

Stroke



Understanding and Recovering



MOUNT CARMEL

Learning About Stroke

If you or a loved one has had a stroke, learning more about this condition can help you make choices about your care and treatment. This guide can help you understand stroke and the changes that may result, how to manage your risk factors, and the steps towards recovery. As you will learn, not all strokes are the same. This guide is meant to provide general education about stroke, and some information may not apply to you.

Your healthcare team is here to provide care, answer your questions, and help you with your recovery. Working together with you and your loved ones, our goal is to help you regain as much function as possible.

Ask your healthcare provider if you have any questions or concerns.

STROKE is an Emergency!

Every minute counts... B.E.F.A.S.T.!

Know the signs and symptoms of a stroke:

BALANCE	Sudden trouble walking, dizziness, loss of balance or coordination
EYE	Sudden onset of blurred or double vision, or loss of vision in one eye
FACE	Facial droop Uneven smile <i>Ask the person to smile. Is the person's smile uneven or lopsided?</i>
ARM	Arm numbness Arm weakness <i>Ask the person to raise both arms. Does one arm drift downward?</i>
SPEECH	Slurred speech Difficulty speaking or understanding <i>Ask the person to repeat a simple sentence. Is the person unable to speak or hard to understand?</i>
TIME	If you have any of these symptoms or see someone else having them, BEFAST and call 9-1-1 immediately! Treating a stroke quickly can reduce damage to the brain. Note the time when the symptoms first appear. This will help healthcare providers determine the best treatment.

Have the ambulance go to the nearest certified stroke center.

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My Stroke Highlights

I was found to have:

- Ischemic stroke
- Hemorrhagic stroke
- Cryptogenic stroke
- TIA – transient ischemic attack

My risk factors include:

- | | |
|---|--|
| <input type="checkbox"/> High blood pressure | <input type="checkbox"/> Alcohol overuse |
| <input type="checkbox"/> Diabetes | <input type="checkbox"/> Drug use |
| <input type="checkbox"/> High cholesterol | <input type="checkbox"/> Clotting disorder |
| <input type="checkbox"/> Heart disease | <input type="checkbox"/> Sleep apnea |
| <input type="checkbox"/> Irregular heart rhythm | <input type="checkbox"/> Previous stroke or TIA |
| <input type="checkbox"/> Smoking | <input type="checkbox"/> Previous heart attack |
| <input type="checkbox"/> Obesity | <input type="checkbox"/> Carotid artery disease |
| <input type="checkbox"/> Lack of exercise | <input type="checkbox"/> Peripheral vascular disease |

My follow-up care includes:

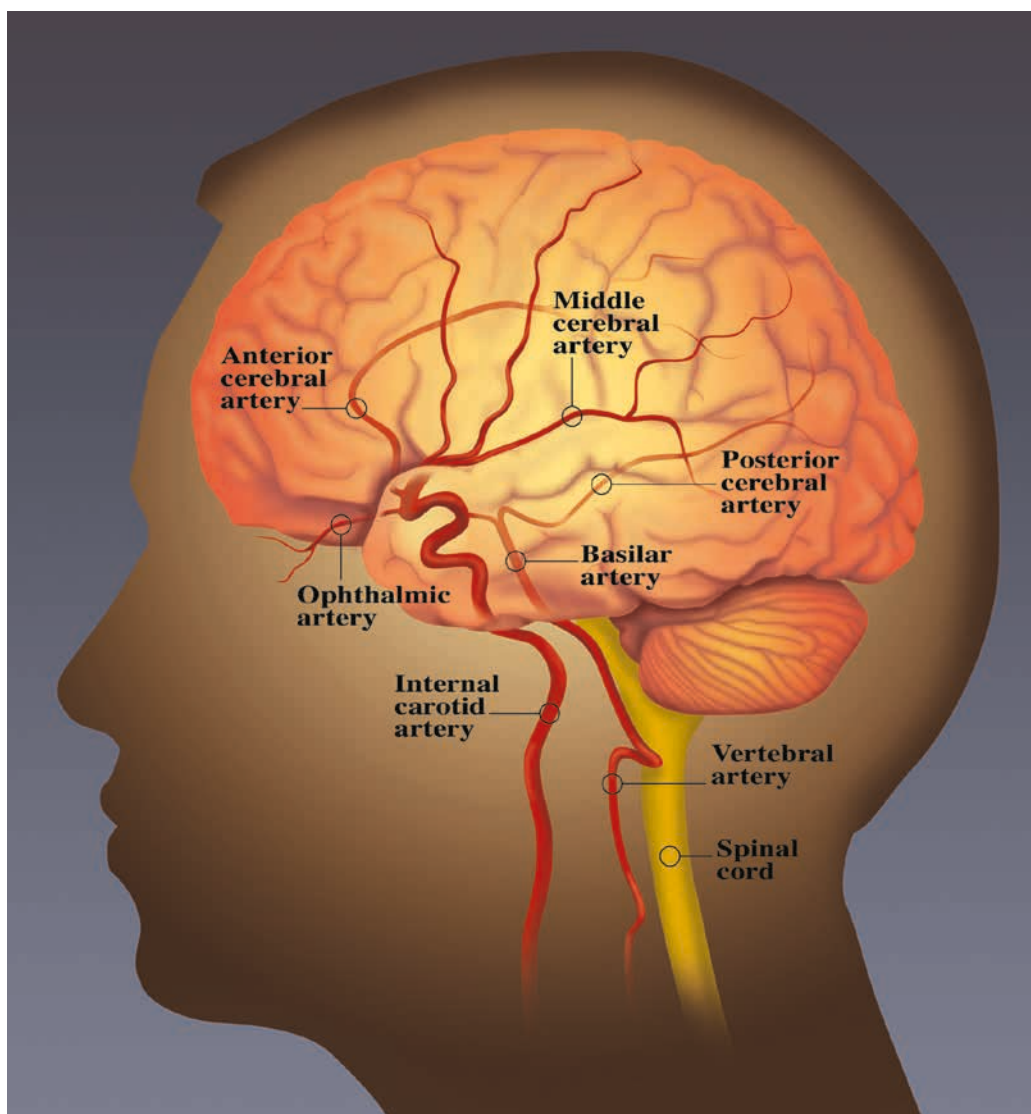
- See your doctor 5 to 14 days after discharge.
- If you do not have a family doctor, call 614-234-LIFE (5433) for help in finding one.
- Take your medication list from the hospital to your doctor’s appointment. You will need refills from your doctor for some of these medications.
- If you need physical, speech, or occupational therapy, keep your scheduled appointment or call to schedule an appointment within 1 week.
- **Do NOT drive** until you have permission from your doctor.
- Depression is common after a stroke. See pages 22-23 for more information. If you feel depressed or think you may have signs of depression, talk to your doctor.

