

Your Care After a Stroke



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Talk to your doctor or healthcare team if you have any questions about your care.

For more health information, go to **wexnermedical.osu.edu/patiented** or contact the Library for Health Information at 614-293-3707 or health-info@osu.edu.

Your Care After a Stroke

If you or a loved one has had a stroke, learning more can help lower your fear and anxiety.

This book provides basic information about stroke and stroke care. Please read and share this book with your family and friends.

Every stroke is different. Talk to your doctor and others on your care team to learn more about your specific type of stroke.

If you have any questions or if there is anything you do not understand, please let us know.

Other resources

- American Stroke
 Association
 1-888-478-7653
 stroke.org
- Family Caregiver Alliance 1-800-445-8106 caregiver.org
- Stroke Caregiver Guide go.osu.edu/pted5444
- Caregiver Wellness Guide go.osu.edu/pted3912

For a digital copy of this book, please visit <u>go.osu.edu/pted3641</u> or scan the QR code.





Your Care Team

Your care team includes all the healthcare providers who work together to manage your care, such as doctors, advanced practice providers, nurses, and others to address your needs throughout your hospital stay.

• Specialists

Neurovascular This expert provider specializes in caring for people with strokes.

Endovascular Neurosurgeon
 This expert provider specializes in surgery of the blood vessels in the brain and
 management thereafter.

Advanced Practice Providers

 Advanced Practice Nurse (APN), Certified Nurse Practitioner (CNP), or Physician's Assistant (PA)
 These providers have advanced training and focus on assessment, diagnosis, disease prevention, and care in partnership with doctors and other care team members.

Registered Nurse (RN)

The lead on your nursing team who will coordinate your care. Your RN will make sure all your nursing needs are met, including medication and healthcare education.

Patient Care Associate (PCA)

A PCA will take your vital signs, including temperature and blood pressure, draws blood for testing, and helps with meals, bathing, and bed changes.

Respiratory Therapist

The respiratory therapist will give patients breathing treatments or oxygen if needed.

• Pharmacist

The pharmacist will help select and prepare the right medicine at the right dose based on your diagnosis and personal health. A pharmacist will screen for medicine interaction, looks for the most cost-effective options, and teaches you about your medicines.

• Dietitian

A registered dietitian will complete a nutritional assessment and help you choose from a variety of foods to meet your medical needs.

Care Management Team

Care Manager

The care manager is a link between the insurance provider, equipment vendors, doctors, other team members, and you. The care manager will also work with the care team and doctors to plan your discharge and follow up care.

Social Worker

The social worker (SW) will provide support and counseling for you and your loved ones, such as dealing with:

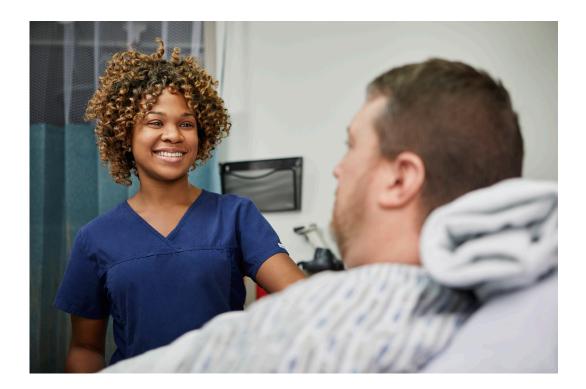
- Adjusting to life after a stroke
- Relationships with family and friends
- Financial concerns
- Education and job needs
- Selecting a nursing facility, if needed

Palliative Care

Palliative care can help you manage symptoms or pain. It may help you and those close to you better understand your stroke, talk more openly about your feelings, or decide what treatment you want or do not want. It can also help you communicate better with your doctors, nurses, family, and friends.

Stroke Coordinator

This is a nurse leader with expert stroke knowledge. The stroke coordinator helps improve stroke care in the hospital, and supports and educates patients, families, and clinicians.



Stroke Types

A stroke is a sudden loss of brain function due to a change in the blood flow to the brain. Cerebral vascular accident (CVA) is another name for a stroke. There are 2 main types of strokes: ischemic and hemorrhagic.

Ischemic stroke

Ischemic stroke is caused by a blood clot that blocks blood flow to brain tissue. This is the more common type of stroke.

