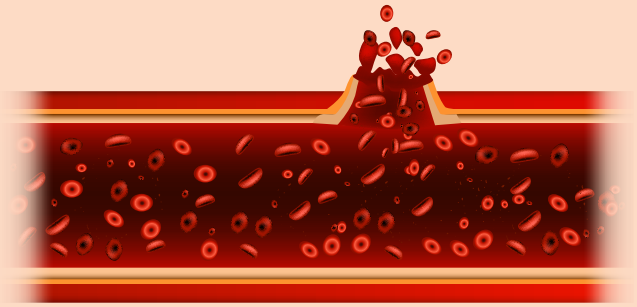


Illustration of hemorrhagic stroke

What causes a hemorrhagic stroke?

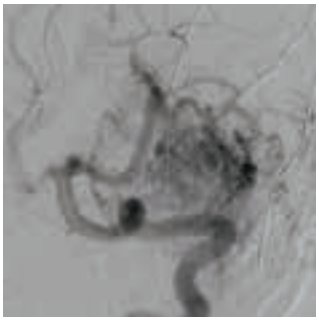
Bleeding around the brain is called a subarachnoid hemorrhage (SAH) and often is caused by rupture of an abnormal vessel (most commonly aneurysms, and sometimes arteriovenous malformations) on the surface of the brain.

Bleeding into the brain is called intracerebral hemorrhage (ICH) and often is caused by high blood pressure. In rare cases, a hemorrhagic stroke may occur after receiving alteplase for an ischemic stroke. This is known as hemorrhagic conversion and is the result of the clot busting, or "blood thinning," mechanism of alteplase.

Treatments of hemorrhagic stroke

- **Cerebral angiogram** – This test may be used to look for the cause of your bleed. In emergencies, a cerebral angiogram may reveal an abnormality in a vessel that needs to be treated to stop the bleeding and/or to prevent further bleeding. In this case, treatment may be performed at the same time or very shortly after.

  Procedures to treat abnormal blood vessels include embolization (endovascular treatment) and surgical intervention with craniotomy.
- **Craniotomy** – This procedure is more invasive and involves opening, and sometimes removal (craniectomy), of a portion of the skull. This may be necessary when aneurysms or arteriovenous malformations (AVM) cannot be embolized effectively. A craniotomy may be performed for resection (removal) of an AVM or a surgical clipping of an aneurysm.
- **Arteriovenous malformation resection (removal of an AVM)** – Sometimes an embolization is performed before this procedure to reduce the risk of bleeding.
- **Surgical clipping** – This procedure is performed by doing a craniotomy and placing a clip on the aneurysm to eliminate blood flow into the aneurysm.
- **Embolization** – This procedure is minimally invasive and does not require cutting into the skull. Using the same technique used for a cerebral angiogram, a catheter is guided to the target vessel and an attempt is made to minimize blood flow to the affected area. This is also called endovascular treatment. Embolization can be performed using multiple techniques: coiling, intrasaccular flow disruptor, stenting, flow diverter and onyx.
  - *Coiling* – This treatment is performed to fill an aneurysm from inside of the vessel. The coils induce clotting within the aneurysm and prevent blood from flowing into it. This is the most common treatment for ruptured aneurysms and does not require blood-thinning medication. Sometimes, coils may compact over time, causing a recurrence of the aneurysm.



Arteriovenous malformation (AVM)

Illustration of surgical clipping

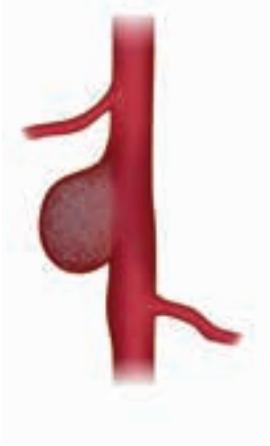


Illustration of coiling

- *Intrasaccular flow disruptor* – With this treatment, a meshed device is placed within the aneurysm to prevent blood flow inside it. An example of this is a WEB embolization. Aspirin may be prescribed following this procedure.
- *Stenting* – Stents may be used alone or in combination with coils. Stents are placed across the vessel where the aneurysm is to redirect blood flow straight through the vessel instead of into the aneurysm. When used with coils, stents can help hold coils in place and serve as an additional "barrier" for blood flow into the aneurysm. Because blood can stick to the stent, antiplatelet medications will be prescribed following the procedure.
- *Flow diversion* – This treatment uses certain types of stents called flow diverters, which are made with smaller grid patterns. The tighter grid allows less blood to move across the stent wall, which redirects the blood flow through the main vessel and away from the aneurysm, helping the artery heal from inside. As with stenting procedures, flow diverters require the use of antiplatelet medications.

Illustration of stenting

- *Onyx* – This glue-like substance is used to seal off a vessel. This is most commonly used to treat AVMs, either alone or before a resection.

Complications and subsequent treatments following a hemorrhagic stroke

In a hemorrhagic stroke, blood can accumulate and compress the surrounding brain tissue. This can lead to increased pressure and/or swelling, which can lead to neurological changes.

- Hydrocephalus results from too much cerebral spinal fluid (CSF) in the ventricles of the brain.
- An external ventricular drain (EVD) is a type of drain that allows CSF to be drained from the brain to alleviate pressure. The drain also has a sensor that monitors the intracranial pressure (ICP).
- A ventriculoperitoneal shunt may be needed if hydrocephalus persists or if an EVD is needed for an extended period of time. This requires a surgical procedure that places a permanent drain running from a ventricle in the brain to another part of the body, such as the area in the abdomen surrounding the stomach (peritoneum). This allows excess fluid to drain so that buildup will not cause increased pressure.
- A craniectomy may be needed when swelling occurs. This is a type of craniotomy that involves removing a portion of the skull to avoid additional damage to the brain.
- Cranioplasty is a surgery that involves replacing the portion of the skull that was previously removed. This can be performed after recovery from the stroke.

More about hemorrhagic stroke

After a bleed, physicians will focus on keeping your blood pressure within a normal range, monitoring for signs of vasospasm (when the vessel constricts, which can lead to additional problems), pain management and managing risk factors specific to you.

After a hemorrhagic stroke, blood will move out of your brain by moving down the spinal cord. Because of this, for a period of time, you may experience headaches and/or neck and back pain. These pains may subside quickly or may persist long term. Please talk to your doctor about the best plan for pain management.

You may experience long-term effects from your stroke. It is important to take medications as prescribed, participate in therapies and follow up with your doctors as recommended.

What is a brain aneurysm?

A brain aneurysm, also called a cerebral aneurysm, is a weakness in part of an artery in the brain. This leads to a bulging or ballooning of the vessel.

Brain aneurysms that have not ruptured usually do not cause any symptoms. Most people who suffer a ruptured aneurysm do not know they have an aneurysm before the event. When brain aneurysms rupture, they usually cause a subarachnoid hemorrhage, which is fatal approximately 50% of the time.