Learning about Stroke

What is a Stroke?

The brain controls many functions of the body, including our movements, breathing, and digestive system. It is the source of our thoughts, emotions, language, and memories. Each area of the brain is responsible for a specific function. Blood vessels, called arteries, and their many branches supply the brain with blood. If something blocks the flow of blood to the brain, brain cells can't get oxygen and will start to die. This causes a stroke.

When a stroke damages a certain part of the brain, that part may not work as well as it did before. A stroke can cause emotional and physical changes, depending on the part of the brain that was affected. These changes can be temporary or permanent.



Types of Stroke

Knowing the type of stroke tells us what caused the stroke and helps guide treatment plans and prevention.

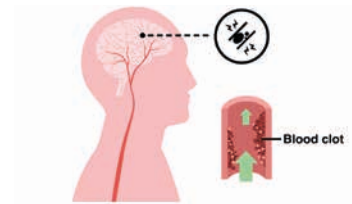
Ischemic stroke occurs if a blood vessel that supplies the brain is blocked or greatly narrowed. This can happen when fatty deposits (plaque) build up along the vessel wall and cause blood to collect (clot).

Embolic stroke is a type of ischemic stroke. In this case a blood clot or plaque has formed at a distant site such as the heart. The clot breaks away and lodges in a smaller vessel in the brain, blocking the blood flow to the brain tissue and causing a stroke.

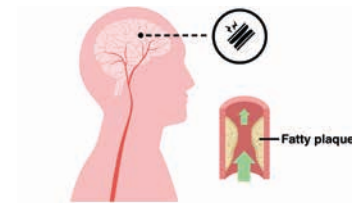
Thrombotic stroke is another type of ischemic stroke. It is caused by a blood clot that forms inside a blood vessel in the carotid artery in the neck or an artery in the brain. The clot blocks the blood flow to the brain tissue, which causes the stroke.

Cryptogenic stroke is a stroke that does not have a known cause. In most cases, a stroke is caused by a blood clot that blocks the flow of blood to the brain. In about 25%-30% of patients, testing does not reveal the reason for the stroke. There are many things that may cause a cryptogenic stroke. Studies suggest that cryptogenic stroke are more common in African-Americans and Hispanics.

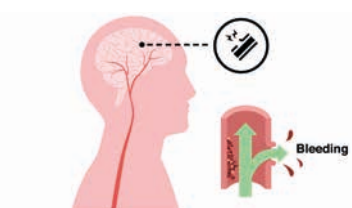
Hemorrhagic stroke differs from the other types of strokes. It occurs when a small vessel in the brain weakens and breaks. Blood spills into brain tissue, killing cells. Other brain cells die because blood does not reach them.



Ischemic Stroke



Embolic Stroke



Hemorrhagic Stroke

Symptoms

The symptoms of a stroke are sudden and affect only one side of the body. The symptoms depend on the site and the amount of damage to the brain. Symptoms may include:

- Sudden numbness, tingling, and/or weakness of the face, arm, and/or leg
- Sudden confusion, or trouble talking or understanding speech
- Sudden trouble seeing out of one or both eyes
- Sudden trouble walking, dizziness, or loss of balance or coordination
- Sudden severe headache without a known cause

Diagnosing and Treating a Stroke

You may also hear the term TIA (transient ischemic attack), which may be called a “mini-stroke.” Although the symptoms of stroke and TIA can be the same, strokes and TIAs differ in key ways:

- Stroke symptoms usually last longer than 24 hours.
- Most TIAs last less than 5 minutes; the average is about 1 minute.
- Most strokes result in some problems that may go away in time or may remain.
- There are no lasting effects with a TIA.
- TIAs are strong warning signs that a stroke could occur in the future.

Always call 911 when any symptoms of stroke occur. Getting to the emergency room as soon as possible is critical to recovery.



The first step in caring for someone with symptoms of a stroke is to do certain tests to make sure it is a stroke, and if so, determine the type of stroke. These two tests can be used to diagnose a stroke:

CT (Computerized Tomography)

A CT scan is the first test done to see if symptoms are caused by bleeding (a hemorrhagic stroke) or a brain tumor. These can be seen right away on a CT, while an ischemic stroke will not be seen on a CT for several days.

MRI (Magnetic Resonance Imaging) and MRA (Magnetic Resonance Angiography)

An MRI/MRA is done the first or second day to show where the damage is in the brain and if there is any blockage in the blood vessels. When an MRI/MRA cannot be done due to a pacemaker or for other reasons, a second CT scan may be taken.

Finding the Cause

These tests may be done to help find the cause of a stroke, although the cause cannot always be found.

Carotid Duplex

A carotid duplex is an ultrasound (sound wave) test that shows the blood flow of the carotid arteries. If there is blockage, further testing may be needed.

Echocardiogram

An echocardiogram is an ultrasound test that shows the chambers, valves, and function of the heart.

TCD (Transcranial Doppler)

A TCD is an ultrasound that shows the arteries in the brain and detects slow or blocked blood flow.

Coagulation Tests

Blood is drawn and tested to detect blood clotting problems.

TEE (Transesophageal Echocardiogram)

A TEE detects problems with the chambers and valves of the heart. It also can detect an irregular heartbeat or defect in the septum wall of the heart that may cause blood clots to form in the heart, break off, and travel to the brain.

Angiogram

An angiogram is used to detect:

- Blood clots in the arteries in the brain
- Weak spots, called aneurysms, in the lining of blood vessels
- Defects of the blood vessel walls
- The amount of blockage in a vessel

Treating a stroke involves diagnosis and immediate care, rehab therapy to improve functioning from resulting deficits, and care for risk factors. This often includes medication and changes in lifestyle.

Treating Stroke

At the first symptom of a stroke, call 911 right away. Getting immediate treatment can help reduce the long-term effects of a stroke. *Time is brain.* Time sensitive treatments offered for stroke are:

- **T-PA (Alteplase):** A “clot busting” medication that must be given within 4½ hours of the start of symptoms.
- **Clot Retrieval (Thrombectomy):** A clot that is seen on scans can be removed with a catheter through the groin. This can be done for up to 24 hours after the start of symptoms, however faster treatment can mean better recovery.
- **Insertion of a Stent:** A stent is a tiny wire mesh tube that is inserted to hold open a vessel, restoring blood flow.