When an artery that supplies blood flow to the brain is blocked, a stroke happens. The blockage may be from fatty deposits, called plaque, or from blood clots. Pieces of the plaque or clots can break loose and travel to the brain to cause a stroke.

Your care team may talk about your stroke based on whether the blockage or clot formed in your brain or moved to your brain.

- **Thrombus** is a clot that forms on the wall of a blood vessel in the brain.
- **Embolus** is a clot in a blood vessel that moves or travels through the bloodstream to the brain.

For some people who have an ischemic stroke, the cause of their stroke is not known. Strokes without a known cause are called **cryptogenic strokes**.

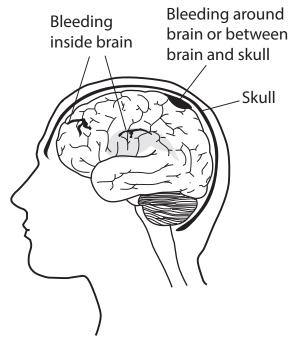
Hemorrhagic stroke

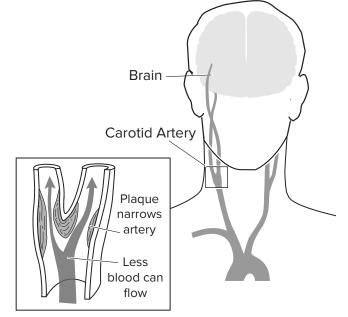
Hemorrhagic stroke is caused by a blood vessel that breaks and bleeds into the brain. This causes a loss of oxygen to brain tissue. This type of stroke is less common, but it can cause serious injury or death.

- Intracerebral hemorrhage (ICH) is bleeding inside the brain.
- **Subarachnoid hemorrhage (SAH)** is bleeding around the brain or into the space between the brain and the skull.

The main causes of hemorrhagic stroke are:

- High blood pressure, also called hypertension.
- Ruptured aneurysm a bulging or weak spot in an artery wall in the brain that bleeds.
- Smoking, alcohol, or drug abuse.





Transient ischemic attack (TIA)

A transient ischemic attack, or TIA, is a brief stop of blood flow to the brain that can cause signs of a stroke. Sometimes called a mini stroke, it can last a few seconds up to 24 hours.

Unlike an actual stroke, a TIA does not kill brain cells, so there is no lasting damage to the brain. When the blood flow returns, the symptoms go away.

A TIA usually does not cause any lasting problems, but it is a serious warning sign of a possible stroke in the future. Nearly 1 in 5 people who have a TIA will have a stroke within 90 days, with almost half occurring within 2 days of the TIA.

Stroke symptoms, even if they disappear within an hour, need emergency assessment. Learn more about stroke symptoms on page 12.

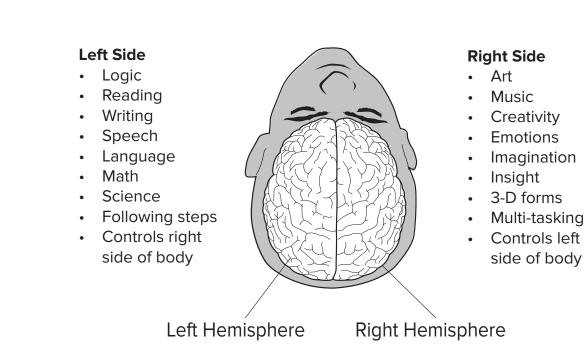
In what part of the brain was the stroke?

Right Side: A right sided stroke happens when the blood supply to the right side of the brain is stopped. The right side of the brain is in charge of the left side of the body, so it usually causes weakness or paralysis on the left side. It also can cause changes to vision, thought processing, knowing the body's position, and judging space and distance.

Left Sided: A left sided stroke happens when blood supply to the left side of the brain is stopped. Because the left side of the brain is in charge of the right side of the body, it can cause weakness or paralysis, or loss of feeling on the right side. It can also cause problems with speech, understanding language, and vision.

Cerebellar Stroke: A cerebellar stroke happens in the cerebellum, which is the lower part of the back of the brain. The cerebellum coordinates body movement, controls eye movement, and adjusts posture to stay upright. Based on where the blockage occurs, the effects will vary with this type of stroke.

Main functions of brain hemispheres



Effects of a stroke

Common effects from a stroke are listed below based on where it occurred. Your care team can help you select which apply to you.