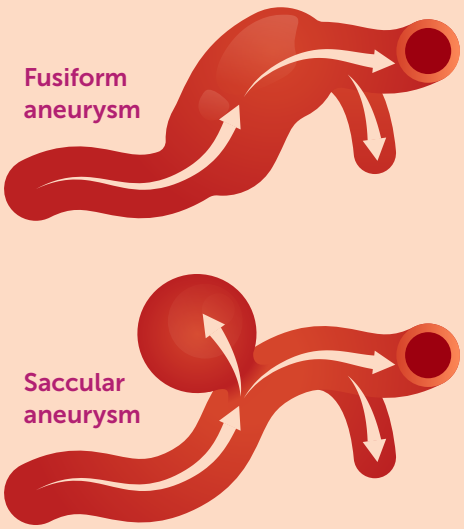
Ruptured aneurysms may cause a sudden severe headache (often described as the worst headache of your life), nausea and vomiting, stiff neck, vision changes, sensitivity to light, dilated (large) pupils, loss of sensation and other stroke-like symptoms.

Some patients are at higher risk of having an aneurysm and/or an aneurysm rupture.

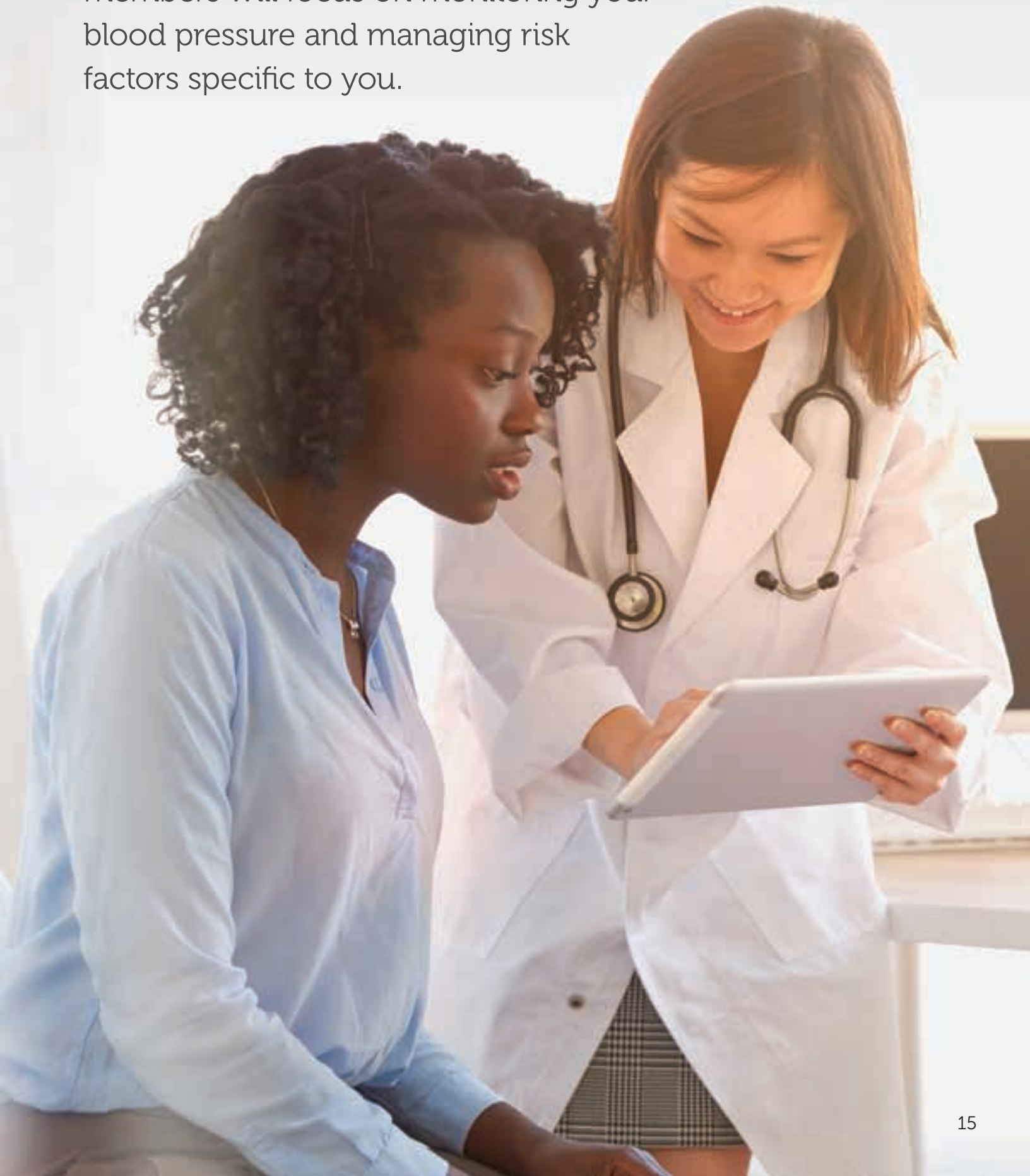
Having two or more first-degree relatives (parent, child or sibling) with cerebral aneurysms indicates a family history. Screening with imaging of the arteries in the brain is recommended for those who have a first-degree relative with a family history.

Other risk factors for developing aneurysms include smoking, illicit drug use and high blood pressure. These factors, along with a history of a ruptured aneurysm, increase the risk of having an aneurysm rupture.

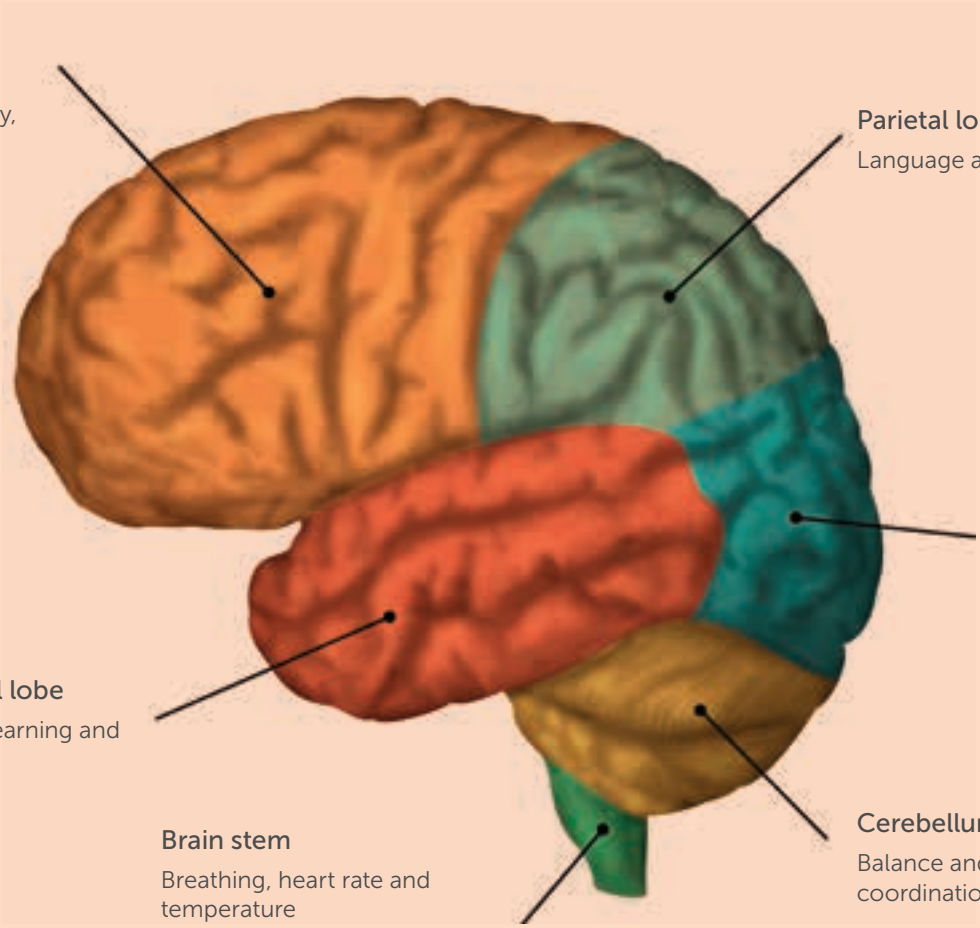
The recommendations provided by the neuro endovascular team regarding different treatment options and/or monitoring are tailored to each patient in consideration of risk factors present.