Medications Used in Treatment

These are some of the medications that your doctor may prescribe to help prevent another stroke. The choice of medication depends on the type of stroke.

Antiplatelet Agents

Aspirin

Aspirin is given to reduce the “stickiness” of the blood. It reduces the risk of stroke. Aspirin comes in plain or coated tablets. Coated tablets are less irritating to the stomach. There are many brands and strengths of aspirin, so be certain to buy the correct strength. To be sure, ask your pharmacist.

Aspirin can cause nausea, stomach burning, or indigestion. Call your doctor right away if you have:

- Severe stomach pain
- Bruising or bleeding
- Bloody or dark urine
- Bloody or dark stools
- Ringing in the ears

Clonidogrel (Plavix®)

Plavix may be prescribed to help stop the blood from forming clots in the blood vessels. Some possible side effects include indigestion, nausea, vomiting, rash, and diarrhea.

Call your doctor right away if you have:

- Severe stomach pain
- Bruising or bleeding
- Bloody or dark urine
- Bloody or dark stools
- Fever or chills
- Sore throat

Aggrenox®

Aggrenox is a medication that contains aspirin and dipyridamole. Aggrenox is used to help prevent future strokes in people who have had a TIA or stroke. It helps prevent clots from forming that could block a blood vessel in the brain and cause a stroke.

Call your doctor right away if you have:

- Severe headache
- Severe stomach pain
- Bloody vomit or vomit that looks like coffee grounds
- Blood in stool or urine
- Ringing in the ears
- Yellowing of skin or eyes
- Skin rash with hives or intense itching

Call 911 or go to the nearest emergency room if you have:

- Swelling of the face or eyelids
- Wheezing or trouble breathing
- Severe dizziness or drowsiness
- Chest pain
- Signs of a stroke:
 - Sudden numbness or weakness of face, arm, or leg
 - Sudden confusion, or trouble speaking or understanding
 - Sudden trouble seeing out of one or both eyes
 - Sudden trouble walking, dizziness, or loss of balance or coordination
 - Sudden severe headache with no known cause

Anticoagulants

Anticoagulants are often called blood thinners. These medications decrease the clotting ability of the blood. This helps prevent clots from forming in blood vessels.

Anticoagulant Safety Measures

Follow these measures when taking any of the anticoagulants:

- Tell your doctor or dentist that you are taking an anticoagulant before you plan any medical or dental procedures. You may be instructed to stop taking it for a short time.
- Check with your doctor before:
 - Taking any aspirin or aspirin products
 - Taking any NSAIDs (anti-inflammatory medications), such as naproxen (Aleve®) or ibuprofen (Advil® or Motrin®)
 - Drinking alcoholic beverages
- Contact your doctor right away if you have severe stomach or abdominal pain, bruises, bleeding, bloody or dark urine, bloody or black stools, yellowing of the skin or the whites of your eyes, fever, chills, or sore throat.

Warfarin (Coumadin®)

The amount of Coumadin you take is determined by the rate at which your blood clots. Your doctor will be ordering a blood test called an INR to check your blood clotting time. Your Coumadin dose may or may not be changed, depending on your test results. Before taking any prescription or over-the-counter products, check with your doctor or pharmacist.

Generic Name	Brand Name
Warfarin	Coumadin®

Coumadin, Vitamin K, and Your Diet

Vitamin K counteracts the effects of Coumadin – do not take vitamin K supplements. There are certain foods that contain vitamin K:

- Broccoli
- Kale
- Brussels sprouts
- Spinach
- Greens
- Asparagus
- Cabbage

If you like these foods and eat them often, you can continue to do so, but you need to be consistent and eat them regularly. The key thing to remember is to avoid major changes in vitamin K intake in your diet from week to week.

Direct Thrombin Inhibitor

Dabigatran (Pradaxa®) is an anticoagulant. It is best to take it with a glass of water (with or without food).

Generic Name	Brand Name
Dabigatran	Pradaxa®

Factor Xa Inhibitors

These medications are also anticoagulants. Xarelto is taken once daily with the evening meal. Eliquis is taken twice a day, with or without food.

Follow the *Anticoagulant Safety Measures* when taking direct thrombin or factor Xa inhibitors. Since these medications work differently than Coumadin, you will not need to have frequent blood tests or be concerned about vitamin K foods.

Generic Name	Brand Name
Rivaroxaban	Xarelto®
Apixaban	Eliquis®

Knowing and Managing Your Risk Factors

A number of factors are linked to an increased risk for stroke. Some of these — such as being male, African American, Hispanic, or older than age 55 — are factors that you cannot change. Having heart disease or a prior TIA or stroke is also a risk factor. The risk factors that you can manage are high blood pressure, diabetes, smoking, high blood cholesterol levels, and being overweight or inactive.

By changing some habits, having regular medical care, and following your doctor's instructions, you can make changes to manage your risk factors. Knowing what to focus on is the first step.

High Blood Pressure

High blood pressure (hypertension), or three readings higher than 130/80, is the leading risk factor for stroke. High blood pressure can injure the lining of the blood vessel walls. This can lead to plaque buildup and/or bleeding in the vessels of the brain, both of which can cause a stroke.

If you have high blood pressure:

- Discuss your target blood pressure with your doctor.
- Take your medication as prescribed by your doctor.
- Keep your blood pressure checkups.
- Work on losing weight, being more active, or quitting smoking as needed.

Diabetes

People with diabetes are two to four times more likely to have a stroke or heart disease. Diabetes affects all blood vessels, including those that supply the brain.

If you have diabetes:

- See your doctor regularly and discuss your target blood sugar values.
- Take medications as prescribed by your doctor.
- Make certain that you and your family understand your diet and care.
- Consult a dietitian or attend a diabetes class if you feel you need more guidance about your diet or diabetes care.

Resources:

- Mount Carmel Diabetes Self-Management Program
614-546-4582
- Central Ohio Diabetes Association
614-884-4400
- American Diabetes Association
800-342-2383
www.diabetes.org

Smoking and Tobacco Use

Smoking and using tobacco products increase blood pressure, heart rate, and cholesterol and cause plaque buildup. All of these can lead to a stroke.

If you smoke or use tobacco:

- Quit. Millions of people have quit smoking, and so can you.
- Ask your doctor or nurse for more information on quitting smoking.