Affecting

right side

of body

Left Sided Stroke:

- □ Loss of movement on right side
- Problems with talking and understanding
- □ Slow and cautious behavior
- □ Lack of attention to right side of body
- Problems with swallowing
- Problems with remembering how to do daily tasks
- Vision problems

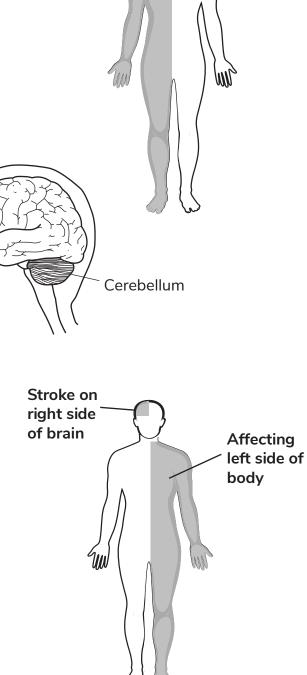
Cerebellar Stroke:

- Coordination and balance deficits
- Eye movement deficits
- Abnormal head and torso reflexes
- Dysarthria: weakness in speech muscles
- □ Ataxia: lack of voluntary coordination
- Dizziness, vomiting, nausea, or headache

Right Sided Stroke:

- Loss of movement on left side
- Problems with memory
- Quick and impulsive behavior
- □ Lack of attention to left side of body
- Problems understanding
- Short attention span
- Problems with language
- Problems with swallowing
- Problems with remembering how to do daily tasks
- Vision problems

Other problems:



Stroke on

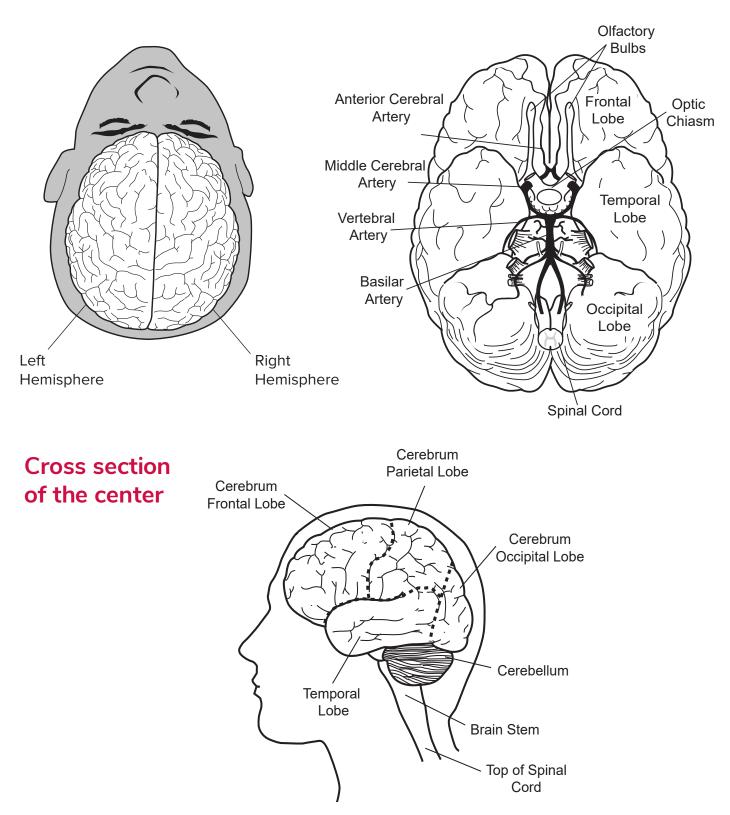
left side of

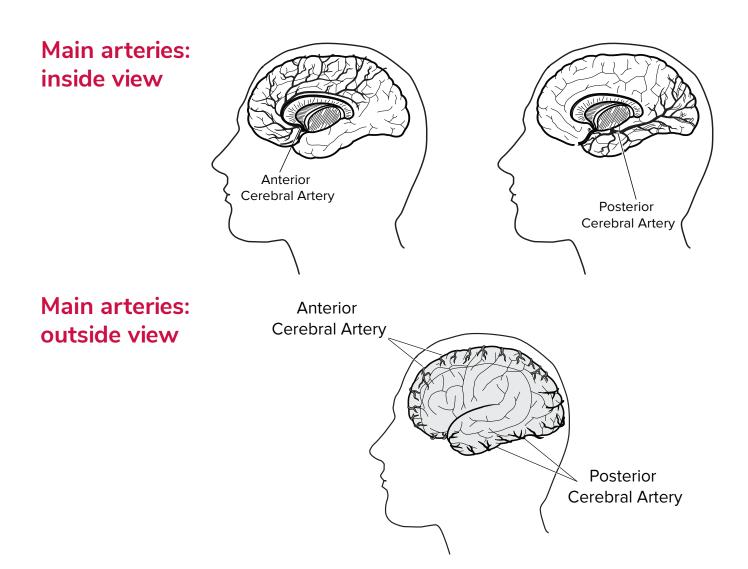
brain

Parts of the Brain

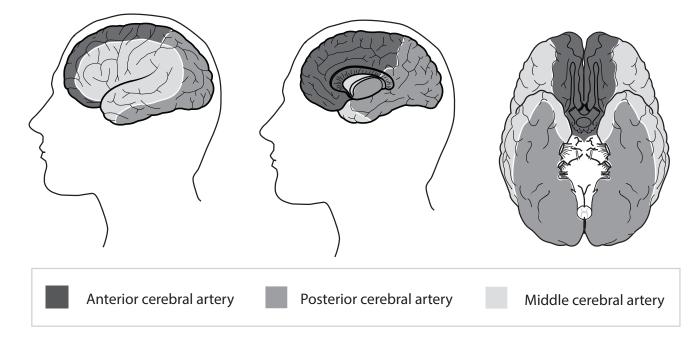
Top view

Bottom view





Areas of brain supplied by the main cerebral arteries



Your Stroke Risk Factors

A person who has had a stroke has a higher risk of having a second stroke. Work with your care team to manage the health problems that put you at risk for another stroke, called risk factors, so you can reduce your risk. There are some risk factors that you cannot change, such as your age, sex, race, family history, and your own history of a stroke, TIA, or heart attack. Other risk factors you can change or control to prevent a stroke.

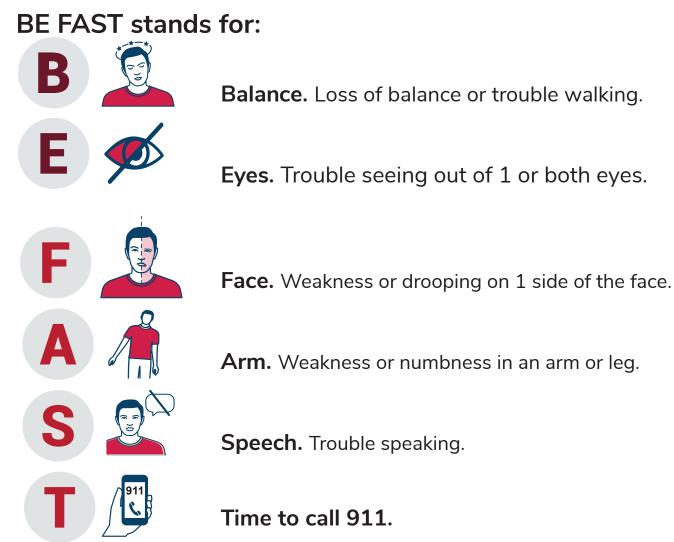
Know what your risk factors are

Your health problems that are **risk factors for another stroke** are checked:

- High blood pressure
 - A healthy range is less than 120/80 mm Hg.
- Diabetes
 - Your hemoglobin A1C (HbA1C) value is _____. Your goal is 4.0 to 6.0.
- High bad cholesterol
 - Your low-density cholesterol (LDL) called bad cholesterol is _____. The goal is less than 70 for someone who has had a stroke.
- Atrial fibrillation
 - This is an irregular heartbeat that can cause blood to pool in parts of your heart, which can cause clots, leading to a stroke. You may be discharged with a heart monitor to evaluate whether you have this rhythm or not.
- Blood thinning medicines and dietary supplements need to be managed
 - Talk to your doctor about any dietary supplements you are taking, including fish oil and garlic. Both can have a blood thinning effect if taken in large amounts
- □ Tobacco use, including vaping and e-cigarettes
- Alcohol use
- Drug abuse or recreational drug use
- Being overweight
- Being inactive
- Diet high in saturated fats, trans fat, cholesterol, and salt
- Obstructive sleep apnea (OSA)
- Circulation problems, such as carotid stenosis, coronary artery disease, and peripheral vascular disease
- Blood clotting disorders, called hypercoagulable states. Examples include hemophilia, Factor V Leiden, or cancer
- Sickle cell anemia
- Heart disease such as coronary heart disease or heart failure
- Other: _____

Stroke Is an Emergency: BE FAST

BE FAST is a simple way to remember the main symptoms of stroke. These symptoms happen suddenly. Learning what to look for helps you know when to call for medical help.