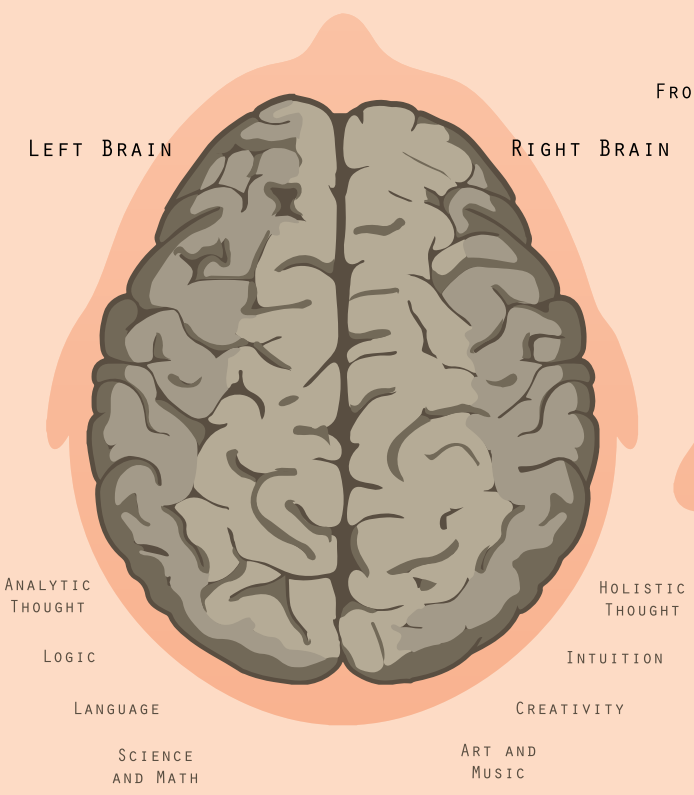


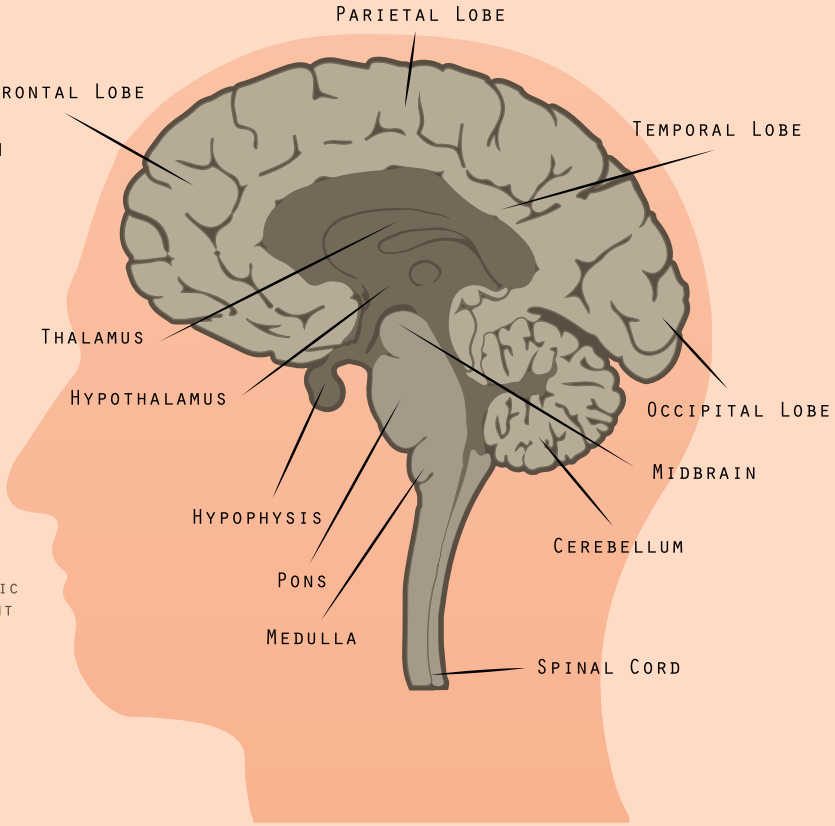
After a hemorrhagic stroke, health care team members will focus on monitoring your blood pressure and managing risk factors specific to you.



Functions of the brain







Effects of stroke

The brain is an extremely complex organ that controls various body functions. If a stroke occurs and blood flow cannot reach the region that controls a particular body function, that part of the body won't work as it should. The effects of a stroke depend primarily on the location of the obstruction and the amount of brain tissue affected.

Left brain

If a stroke occurs in the left side of the brain, the right side of the body will be affected, producing some or all of the following:

- Hemiparesis/hemiplegia (paralysis/weakness on the right side of the body)
- Aphasia (trouble speaking or understanding others)
- Dysphagia (trouble swallowing)
- Dysarthria (slurred and slow speech)
- Slow, cautious behavioral style
- Cognitive-linguistic disorder (memory loss and concentration)

Right brain

If the stroke occurs in the right side of the brain, the left side of the body will be affected, producing some or all of the following:

- Hemiparesis/hemiplegia (paralysis/weakness on the left side of the body)
- Neglect (unawareness of the left side of body or environment)
- Perseveration (the repetition of a particular response)
- Visual/spatial problems
- Problems with attention span (unable to focus attention on a conversation or task)

Cerebellum

When the cerebellum is affected by stroke, coordination and balance problems, dizziness, nausea and vomiting often occur.

Brain stem

The brain stem is the area of the brain that controls all of our involuntary, life-support functions such as breathing, blood pressure and heartbeat. The brain stem also controls eye movements, hearing, speech and swallowing. Since impulses from the cerebral hemispheres must travel through the brain stem on the way to the rest of the body, people with a brain stem stroke also may have paralysis in one or both sides of the body. Every stroke is unique, but strokes tend to affect people in common ways.

The effects of a stroke depend primarily on the location of the obstruction and the amount of brain tissue affected.

Physical and behavioral effects

Pain

Pain, numbness or other strange feelings/sensations may occur in the parts of the body affected by stroke. For example, if a stroke causes you to lose feeling in your left arm, you may have an uncomfortable tingling sensation in that arm. People also may be sensitive to temperature changes, especially extreme cold after stroke. This complication is known as central stroke pain syndrome. This condition generally develops over several weeks after a stroke and may improve over time. But because the pain is caused by a problem in your brain, rather than a physical injury, there are few treatments.