Resources:

- Ohio Tobacco Quit Line
800-784-8669
- American Lung Association
800-586-4872
- American Cancer Society
800-227-2345
- www.smokefree.gov — offers tools and guidance from professionals to help you quit

High Blood Cholesterol

Cholesterol is a waxy, fat-like substance that is found in your blood. It plays an important role in your body. Your liver makes cholesterol and it is also found in many foods. Cholesterol is carried through the blood on proteins called lipoproteins. Two main types of lipoproteins include:

Low-Density Lipoprotein (LDL) is often called the “bad” cholesterol because it can build up on the walls of your blood vessels. A high LDL level increases the risk of stroke and heart disease. Once you have had a stroke, your risk for another stroke and heart disease is greater. You will be treated with cholesterol-lowering medication (statins)

regardless of what your cholesterol level was before your stroke.

High-Density Lipoprotein (HDL) is often called the “good” cholesterol because it picks up excess cholesterol in your blood and takes it back to the liver. The liver then breaks it down and removes it from your body. Although we often hear about lowering our cholesterol, having higher levels of HDL cholesterol may help reduce the risk of stroke and heart disease.

- An HDL level above 60 mg/dL is ideal.
- For men, having below 40 mg/dL is considered undesirable.
- For women, an HDL level below 50 mg/dL is undesirable.

In addition to medication, talk to your doctor about ways to:

- Safely increase your activity
- Get to a healthy weight
- Quit smoking
- Make healthful changes to your diet

These lifestyle changes can improve your cholesterol levels. Talk to your doctor or a dietitian for more information on weight loss and a healthy diet.

Heart Disease

If you have heart disease or have had a heart attack or bypass surgery, you are at an increased risk for stroke. When plaque builds up in the vessels in your heart, the vessels in your brain are likely to have buildup as well.

You are also at an increased risk for stroke if you have:

- Atrial fibrillation
- A valve replacement
- Heart failure

With these conditions, a blood clot could travel from the heart to the brain and cause a stroke. If you have any of these:

- See your doctor regularly.
- Follow your doctor's instructions closely.

Prior TIA or Stroke

Having a TIA is a warning sign that you are at high risk for stroke. About one third of people who experience a TIA go on to have a stroke within a year. If you have had a stroke in the past, you are at higher risk for having another stroke. Find out what other risk factors you have and how to make changes to decrease your risk.

Alcohol Use

If you drink alcohol, limit your intake to one drink a day, such as 12 ounces of beer, 5 ounces of wine, or 1½ ounces of liquor. If you have trouble limiting your alcohol use, talk to your doctor, your nurse, or a social worker.

Drug Use

Using drugs such as cocaine can also cause a stroke. If you use drugs, talk to your doctor, your nurse, or a social worker. They can refer you to a substance-abuse treatment program.

Being Overweight (BMI 25 or Above)

Body Mass Index (BMI) is a more accurate measure than weight alone because it is based on your height and weight. If it is 25 or above, you are at an increased risk for high blood pressure, high cholesterol, and diabetes, all of which can lead to stroke and heart disease.

If you are overweight:

- Talk with your doctor or a dietitian about an eating plan to lose weight.
- Set goals and record your progress.
- Ask a friend or family member for support.
- Be as active as you can be within your doctor's guidelines.

Resources:

- Academy of Nutrition and Dietetics
800-877-1600
www.eatright.org
- *Cooking Light*
www.cookinglight.com

Being Inactive

Being inactive makes it harder for you to control your weight. Even if your weight is in the normal range for your height, a lack of regular activity is a risk factor for high blood pressure, high cholesterol, and diabetes.

If you have been inactive:

- Consult your doctor about your activity level.
- Find activities you enjoy.
- Set an exercise routine that you can keep.

Nutrition After a Stroke

Having a healthy eating plan after you've had a stroke will help you to manage risk factors and improve your health. Although you are likely taking medications to lower your blood pressure and cholesterol, following this plan will aid in managing those risk factors and will have many healthy benefits.

This plan includes:

- Foods that are low in sodium, which comes mainly from salt
- Plenty of vegetables, fruits, whole grains, and fat-free or low-fat dairy products
- Heart-healthy kinds of fat to reduce the buildup of plaque in your blood vessels

Difficulty Swallowing (Dysphagia)

After a stroke, some people have problems with swallowing. If you do, you will be taught how to manage this and what textures and types of foods and liquids are safe for you. This is important in preventing food or liquids from going down your windpipe into your lungs.

Weight Loss

Talk with your doctor about what a healthy weight is for you. If you need to lose weight, try decreasing your portion sizes and focus on eating vegetables, fruits, whole grains, healthy fats, and lean protein. You can also ask your doctor, dietitian, or nurse for more resources and information on weight loss.

To Help Control Blood Pressure

- Ask your doctor or dietitian how much sodium is right for you.
- Limit the sodium that you get from food and drinks.
 - Do not salt food at the table.
 - Use very little, if any, salt when you cook.
 - In general, avoid foods with more than 300 milligrams (mg) sodium per serving. These may be too high in sodium for your meal plan.
 - Check labels on processed meats and commercially prepared and prepackaged foods. These are often high in sodium.
 - Choose carefully when eating out. Restaurant foods can be very high in sodium. Request low-salt or no-salt foods. Many restaurants will prepare food with less salt upon request.
- Eat plenty of fruits and vegetables that are high in potassium.
 - Good fruit choices are bananas, oranges, apricots, cantaloupe, and apples.
 - Good vegetable choices include potatoes, sweet potatoes, tomatoes, spinach, and zucchini.
- Use fat-free and low-fat dairy products. These will help you get the calcium and potassium that your body needs.

To Help Control Blood Cholesterol Levels

- Limit total fat to 5 to 8 servings per day or 25% to 35% or less of total calories.
- Eat very little trans fat and saturated fat. These types of fat can raise LDL (low-density lipoprotein), which is the “bad” cholesterol in the blood.
- Choose unsaturated fats, which are heart healthy and include soybean, canola, olive, and sunflower oils. Liquid or soft tub margarines are also fine. Remember, too much of any fat is unhealthy.
- Limit the amount of cholesterol you have each day to 200 milligrams (mg). Foods high in cholesterol include fatty meats, shrimp, egg yolks, and dairy foods.
- Eat 20 to 30 grams (g) of fiber each day.
- Eat walnuts or add flaxseed (ground or oil) to food. These are also high in omega-3 fats.