Depression

This may result from chemical changes in the brain caused by stroke or as a normal response to feelings of loss. Typically, 40%–50% of stroke survivors have some level of depression. This depression may occur immediately after a stroke or even weeks to months later. Depression is a serious medical issue that needs to be treated. Symptoms of depression include:

- Sleep problems
- Sudden weight loss or weight gain because of a major change in eating habits
- Avoiding social events
- Lack of interest in once-favored activities
- Drowsiness
- Feelings of worthlessness
- Thoughts of ending your own life

Effects of stroke on the body

Memory problems

Problems with thinking and memory are symptoms of damage to certain areas of the brain.

Less emotional control

Losing the ability to control emotions could mean the part of the brain that controls behavior has some damage.

Difficulty making decisions

Changes in personality or behavior could mean the part of the brain that controls behavior has some damage.

Speech problems

Problems speaking or communicating could mean damage to the left side of the brain, which controls the ability to speak and understand language.

Difficulty breathing

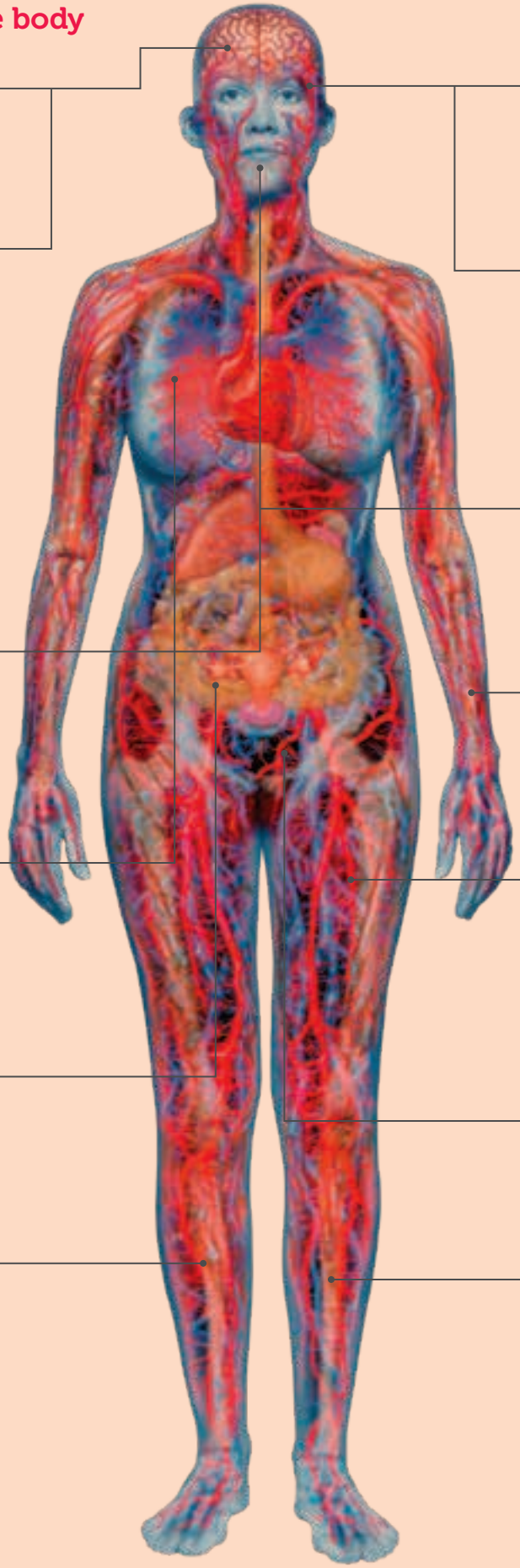
Swallowing difficulties can lead to an infection or pneumonia caused by food or liquid getting into the airway. This causes complications to the lungs.

Incontinence

Damage to the nerves and the brain that control the bowels and bladder can cause loss of control over these functions.

Nerve problems

Nerve problems could mean the brain and certain nerve groups aren't communicating properly due to damage from the stroke.



Visual problems

There may be changes in vision, like losing the ability to judge space and depth or having trouble seeing clearly.

Poor hand-eye coordination

Nerve communication problems with the brain, combined with muscle weakness, can lead to hanges in hand-eye coordination.

Eating and swallowing

Trouble eating and swallowing could mean dysphagia, a paralysis of the throat, tongue or mouth muscles.

Body temperature control

Damage to specific parts of the brain can affect the body's ability to regulate temperature.

Fatigue and low endurance

Feeling tired or worn out despite getting rest is common after stroke. You may need to restructure activities or receive rehabilitation.

Reduced sexual ability

Paralysis or muscle weakness may affect the ability to engage in sexual activity.

Movement and sensation

Either the right or left side of the body may experience loss of feeling and an inability to move muscles.

Recovering from stroke

The effects of stroke may mean that you must change, relearn or redefine how you live. Rehabilitation is a critical part of recovery for stroke survivors. Planning begins early after admission to the hospital.

Stroke team members

- *Physicians* may consult other physicians to help with the evaluation of stroke and planning for treatment after stroke. Those physicians may include a neurologist, neurosurgeon, physiatrist or rehabilitation specialist, cardiologist, and/or hospital internal medicine doctor.
- *Advanced practice providers* (nurse practitioners/physician assistants) work with physicians to assess, diagnose, treat and prescribe medications to stroke patients. They communicate and work closely with other members of the health care team to ensure the delivery of appropriate medical care. They work with stroke patients in the hospital setting and in the outpatient setting after discharge.
- *Nurses* work to involve the patient and family in daily care and the recovery process on a continuous basis. They communicate with other members of the health care team about the patient's progress and report important changes to the physician. Nursing assistants perform routine tasks to assist the nurse to meet basic patient needs.
- *Physical therapists* assess a stroke patient's strength, endurance, range of motion, ability to walk and sensory deficits. They then design a rehabilitation program to help the patient regain control over motor functions.
- *Occupational therapists* help stroke patients relearn skills needed for performing activities such as personal grooming, preparing meals and cleaning house. They often teach people to divide a complex activity into smaller parts. Then, they help the patient practice each part separately and later perform the whole sequence of actions.
- *Speech language pathologists* evaluate and treat stroke patients with language, cognition or swallowing impairments. Those impairments include aphasia, apraxia, cognition deficits and dysphagia. The speech pathologists work with patients and families to educate and help them cope with the aftereffects of a stroke.
- *Dietitians* teach patients and families about nutrition and provide medical nutrition therapy as part of the health care team. They may give advice about the best type of nutrition for patients who have swallowing difficulty after a stroke.
- *Case managers/social workers* help identify the best discharge plan for you. Based on your resources and recommendations from members of the health care team, they will work with you to make sure you receive rehab or nursing services after your discharge from the hospital.

Rehabilitation

Rehabilitation does not reverse the effects of stroke. The goal of rehabilitation is to build your strength, capabilities and confidence, so you can continue to live an active and productive life in spite of the effects of your stroke.

Your rehab plan will depend on what you need to become independent and safe in daily activities. Your plan may include work in these areas:

- Self-care skills
- Mobility skills
- Communication skills
- Cognitive skills
- Social skills

The effects of stroke may mean that you must change, relearn or redefine how you live. Rehabilitation is a critical part of recovery for stroke survivors. Planning begins early after admission to the hospital.

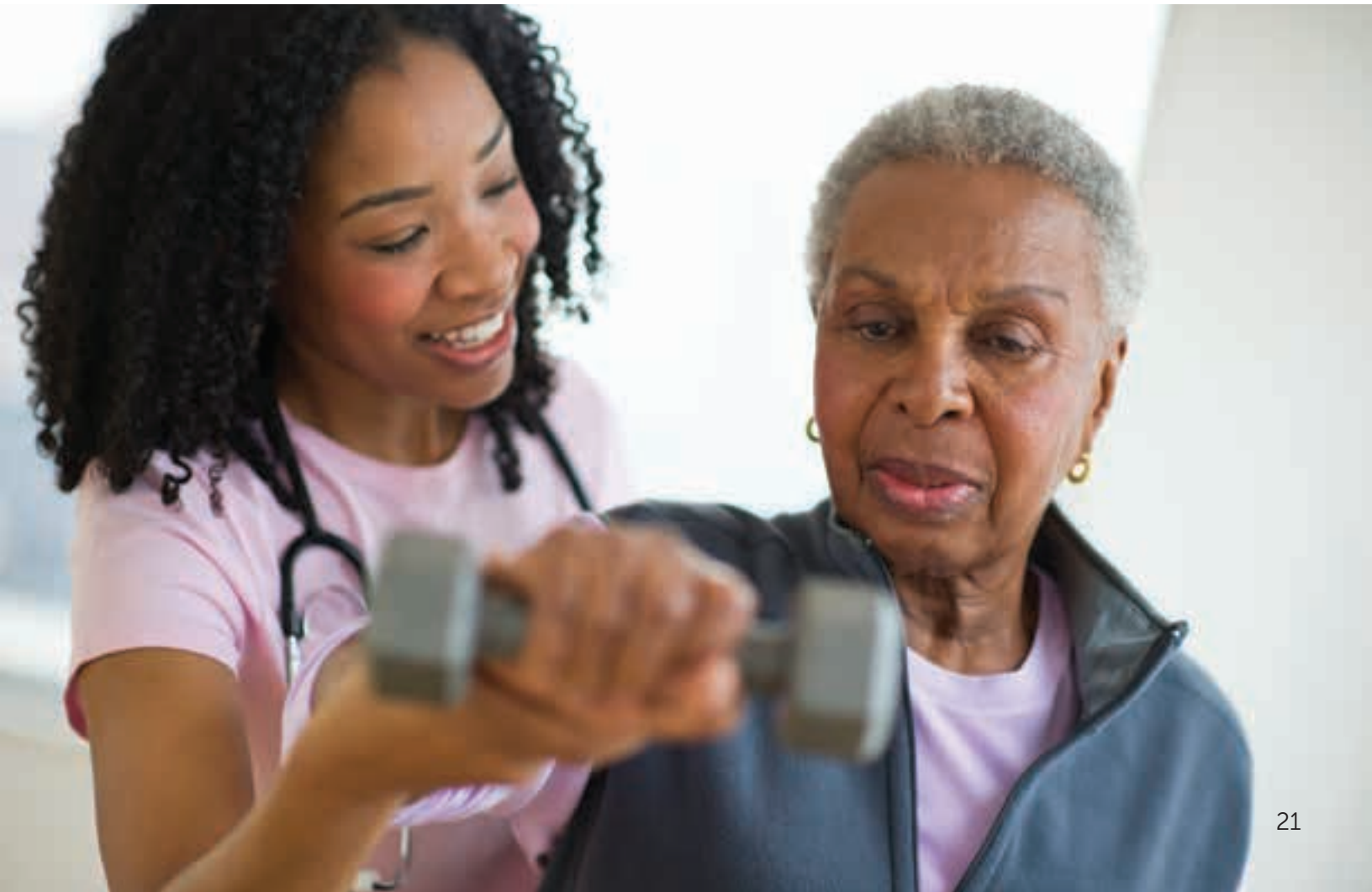
Where does stroke rehabilitation occur?

The treatment plan and level of rehabilitation is determined on an individual basis. The plan is made by taking into account the patient/family's discharge goals, needs and personal resources.

Stroke rehabilitation after discharge from acute care can occur in inpatient rehabilitation hospitals, nursing facilities, the patient's home or outpatient facilities. Some patients may recover from the acute phase with no need for rehabilitation services.

Follow-up care

In addition to rehabilitation services, you will need to see your primary care provider to help manage your care, monitor your recovery and prevent a recurrent stroke. Follow-up testing, such as a CT scan or MRI, may be needed to see how well your brain is recovering. A 30-day monitor or loop recorder may be placed before discharge to monitor your heart rate for an irregular heart rhythm.



Post-acute care services

Post-acute care setting		Services provided	Estimated length of stay/services	Likely candidates
Rehab hospitals	Acute care – inpatient rehab	24-hour medical care and a full range of rehab resources Therapies 3 hours/day – most demanding	2–3 weeks Discharge to home	Those with medical issues who may develop problems without continued medical treatment, but can tolerate intense rehab
	Sub-acute rehab	Daily nursing care and a fairly wide range of rehab services Therapies 1 ½ hours/day – less demanding than acute program	2–3 weeks Discharge to home	Those who have serious disabilities but are unable to handle the demands of acute rehab
Skilled nursing facilities	Short-term rehab/sub-acute	Therapy up to 5 days/week	1–3 months Discharge to home or transition to long-term care	Those who have their medical problems under control but still need 24-hour nursing care
	Long-term care	Custodial care – no therapies	Indefinite	
	Hospice	24-hour nursing care with hospice agency assisting with comfort measures	6 months or less	Those who are to receive comfort care only
Long-term acute care hospital		Acute care nursing services Therapies – less demanding than acute and sub-acute programs	At least 2–3 weeks	Those who need continued specialty medical care with wound care, IV antibiotics and/or respiratory difficulties
Home health agencies		Specific rehab services in the home as needed. May include physical therapy, occupational therapy, speech therapy, nursing care, aide	Varies	Those who live at home but are unable to travel to get their treatment; focus more on maintaining function than improving function
Assisted living facility		Meals provided in dining area, medication assistance and oversight	Indefinite	Those who are independent with transfers and activities of daily living
Outpatient facilities		Doctor's office, outpatient center of a hospital, other outpatient centers and some adult day centers Therapies 2–3 days per week	Varies	Those who have their medical problems under control enough to live in their own homes and can travel to get their treatment
Hospice	Home	Provide support in the home such as comfort medications, equipment and support services for families, but 24/7 care is provided by the family	6 months or less	Those who are to receive comfort care only
	Hospice house	24/7 care is provided by the agency	Less than 2 weeks	Those who are to receive comfort care only

Stroke prevention

Identifying stroke risk factors

Risk factors are traits and lifestyle habits that increase the risk of disease. The more risk factors you have, the higher your chances of having a stroke. The best way to prevent a stroke is to reduce your stroke risk factors. A health care provider can help you change factors that result from lifestyle or environment.