Understanding Deficits

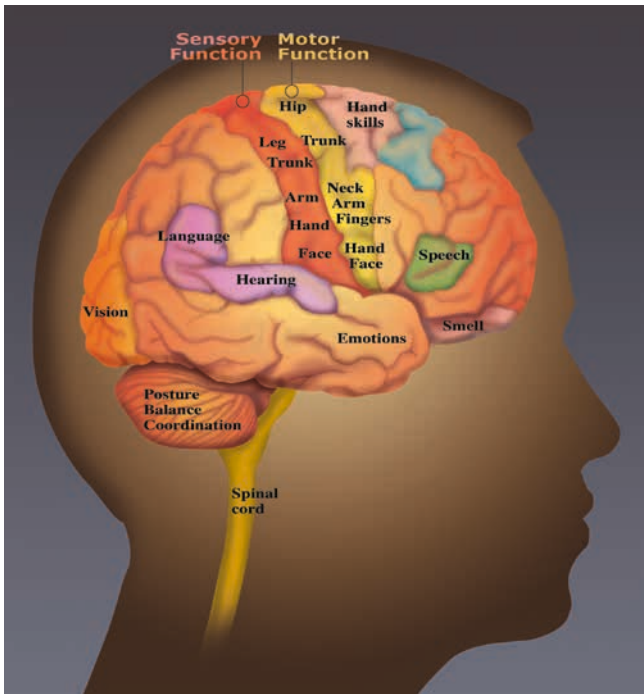
Brain Regions and Functions

The brain is divided into regions that control the functions of the body. If a region of the brain is damaged from a stroke, symptoms related to that region may occur. These symptoms may include loss of movement or coordination, impaired sight, and trouble speaking or understanding speech.

- Sensory functions relate to sensation of body parts, such as feeling heat from a stove or pain from a sharp object on the foot.
- Motor functions relate to movement. Certain regions of the brain direct specific body movements.
- Regions in the brain also control vision, language, hearing, emotions, speech, smell, posture, and balance.

Deficits That May Occur

Understanding the deficits that you or your family member has is the first step in dealing with them. Each part of the brain has a role in controlling the body. Damage to any part of the brain limits its ability to carry out its role. This results in lost skills, problems with thought processes or movement, or changes in personality traits. Having a stroke does not mean that you have all of these changes. Your doctor and healthcare team will explain your deficits and the treatment plan.



Motor (Movement) Deficits

Movement problems usually happen on only one side of the body. These range from mild weakness to not being able to move the arm or leg at all. If muscles in the face are weakened, there will be a drooping of an eyelid, the mouth, or a whole side of the face.

Neglect

Neglect involves:

- Ignoring the side of the body that has been affected
- Dividing things at the midline
- Eating only from one side of the plate and leaving the rest

Cognitive (Thought Process) Changes

Cognitive changes may include not being able to:

- Recognize family members, friends, or familiar places
- Remember how to do daily activities
- Recall such things as the date, the season, or your age
- Follow simple commands
- Act in the manner that seems appropriate to a situation

Emotional Changes

There may be a lack of control of emotions. This often involves rapid mood changes that include laughing or crying at the wrong times. This is called emotional lability.

Depression is also common after a stroke. It can slow down recovery from a stroke and needs to be treated if it occurs.

Ataxia

Ataxia is the lack of control and coordination of muscles and movement. This may involve clumsiness, staggering, or dizziness.

Apraxia

With apraxia, the brain sends incorrect messages to the muscles. Apraxia can affect the muscles in the arms, legs, voice box, or mouth. This results in a loss of the ability to:

- Perform learned or purposeful movements
- Make proper use of objects
- Do things that are normally automatic

Sensory Deficits

Sensory deficits usually occur on one side of the body. When the sense of touch is involved, there may be tingling or numbness in the face, arm, or leg. The ability to feel or sense hot or cold may be decreased or missing. Sight deficits may be present as blurred vision or a loss of vision in one or both eyes. Blindness or defective vision in one half of the field of vision is called hemianopia or hemianopsia.

Dysphagia

Difficulty with swallowing is called dysphagia. It can affect eating, drinking, and taking medication. If your doctor suspects a swallowing problem, a speech-language pathologist (SLP) will test your swallowing.

Language Deficits

These may include:

- Not being able to express things correctly
- Not being able to name objects or people (anomia)
- Knowing what you want to say, but having the wrong words come out
- Not understanding spoken language
- Slurred or garbled speech

Aphasia

Aphasia results in difficulty using and understanding language. This includes speaking, understanding, reading, and writing. The severity of aphasia varies widely.

People with aphasia have difficulty communicating and they are often aware that their understanding and use of language has changed. This makes aphasia very frustrating.

People with aphasia may:

- Struggle to produce sounds or words
- Have trouble repeating words or imitating simple sounds
- Speak in short phrases or “broken” sentences
- Use constant jargon or “nonsense” speech
- Swear, without really meaning to use that language
- Have trouble with reading, writing, or

simple calculation

- Not be able to understand what others are saying, even though it may appear that they do

When talking to someone with aphasia:

- Include him/her in conversations.
- Speak slowly and clearly.
- Give information in small amounts.
- Allow extra time for processing thoughts.
- Use gestures, pictures, or drawings.
- Avoid constant “quizzing” or “testing.”
- Offer encouragement and support without pressure to perform.

Dysarthria

Dysarthria is slurred speech that is caused by weakened muscles and nerves in the tongue, voice box (larynx), or mouth. A person with dysarthria may be able to say words and understand language, but may not be able to speak the words clearly enough to be understood by others.

Someone with dysarthria may:

- Not be able to control and manage breathing to clearly produce sounds
- Sound monotone, nasal, or strained, or have a different voice than before the stroke
- Have problems with chewing food or drinking liquids

To help someone with dysarthria, encourage him or her to:

- Take a deep breath before speaking
- Slow down when speaking
- Exaggerate tongue and mouth movements when speaking
- Sing songs

Recovering from a Stroke

You and Your Family

You and your family are the most important people on your healthcare team. You will be working with many staff members in your recovery. It is hard to predict recovery from a stroke. Recovery can be a slow process, and many decisions may need to be made about treatment options. Your doctor and the staff will offer guidance to you and your family.

Your recovery will be enhanced by:

- Being patient with the evaluation process. This is an important part of treatment, since a stroke affects each person differently.
- Keeping a list of questions, phone numbers, and appointments. You may also want to record progress as it occurs. A record of your progress helps you to remember how far you have come and to stay motivated throughout the rehab process.