Modifiable risk factors (start managing):

- ☐ **Atrial fibrillation (AFib)** – AFib increases your risk of stroke because the irregular and often rapid heart rate can cause blood clots to develop and travel to your brain. Medications can be taken to help reduce the risk of blood clots and prevent existing blood clots from getting bigger.
- ☐ **Diabetes** – Carefully monitor your blood sugar, follow up with your primary care provider and take your medications regularly. Having diabetes can put you at an increased risk for stroke.
- ☐ **Diet** – Cutting down on salt and fat can help you lower your blood pressure and cholesterol levels.
- ☐ **High blood cholesterol** – Monitoring your cholesterol levels regularly, eating a healthy diet and taking medications can decrease your risk for stroke. Your HDL "good" cholesterol should be greater than 40mg/dLx–60mg/dL, and your LDL "bad" cholesterol should be between 50–70mg/dL.
- ☐ **High blood pressure** – Optimal blood pressure is less than 120mmHg/80mmHg. Checking your blood pressure regularly and taking medications could decrease your risk for stroke.
- ☐ **Obesity** – Manage your weight through diet and exercise.
- ☐ **Obstructive sleep apnea** – In this disorder, you stop breathing in your sleep for 10 seconds or more. Symptoms may include loud snoring, disruptive sleep and excessive daytime sleepiness. An overnight sleep study will need to be conducted to diagnosis obstructive sleep apnea.
- ☐ **Carotid disease** – Carotid arteries in your neck supply blood to your brain. A carotid artery narrowed by fatty deposits from atherosclerosis (buildup of plaque in the artery wall) may become blocked by a blood clot. Carotid artery disease also is called carotid artery stenosis.
- ☐ **Peripheral artery disease** – This condition is caused by the narrowing of vessels carrying blood to the leg and arm muscles. The blood vessels narrow because fatty plaque builds up in artery walls.
- ☐ **Sickle cell disease** – In this genetic disorder, sickle-shaped red blood cells are less able to carry oxygen to the body's tissues and organs. They tend to stick to blood vessel walls, blocking arteries to the brain and causing a stroke.

Modifiable risk factors (stop!):

- ☐ Drinking too much alcohol
- ☐ Using illegal drugs
- ☐ Being inactive
- ☐ Smoking or being exposed to secondhand smoke

Non-modifiable risk factors

- ☐ **Increasing age** – People of all ages can have a stroke, but the older you are the more your risk increases for stroke.
- ☐ **Sex (gender)** – Stroke is more common in men than in women. In most age groups, more men than women have stroke in a given year. However, women account for more than half of all stroke deaths. Women who are pregnant, take birth control pills and smoke, or have high blood pressure are all at an increased risk for stroke.
- ☐ **Heredity (family history) and race** – Your risk of stroke or aneurysm (including rupture) is greater if a parent, grandparent, sister or brother has had a stroke or aneurysm. African Americans have a much higher risk of death from a stroke or aneurysm rupture than Caucasians. Stroke is the fourth leading cause of death for Hispanics living in the United States, and Hispanics have different risk factors for stroke. Compared to Caucasians, Hispanics have strokes at younger ages.
- ☐ **Prior stroke or heart attack** – Previous strokes (including those from ruptured aneurysms) or heart attacks increase the risk of having another stroke.

Healthy eating and weight management tips

Maintaining a healthy diet can help modify many stroke risk factors including obesity, high blood pressure, high cholesterol, cardiovascular disease and diabetes. A diet containing five or more daily servings of fruits or vegetables may reduce your risk of stroke. Limit sodium intake. Don't add salt while cooking or at the table.

Following a Mediterranean diet, which emphasizes olive oil, fruit, nuts, vegetables and whole grains, may be helpful. Please visit oldwayspt.org for more resources on Mediterranean diet.

Some helpful hints include swapping:

- Beef for fish. Fish is high in omega3s.
- Butter for olive oil. The healthy monounsaturated fats in olive oil will add flavor, satisfaction and healthy fats to your diet.
- Chips, crackers and bars for nuts and seeds. Nuts are high in healthy fats and protein. Choose those over the empty calories found in processed snack foods.
- Mayonnaise for avocado. Choosing the healthy fats in an avocado over the unhealthy fats in mayo will protect your heart.
- Salt for herbs and spices. Put down the salt shaker and get creative with rosemary, basil, garlic, pepper, and other herbs and spices.

Finally, pick lean meats and trim visible fat. Choose low-fat cheese and skim or 1% milk.

Maintaining a healthy diet can help modify many stroke risk factors including obesity, high blood pressure, high cholesterol, cardiovascular disease and diabetes.

Experiment with different flavors for seasoning.

- Cut back on sugar intake by drinking less juice, sweet tea and regular soda. Limit sweets such as cakes, pies, cookies and candy.
- Limit your alcohol intake.
- Drink plenty of calorie-free drinks such as water, diet soda, Crystal Light®, unsweetened tea. Thirst is often confused as hunger.
- Eat at least three times per day. Have regularly scheduled meals and snacks, and always place food on a plate – never eat from the bag. Quit eating when you feel satisfied.
- Choose healthy snacks such as low-fat cheese, yogurt, and fruit and vegetables with low-fat dip. Plan ahead to have these items on hand.
- If experiencing a need for emotional eating (eating for reasons other than hunger), find a substitute activity such as going for a walk, listening to music or calling a friend.
- Increase activity in your daily life (clear with your doctor first). For example, take the stairs, park farther away from your destination or go for a few short walks a day.

Medications for stroke prevention

Medications will be prescribed by the health care team to prevent another stroke from possibly occurring or help control/reduce modifiable risk factors that contribute to strokes.

DO's

- Take your medication at the same time every day.
- Tell your doctor about any possible side effects you may be having.
- Tell your doctor about all new medications you are taking, including non-prescription (over-the-counter) medicines, vitamins, herbal supplements, nutritional supplements and homeopathic medicines.
- Bring your medications to doctors' appointments.
- Tell your doctor if you are pregnant or are planning on becoming pregnant.

DON'Ts

- If you miss a dose, do not take extra doses to catch up. Take it as soon as you can. If it is almost time for your next dose, wait until then to take the medicine and skip the missed dose.
- Do not stop taking your medicine without first talking to your doctor, even if you are feeling better.
- Do not drink excessive alcohol or take illegal or street drugs.
- Do not use tobacco products.
- Do not take any over-the-counter medicines, herbal supplements, nutritional supplements, or homeopathic medicines without first talking to your doctor.

Procedures for stroke prevention

The carotid arteries located on each side of an individual's neck are the main arteries supplying blood to the brain. Over time, these arteries can be clogged with fatty deposits (plaque) slowing the blood flow to the brain. This condition is known as carotid artery disease.

Carotid angioplasty and stenting are procedures that open clogged arteries to restore blood flow to the brain. They can be performed emergently as part of treatment of stroke or for stroke prevention.

- **Carotid angioplasty** – This procedure involves inserting a tiny balloon into the clogged artery to widen the area so that blood can flow freely to the brain.
- **Carotid stenting** – This procedure involves placing a small metal stent in the clogged artery.
- **Carotid endarterectomy** – This surgical procedure involves opening the carotid artery to remove the plaque.

You and your provider team will determine which procedure is the safest option for you.

Diabetes medications

When diabetes is detected, a doctor may prescribe changes in eating habits, weight control and exercise programs, and even drugs to keep it in check. It's critical for people with diabetes to have regular checkups. Work closely with your health care provider to manage diabetes and control any other risk factors. Ask your nurse to provide additional information about any new diabetes medications your doctor may have prescribed.

Common medications for stroke patients

		Description	Brand name	Generic name	Considerations
Medications that affect clotting	Antiplatelets	Prevent platelets (blood cells) from sticking together	Aggrenox Aspirin Plavix Brilinta	dipyridamole and aspirin aspirin clopidogrel ticagrelor	Risk of bleeding. Aspirin can cause gastrointestinal toxicity.
	Anticoagulants	Reduce the risk of blood clots and prevent existing blood clots from getting bigger	Coumadin Eliquis Pradaxa Xarelto Heparin Lovenox	warfarin apixaban dabigatran rivaroxaban heparin enoxaparin	Risk of bleeding. Warfarin requires lab (INR) monitoring to check therapeutic level.
	Thrombolytics	Break up blood clots	Activase	alteplase	Angioedema (allergic reaction with swelling of lips and/or tongue), risk for bleeding
Medications that reduce cholesterol	Statins	Lower cholesterol by inhibiting the enzyme in the blood that produces cholesterol in the liver	Crestor Lipitor Mevacor Pravachol Zocor	rosuvastatin atorvastatin lovastatin pravastatin simvastatin	Abnormal liver function, allergic reaction, muscle pain, upset stomach
	Other	If you are unable to take a statin medication, your physician may prescribe a different medication to lower your cholesterol			
Medications that reduce blood pressure	Beta blockers	Prevent the stimulation of the adrenergic receptors responsible for increased cardiac action. Lower blood pressure and improve heart function by slowing the heart rate.	Coreg Corgard Lopressor Tenormin Toprol	carvedilol nadolol metoprolol atenolol metoprolol XL	Dizziness, hypotension (low blood pressure), low heart rate, depression, fatigue, sexual dysfunction
	Angiotensin-converting enzyme inhibitors (ACE-I)	ACE inhibitors produce vasodilation by inhibiting the formation of angiotensin II. Lower blood pressure and make it easier for the heart to pump through open blood vessels.	Altace Lotrel Vasotec Zestril	ramipril benazapril enalapril lisinopril	Angioedema (allergic reaction with swelling of lips and/or tongue), cough, dizziness, increased blood potassium
	Calcium channel blockers	Lower blood pressure by opening vessels and slowing the heart rate.	Adalat/ Procardia Cardizem Norvasc	nifedipine diltiazem amlodipine	Dizziness, constipation, hypotension (low blood pressure), flushing, swelling (feet, ankles, hands)
	Diuretics ("water pill")	Remove excess water and sodium through the kidneys. The sodium takes water from the blood, which reduces pressure in the vascular system, decreasing the workload of the heart and lowering blood pressure.	Aldactone Bumex Demadex Lasix Microzide	spironolactone bumetanide torsemide furosemide hydrochlorothiazide	Low blood potassium, magnesium, sodium; dry mouth; hypotension; muscle cramps; thirst
	Angiotensin II receptor blockers (ARB)	Block the chemical angiotensin II, allowing blood vessels to enlarge and reduce blood pressure.	Avalide Benicar Cozaar Diovan	irdesartan olmesartan losartan valsartan	Allergic reaction, cough, dizziness, increased potassium
	Vasodilators	Open (dilate) blood vessels allowing blood to flow more easily through vessels, lowering blood pressure	Hydralazine Isosorbide Nitroglycerin	apresoline imdur many available	Fainting, facial flushing, headache, hypotension, dizziness, nausea
	Other	Because the effects from a stroke vary for every patient, your physician may prescribe other medications that are not listed. These may affect your central nervous system (to promote brain healing), mood, blood sugar, muscles, or any other complication from the stroke or additional risk factors for another stroke.			

Life after stroke

Planning your activities

- Keep it simple.
- Talk to your doctor about any problems you are having and when you can return to your usual activities.
- Do as much as you can for yourself at home; take breaks and rest before getting tired.
- Practice the skills and exercises that you learned in the hospital.
- Use your weak limbs as much as possible.
- Do important things first or in the order of most importance.
- Combine motions and activities.
- Limit work that requires lifting and pushing.
- Alternate sitting and standing.
- Set a reasonable pace rather than rush through activities.
- Ask others to help or give a task to others when needed.
- Breathe evenly; do not hold your breath.

Personal care and safety at home

- Take all medications as ordered.
- Follow up with your primary care provider.
- Place things within reach in all rooms.
- Use all assistive devices properly.
- Avoid using a bath rug in the bathroom and remove any rugs that are not nailed down.
- Clear away all barriers in your room, the hall and doorways.
- Check for good lighting in and around your home.
- When sitting, use a supportive chair.
- Avoid temperatures that are too hot or cold.
- Let others do things you cannot or are too tired to do.
- Learn ways to relax.
- Exercise to help reduce stress.
- Take the time to do the things you enjoy.
- Know the signs and symptoms of stroke.
- Call 911 or use a Lifeline® in an emergency.

You will need to see your primary care provider to help manage your care, monitor your recovery and prevent a recurrent stroke.

Driving after stroke

Driving is a complex skill that requires coordination, which may be affected by changes after a stroke. Whether you will be able to drive depends on the area of the brain affected and the amount of injury to the brain. Your doctor will help you decide when you may be ready to drive.

Your diet at home

Eat the kind of foods that your doctor and dietitian recommend. Continue to use any chewing and swallowing techniques that you were taught by your speech therapist; drink only liquids that are the consistency ordered by your speech therapist.

More ways to learn

Use the resources in this book to call for information, receive information in the mail or to access useful sites on the internet. Find a support group in your area.

Stroke family caregiver

People who provide help for stroke survivors are called caregivers. Everyone involved in helping a stroke survivor is a caregiver – the spouse, family members and friends. It is important that stroke survivors and caregivers work together as partners as it is often a challenge for both to adjust to their changed roles. The adjustment may be easier if the caregiver and stroke survivor share in making decisions as much as possible and try to share their feelings honestly.

Talking about feelings or asking for help is difficult for many people. Case managers, social workers, doctors and nursing staff at Prisma Health are on hand to assist you, your family and your caregivers through this difficult time.

Chaplain services also are offered while you are in the hospital. Please tell your nurse or doctor if you would like to speak to anyone about the new role in your life.

Community resources such as adult day care, meal programs, home health aides and respite care may be an option for the stroke survivor and caregiver.

Caregiver Bill of Rights

I have the right to:

- Take care of myself.
- Not feel selfish: It will allow me to take better care of my loved one.
- Seek help from others even though my loved one may not approve.
- Know the limits of my own endurance and strength.
- Keep aspects of my own life that do not include the person I care for, just as I would if he or she were healthy.
- Get upset, be depressed and express other difficult emotions.
- Not accept any attempt by my loved one to control me through guilt, anger or depression.
- Receive respect, affection, forgiveness and acceptance from my loved one as long as I offer these behaviors in return.
- Take pride in what I am able to do and to admire the courage it sometimes takes to meet the needs of my loved one.
- Protect my personal needs and my right to make a life for myself that will help me when my loved one no longer needs my full-time help.
- Expect that as new improvements are made in finding resources to aid physically and mentally disabled persons in our country, similar improvements will be made toward aiding and supporting caregivers.