As a family member or loved one, it is important for you to:

- Check when it is best to visit. Once therapy begins, your loved one may spend a lot of time in therapy. The therapist may need you to attend some sessions, but often it is best for the patient to work with the therapist without “an audience.”
- Take care of yourself so you will be better able to support and care for your loved one. This is often a stressful time. Try to rest when you can, eat healthfully, and do some things that you enjoy.

About Your Therapy

While many tests are being performed and the cause of your stroke is being determined, an occupational therapist, a physical therapist, and/or a speech therapist may be ordered to assist with your recovery. Depending upon your needs, therapists are available in many different settings.

Occupational Therapy

An occupational therapist will help you improve your skills with self-care, homemaking, leisure interests, and work tasks. The focus is on your normal daily activities.

The occupational therapist may work with you on:

- Bathing
- Dressing
- Feeding/meals
- Managing household chores

The occupational therapist may help you to relearn daily activities by:

- Increasing the use (strength and coordination) of the affected side
- Evaluating if adaptive equipment would be helpful
- Teaching you how to do daily activities
- Teaching you how to adapt to any visual loss

Physical Therapy

A physical therapist will help you to improve movement and increase independence in positioning yourself in bed, wheelchair mobility, transfers, walking, and exercise.

- Helping you practice basic tasks and progressing to more complex tasks
- Using exercises to increase muscle strength and coordination
- Having you do activities to help with positioning and balance
- Helping you get needed equipment such as a cane, walker, or wheelchair



Speech Therapy

A speech therapist (speech-language pathologist) will help in the recovery of speech and language or thinking (cognitive) skills that may have been lost as a result of a stroke. They will work with you to improve any problems you may have with swallowing, speaking, listening, reading, or cognitive skills.

A speech therapist begins by checking your speaking and thinking skills. The speech therapist designs a treatment program using

the findings. Family members are also taught how to help in the recovery process.

Areas that speech therapists address include:

- **Language** — Understanding and using spoken and written language. The four parts of language are:
 - Listening and understanding
 - Speaking
 - Reading
 - Writing
- **Oral-Motor Skills** — Strength and control of muscles used for speaking and eating.
- **Voice** — Maintaining normal pitch, volume, breath control, and vocal quality for speaking.
- **Swallowing** — Controlling lip and tongue movements for swallowing. Diet changes for a safer swallow may be needed.
- **Cognition** — Thinking skills, including attention, memory, problem solving, and reasoning. These skills are needed in order to live independently.

Rehabilitation Team Members

There are many members of the healthcare team who will be working with you during your recovery. They will provide care, evaluate your progress, and communicate with each other and with you and your family.

In addition to the physical therapists, speech therapists, and occupational therapists described above, your healthcare team will include a team of specially trained doctors, nurses, and other clinicians who will work with you to meet your healthcare needs. These may include respiratory therapists, dietitians, discharge planners, and nurse case managers. The following team members will also play a big role in your recovery:

Stroke Coordinator

The stroke coordinator is a nurse who can provide information to help you understand what causes a stroke and help you reduce your risk factors. He or she can answer your questions about medications, the recovery process, and tests and treatments. The stroke coordinator meets with your doctor on your behalf, asks questions for you, and voices your concerns. They can explain your discharge instructions and help you choose the correct level of care and type of rehab you need.

Rehab Nurse

If you are transferred to an inpatient rehab unit, you may also see a rehab nurse. The rehab nurse focuses on your physical needs and care. He or she also works with other team members to coordinate your rehab program.

Recreational Therapist

The recreational therapist uses recreation and leisure to help you make life more enjoyable as you recover.

Social Worker

The social worker works with you and your support system on planning for discharge and making any needed arrangements.

Neuropsychologist

The neuropsychologist assesses behavior and thinking ability and offers guidance to the team in making treatment goals. He or she may also provide general counseling to assist with your adjustment during rehab.

Depression

Depression is a very common, treatable medical illness that involves the body, mood, and thoughts.

Depression is caused in part by changes in brain chemicals such as serotonin and norepinephrine. Depression can be triggered by a major health change, and is common after a stroke. When the brain is injured, there can be changes to emotions. In addition, adjusting to changes after a stroke can cause stress and sadness. Untreated depression can make it hard to cope and can interfere with recovery.

Symptoms of Depression

Symptoms vary, but people with depression experience some of these symptoms most of the time for at least two weeks:

- Feeling sad, blue, or down
- Losing interest in activities normally enjoyed
- Feeling slowed down or restless

- Difficulty sleeping or sleeping too much
- Feeling tired all the time or lacking energy
- Increases or decreases in appetite or weight
- Difficulty concentrating or remembering
- Feeling hopeless, guilty, worthless, or helpless
- Having thoughts of death or suicide
- Headaches, digestive problems, or chronic pain that does not respond to treatment

Getting the Treatment You Need

Treating depression is important. Depression affects thoughts, feelings, physical health, and behavior. If you have other illnesses along with depression, these can be more difficult to manage and recovery can be slowed if depression is not treated. Since recovering from a stroke can be lengthy and challenging, it is especially important to seek treatment if depression occurs.

The first step to getting treatment is to discuss your symptoms with your doctor. Your doctor can make an evaluation and help you find effective treatment. Treatment options include antidepressant medication, counseling, or both.

You can help manage your symptoms as treatment begins to take effect by:

- Being with other people and talking with someone. Reach out to a family member, friend, or co-worker.
- Increasing activity or exercise. This can also help relieve stress.
- Expecting your mood to improve gradually, not right away. Feeling better takes time.
- Letting your family and friends help you.

Family and Friends Can Help

Many people with depression do not have the motivation or energy to seek treatment. Depression may cause confusion and withdrawal. Helping someone with depression get treatment is important.

- Offer to go to the doctor with the person to ask questions and note instructions.
- Invite the person for walks, on outings, to the movies, and to other activities, but do not be discouraged if your invitation is refused. Continue asking, but do not push.
- Provide emotional support through conversations and careful listening. Do not minimize expressed feelings, but do point out realities and offer hope.
- Offer reassurance that with time and help he or she will feel better.
- Don't ignore suicidal thoughts, words, or actions. Seek professional help right away at a hospital emergency department.
- Remember, depression is a treatable illness. It can be treated in addition to other illnesses a person has. If you think you or your loved one may have depression, talk to your doctor today.

Planning Your Discharge

You will have multiple discharge options once you are ready to leave the hospital. Choosing the best option will depend on factors such as how severe your stroke was, how well you are able to do your normal activities, and your living arrangement prior to your stroke.

Many people need rehabilitation (rehab) after a stroke. Rehab programs help stroke survivors gain strength and relearn skills that are lost when the brain was injured. The goal of rehab is to help survivors become as independent as possible and to improve their quality of life.

The length and type of rehab required will depend on individual needs and goals. More than one rehab setting may be necessary. Insurance coverage will vary and may be a factor in your decision. Your healthcare team will offer guidance and work with you to decide the best treatment plan.

Rehabilitation Options Include:

Inpatient Therapy

- Located in a hospital or a stand-alone facility
- Nursing care is provided
- Daily visits by a doctor specializing in physical medicine and rehab
- 3 or more hours per day of core therapies (physical, occupational and/or speech therapy), 5 days per week
- Length of stay is usually shorter than a skilled nursing facility

Skilled Nursing Facility

- Stand-alone facility (also known as a rehabilitation center or nursing home)
- An advanced practice health care provider visits 1 to 2 times a week; a physician visits at least once a month
- 1 to 3 hours per day of core therapies (physical, occupational and/or speech therapy), 5 days a week

Home

- If you have had a mild stroke with no lasting deficits or a TIA, you will be discharged to home. If you have mild deficits that persist, you may be sent home with home health therapy or outpatient therapy.

Home Health

- Rehab/nursing care is provided in your own home
- You must be homebound to qualify for home health services
- 1 to 3 visits a week per therapy (nursing, physical, occupational and/or speech)
- Visits typically last 30 to 60 minutes each session

Outpatient Therapy

- Stand-alone facility
- 1 to 3 visits a week
- Visits are usually 45 minutes to 1 hour in length for each type of therapy you are receiving
- Best for patients who are in their final stages of returning to being as independent as possible

Palliative Care

- Your doctor may consult the Palliative Care Team to assist in your care. Palliative care is specialized medical care for people with serious illnesses. It is appropriate at any age and at any stage in a serious illness, and can be provided together with curative treatment.

Palliative care is provided by a team of doctors and nurses who will work with your doctor to provide an extra layer of support. The team will focus on providing you with relief from the symptoms, pain, and stress of your illness. The goal is to improve quality of life for you and your family.

Recovery from a stroke is a team effort. You, your loved ones, and the healthcare team will work together to provide support and help you meet your goals for recovery.

Fall Safety in the Home

After a stroke, you are at a higher risk of falling. Your therapists will work with you on improving your movement and independence. Home safety is an important part of preventing falls. This checklist will help you find and fix any hazards in your home.

Floors

- Make sure there is a clear path through each room. Ask someone to move furniture so your path is clear.
- Remove throw rugs or use double-sided tape or non-slip backing so rugs won't slip.
- Pick up things that are on the floor. Always keep papers, magazines, books, blankets, towels, and other objects off the floor.

- Coil or tape cords and wires next to the wall so you do not trip over them. Have an electrician put in extra outlets if needed.

Stairs

- Pick up things on the stairs. Always keep papers, shoes, books or other objects off the stairs.
- Fix any loose or uneven steps.
- Have a handyman or electrician put an overhead light and switch at the top and bottom of the stairs. It is helpful to get light switches that glow.
- Repair loose or broken handrails. There should be handrails on both sides of the stairway. They should be as long as the stairs.
- Repair any carpet on the steps that is loose or torn. If carpet is not firmly attached to every step, remove carpet and attach non-slip rubber treads on stairs.
- Use reflective tape at the top and bottom of the stairs so you can see them better.

Kitchen

- Move items that you use often to lower shelves (about waist high).
- Buy a steady step stool with a bar to hold onto. Never use a chair as a step stool.

Bedrooms

- Place a lamp close to your bed where it is easy to reach.
- Use a night-light so you can see where you're walking. Some night-lights can be placed on a timer.

Bathrooms

- Put a non-slip rubber mat or self-stick strips on the floor of the tub or shower.
- Have a grab bar installed inside the tub and next to the toilet.

Other Injury Prevention Tips

- Exercise regularly. Focus on increasing leg strength and improving balance.
- Ask your doctor or pharmacist to review a list of your medications (both prescription and over-the-counter) to check for side effects and interactions that may cause dizziness or drowsiness.
- Have your vision checked at least once a year. Poor vision can increase your risk of falling.
- Get up slowly from a sitting or lying position.
- Wear sturdy shoes with non-slip soles. Avoid slippers and running shoes with thick soles.
- Improve the lighting in your home. Use brighter bulbs (at least 60 watts). Use lamps or frosted bulbs to reduce glare. Have a friend or family member replace any burned-out light bulbs.
- Paint doorsills a different color to prevent tripping.
- Keep emergency numbers in large print near each phone.
- Put a phone near the floor in case you fall and can't get up.
- Think about wearing an alarm device that will bring help in case you fall and can't get up.
- Be careful around your pets. Be sure they are out of your way when you are walking.

Taking Medications Safely

Follow these guidelines when taking medications:

General Guidelines

- Take your medication as prescribed. Do not change the dose or stop taking any medication without your doctor's instruction.
- Do not take less of a medication or skip doses. If you have trouble affording your medications, talk to your doctor or pharmacist.
- Keep a list of your current medications with you. Include the name of the healthcare provider that prescribed the medication and the reason you are taking it. Show this list to your healthcare providers. Be sure to include:
 - Prescription medications (injectables, pills, inhalers, patches or creams)
 - Over-the-counter medications (pills, creams, lotions, or eye drops)
 - Vitamins, supplements, or herbal remedies (including teas)
 - Weight gain or loss products (such as pills, shakes, or bars)
 - Home remedies
- Take your medications at set times each day. If needed, use a pill box or set alarms to remember to take your medications.
- Read the information provided or ask the pharmacist if the medication should be taken with food or between meals.
- Make sure your doctors and pharmacy have an updated list of your allergies.

- Keep appointments for lab work and check-ups. These may be needed to check how well the medication is working or adjust dosing.
- If you are traveling, be sure to have your list of medications and a list of your doctors and pharmacy. When flying, carry your medicines with you — do not put them in your checked luggage. Take enough medication with you in case you need to stay longer than expected.
- Talk to your doctor or pharmacist if you have problems with your medications, such as trouble swallowing pills or if you can't read the label.
- Check with your doctor before taking over-the-counter medications, vitamins, supplements, or herbal remedies.

Starting a New Medication

- Make sure you understand what the medication is treating and why it is being prescribed to you.
- Read the instructions carefully before you begin taking a new medication. Make sure you understand the directions and any special instructions. Talk to your doctor or pharmacist if you have any questions.
- You may want to check if the medication is covered by your insurance or if a generic medication can be used.
- It is best to use the same pharmacy when filling your prescriptions. When you have the prescription filled, tell the pharmacist about any other medications or products that you are taking. This helps prevent interactions between medications.
- Ask your pharmacy about automatic refills or reminders to avoid running out of your medication.