Resources

A stroke can be overwhelming for you and your caregiver(s). We hope the information in this booklet helped explain some of the things you may be experiencing and help with your recovery. Following are lists of additional help and resources for you and your caregiver:

Stroke help and support

- *Prisma Health Midlands CareCall*
  Helps you find a doctor
  803-296-CARE (2273)
- *Prisma Health Midlands Stroke Center*
  803-434-2471
  PalmettoHealth.org (search "Stroke Center" in the search bar)
- *Prisma Health–Upstate Providers*
  Helps you find a doctor
  1-844-447-3627 (toll free)
  ghs.org/providers
- *Prisma Health–Upstate Cerebrovascular & Stroke Center*
  864-455-8848
  ghs.org/stroke
- *American Heart Association*
  1-800-AHA-USA-1 (242-8721) (toll free)
  heart.org
- *American Stroke Association*
  1-888-4STROKE (478-7653) (toll free)
  stroke.org
- *National Institute of Neurological Disorders and Stroke*
  1-800-352-9424 (toll free) or 301-496-5751
  ninds.nih.gov
- *Brain Aneurysm Foundation*
  1-888-272-4602 (toll free)
  Bafound.org
- *Stop Atrial Fibrillation*
  Stopafib.org
- *Social Security Administration*
  Employment Services for People with Disabilities
  1-800-772-1213 (toll free)
  ssa.gov/work
- *Medicare*
  Centers for Medicare & Medicaid Services
  medicare.gov
- *S.C. Department of Health and Environmental Control (DHEC)*
  Smoking cessation program (talk with a trained tobacco treatment specialist)
  1-800-QUIT-NOW (784-8669) (toll free)
  scdhec.gov
- *Prisma Health Midlands FREE Smoking Cessation Program*
  One-month supply of medication and six educational sessions: all services are free, regardless of income
  Call CareCall 803-296-2273
- *Aphasia Hope Foundation*
  913-484-8302
  apashiahope.org
- *Aphasia Recovery Connection*
  aphasiarecoveryconnection.org
- *National Aphasia Association*
  aphasia.org
- *National Institute on Deafness and other Communication Disorders*
  1-800-241-1044 (toll free)
  TTY 800-261-1055
  nidcd.nih.gov/
- *National Rehabilitation Information Center*
  1-800-346-2742 (toll free)
  naric.com
- *Young Stroke*
  youngstroke.org
- *Brain Injury Association of America*
  1-800-444-6443 (toll free)
  202-296-6443
  biausa.org
- *Brain Injury Resource Center*
  703-761-0750
  headinjury.com
- *Brain Buddy*
  brainbuddy.org
- *American Sleep Apnea Foundation*
  myapnea.org
- *Joe Niekro Foundation for Stroke Survivors of Aneurysm (SAH) and AVMs*
  1-877-803-7650 (toll free)
  JoeNiekroFoundation.org

Caregivers help and support

- *Caregiving*
  caregiving.com
- *Family Caregiver Alliance*
  Support for those caring for adults with chronic disabling health conditions
  1-800-455-8106 (toll free)
  caregiver.org
- *National Respite Locator*
  respitelocator.org
- *Partnership for Prescription Assistance*
  Assistance for medications from pharmaceutical companies
  1-888-477-2669 toll free
  pparx.org
- *NeedyMeds.com*
  1-800-445-8106 (toll free)
  needymeds.com
- *Welvista*
  Assistance with medications for residents of South Carolina
  welvista.org
  803-983-9184
  1-800-503-6897 (toll free)
- *All About Seniors*
  1-888-365-3908 toll free
  704-366-1410
  allaboutseniors.org

Notes

Discrimination is against the law

Prisma Health does not discriminate on the basis of race; color; national origin; religion; age; sex; physical, mental or other disability; medical condition; sexual orientation; gender identity; gender expression; pregnancy; ancestry; marital status; citizenship; or veteran status.

Prisma Health provides appropriate aids and services, including qualified interpreters and written information in various formats, for people with disabilities. It provides language assistance services, including translated documents and oral interpretation, to people whose primary language is not English. All services are timely and offered for free. Those needing these services in the Upstate should call 864-455-7000.

Prisma Health has designated its Diversity Director to ensure compliance with these services. Any person who believes someone has been discriminated against may submit to the Diversity Director, within 60 days of becoming aware of the alleged discrimination, a written complaint with the name and address of the person filing the grievance, as well as the problem or action alleged to be discriminatory.

Complaints may be filed at Diversity@PrismaHealth.org or 701 Grove Road, Greenville, SC 29605, attn. Diversity Director. Individuals may file a complaint in court or with the U.S. Department of Health and Human Services, Office of Civil Rights, by mail at 200 Independence Ave. SW, Room 509F, HHH Building, Washington, DC 20201, by phone at 1-800-368-1019 or online at https://ocrportal.hhs.gov/ocr/office/file/index.html.

Language assistance information

Si usted habla español, tenemos a su disposición servicios gratuitos de asistencia lingüística. Llame al 864-455-7000. (Spanish)

如果您说中文，傳譯服務可免费提供服务。您可以拨打。864-455-7000 (Chinese)

Nếu bạn nói Tiếng Việt, có các dịch vụ hỗ trợ ngôn ngữ miễn phí dành cho bạn. Gọi số 864-455-7000. (Vietnamese)

한국어를 사용하시는 경우, 언어 지원 서비스를 무료로 이용하실 수 있습니다. 864-455-7000 번으로 전화해 주십시오. (Korean)

Si vous ne maitrisez pas bien la langue anglaise, des services gratuits d'assistance linguistique sont disponibles au numero suivant 864-455-7000. (French)

Kung nagsasalita ka ng Tagalog, maaari kang gumamit ng mga serbisyo ng tulong sa wika nang walang bayad. Tumawag sa 864-455-7000. (Tagalog)

Если Вы говорите на русском языке, то Вам доступны бесплатные услуги переводчика. Звоните 864-455-7000. (Russian)

Wenn Sie Deutsch sprechen, stehen Ihnen kostenlos sprachliche Hilfsdienstleistungen zur Verfügung. Rufnummer: 864-455-7000. (German)

જો તમે ગુજરાતી જાણતા હોય તો, ભાષા સહાયક સેવાઓ, વિના મુલ્યે, તમારા માટે ઉપલબ્ધ છે. ફોન કરો (૮૬૪) ૪૫૫-૭૦૦૦. (Gujarati)

إذا كنت من الناطقين باللغة العربية، تتاح خدمات المساعدة اللغوية لك. اتصل على الرقم 864-455-7000. (Arabic)

Se fala português, encontram-se disponíveis serviços linguísticos, grátis. Ligue para 864-455-7000. (Portuguese)

注意事項：日本語を話す場合、言語支援サービスは無料でご利用できます。864-455-7000 までお電話ください。(Japanese)

Якщо ви розмовляєте українською мовою, ви можете звернутися до безкоштовної служби мовної підтримки. Телефонуйте за номером 864-455-7000. (Ukrainian)

अगर आप हिंदी बोलते हैं, तो आप के लिए निः शुल्क भाषा सहायता सेवाएँ उपलब्ध हैं। 864-455-7000 पर कॉल करें। (Hindi)

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