Storing Your Medications

- Keep all medications in their containers unless you are using a pillbox to organize your medications.
- Store medications in a cool, dry place. The medicine cabinet in the bathroom is not usually the best place. Some medications need to be kept refrigerated. Read label instructions.
- Keep medication bottles tightly capped and out of the reach of children.
- Discard unused or expired medications by taking them to announced locations at community drug disposal days or talk to your pharmacist.
- Do not share your medications with anyone or take any medications that were prescribed for someone else.

Call Your Doctor

- If you have side effects or problems with a medication, tell your doctor. They may need to change your medication. Talk to your doctor or pharmacist if you have questions or concerns.

Resources

Caregiver Support Resources

- ▶ **Franklin County Office on Aging Caregiver Support Program**
614-525-6200
The Caregiver Support Program aids caregivers of adults age 60 and older on a short-term basis. Assistance is limited to a three-month time period per calendar year with a cost ceiling for services. The program can assist with a variety of services, including in-home respite, adult day care, caregiver counseling, institutional respite in a licensed facility, and durable medical equipment. For more information, contact Senior Options at 614-525-6200.
- ▶ **Central Ohio Area Agency on Aging**
614-645-7250 or 866-750-CARE
Free caregiver advice, education and support for those helping loved ones. If your loved one needs help at home, COAAA staff can advise on hiring, financial help, and senior housing.
- ▶ **A Place For Mom**
866-344-1802
A Place for Mom helps seniors and their families find senior care and housing based on their unique needs and budget.
- ▶ **National Family Caregiver Support Program**
866-750-2273
Provides information, services and support to family and friends caring for an older adult. Services include respite care, counseling, education and flexible assistance to address individual needs.

Out-of-County Resources

- ▶ **Delaware County — SourcePointe**
740-363-6677
- ▶ **Fayette County — Community Action Commission of Fayette County**
740-335-1831
- ▶ **Licking County — Aging Program**
740-345-0821
- ▶ **Madison County — Madison County Senior Center**
740-852-3001
- ▶ **Pickaway County — Pickaway County Senior Center**
740-474-8617
- ▶ **Union County — Senior Services**
937-644-1010

Helpful Resources

Stroke

- ▶ **American Stroke Association**
strokeassociation.org
888-4-STROKE
- ▶ **Support Network**
supportnetwork.heart.org
Online support for those who have had a stroke or heart attack or are living with a heart condition.

Mount Carmel Resources

To learn more about stroke and other health topics, visit mountcarmelhealth.com.

- ▶ **Healthy Living Center**
614-234-5932
Mount Carmel Franklinton Campus
Medical Office Building 2, Suite 1
777 S. Davis Avenue
Columbus, Ohio 43222
- ▶ **HealthCall**
614-234-LIFE (5433)
An information and referral service.
- ▶ **Mount Carmel Stroke Support Group**
614-392-3400
A group that provides speakers, education, and support for those who have had a stroke and their family members. There is no cost to attend.

If you would like to receive *Healthier You*, a catalog of the programs available at Mount Carmel, call 614-234-LIFE (614-234-5433) to request a copy.

Common Stroke Terms

Activities of daily living (ADLs): functions that are done on a daily basis, such as dressing, eating, walking, personal hygiene, and communication.

Ambulation: walking or gait.

Aneurysm: a bulging of the wall of an artery that forms a thin-walled bubble.

Anomia: the inability to name objects or persons.

Anticoagulants: medicine that prevents blood clots from forming in blood vessels.

Antiplatelets: medicine that thins the blood and keeps platelets from sticking together to help keep blood clots from forming.

Aphasia: the inability to express and/or understand speech or language.

Apraxia: A condition where the brain knows what it wants to do, but is unable to carry out the desired thought, action, movement, or speech.

Aspiration: the inhalation of food or fluids into the lungs instead of going down to the stomach.

Ataxia: inability to coordinate movements of arms and/or legs.

Atrial fibrillation (A-Fib): an irregular heartbeat that can allow blood in the heart to form a clot, break off, and travel to the brain, causing a stroke.

Carotid arteries: arteries that run up each side of the neck into the brain, which may become blocked by plaque, causing decreased blood flow to the brain and resulting in a stroke.

Carotid endarterectomy: surgery in which plaque in a blocked carotid artery is removed.

Coagulation: the process of blood clotting in the blood vessels.

Cognition: the ability to think.

Deficits: a lost skill such as talking or walking.

Depression: prolonged feeling of sadness that may be caused by brain damage from a stroke or by the response to the losses caused by the stroke.

Dizziness: sensation of lightheadedness or spinning.

Dysarthria: slurred speech due to weakness of certain muscles in the mouth, face, neck, or throat.

Dysphagia: difficulty swallowing or inability to swallow.

Embolism: a blood clot that forms outside of the brain that breaks away and travels to the brain.

Emotional lability: uncontrollable mood changes such as crying, laughter, or anger.

Gait: ambulation or walking.

Hemianopia: blindness or defective vision in one half of the field of vision.

Hemiparesis: weakness of the arm and/or leg on the same side of the body.

Hemiplegia: paralysis of the arm and/or leg on the same side of the body.

Hemorrhage: bleeding into the brain tissue caused either by leakage of blood from a blood vessel or by a ruptured aneurysm.

Hypertension: high blood pressure.

Magnetic resonance image (MRI): a test that uses radio waves and magnetic fields to take pictures of organs in the body.

Neglect: when a patient ignores or is not aware of one side of their body or surroundings.

Occupational therapist (OT): a therapist who works with patients on restoring hand and arm function, thinking skills, and activities of daily living.

Physical therapist (PT): a therapist who helps patients regain strength, coordination, balance, endurance, and walking ability.

Rehabilitation: the process of gaining function through the use of various therapies.

Speech therapist (ST): a therapist who works with patients on improving swallowing, speaking, listening, reading, or thinking skills.

Stroke: decreased blood flow to the brain that usually results in some type of damage to the nerve centers in the brain.

Sub-acute rehabilitation: program that works with people who need to gain strength and endurance but are not able to do a more intense program.

Thrombus: clot.

Transient ischemic attack (TIA): decreased blood flow to the brain, causing a “mini-stroke” usually lasting a few minutes to a few hours, but which can last up to 24 hours.



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