Also call 911 if you have other stroke symptoms:

- Sudden confusion.
- Sudden trouble understanding simple statements.
- Fainting.
- A seizure.

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• A sudden, severe headache.

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BE FAST Video

<u>go.osu.edu/hw_abs0968</u> or scan the QR code.



Medicines After a Stroke

Important information about your medicine

There are many medicines to treat stroke, and conditions that may increase your risk for stroke. Ask your doctor, nurse, or pharmacist if you have questions about your medicines.

- Take your medicines as directed.
- Do NOT stop taking your medicines because you feel better or because you are out of refills. Check with your doctor before you stop taking any medicine. Many medicines will need to be taken for a long time. Follow up with your primary care doctor for refills.
- Tell your doctor or nurse if you are taking any over the counter medicines or herbal supplements. They may interact with medicines.
- Talk with your doctor or nurse if you have side effects from your medicines. Side effects are an unwanted effect of a drug.

Anti-Platelets

These medicines prevent platelets in the blood from clumping or clotting. They are often used after a heart attack or stroke, or after stent procedures to prevent platelets from blocking the stent.

Do not stop taking this medicine without talking to the doctor who ordered it. Stopping your anti-platelet medicine puts you at risk for forming clots or for the stent to get blocked.

Medicine side effects may include:

allergic reaction, black, bloody or tarry stools, nausea, vomiting, abdominal pain, skin bruising, dizziness, confusion, hallucinations, loss of hearing, or ringing in the ears.

Anti-platelet medicine names include:

- aspirin (Bayer, Bufferin, Ecotrin, St. Joseph or other generic brands)
- clopidogrel (Plavix)
- Licagrelor (Brilinta)
- Other _____

Statins (HMG-CoA Reductase Inhibitors)

Statins block the production of cholesterol in the liver. This lowers total cholesterol and bad LDL cholesterol levels, but raises good HDL cholesterol levels. High levels of bad cholesterol increase the risk of heart disease and stroke. Your cholesterol levels should be checked with blood tests 1 to 2 times a year.

Medicine side effects may include: muscle weakness or pain, elevated liver enzymes, and upset stomach.

Your doctor will check your liver function before starting a statin. You should have liver function testing done if you have signs of liver problems while taking a statin. This includes feeling very weak or tired, loss of appetite, upper belly pain, dark urine, or yellowing of your skin or eyes.

Statin medicine names include:

- □ atorvastatin (Lipitor)
- Iovastatin (Mevacor)
- pravastatin (Pravachol)
- rosuvastatin (Crestor)
- □ simvastatin (Zocor)
- Other _____

Angiotensin-Converting Enzyme (ACE) Inhibitors

ACE inhibitors widen the blood vessels and help increase blood flow by blocking the production of a hormone in your body that tightens blood vessels. They help lower blood pressure, lessen the amount of work the heart needs to do, and protect the kidneys. These medicines are used to treat high blood pressure and heart failure and may be used after heart attack or stroke.

Medicine side effects may include: dizziness, weakness, cough, and decreased ability to taste. If you have swelling throughout face, tongue, or lips, stop taking the medicine right away and call your doctor.

ACE inhibitor medicine names include:

- enalapril (Vasotec)
- □ lisinopril (Prinivil, Zestril)
- □ benazepril (Lotensin)
- captopril (Capoten)
- □ ramipril (Altace)
- Other _____

Angiotensin II Receptor Blockers (ARB)

ARBs widen the blood vessels and help increase blood flow when a person cannot take an ACE inhibitor. They work like ACE inhibitors by blocking a hormone in your body. These medicines are used to treat high blood pressure and heart failure, and may be used after heart attack or stroke.

Medicine side effects may include: dizziness and weakness. If you take this medicine and have swelling throughout the face, tongue, or lips, stop taking the medicine right away and call your doctor.

ARB medicine names include:

- candesartan (Atacand)
- Iosartan (Cozaar)
- valsartan (Diovan)
- Other _____

Beta Blockers

Beta blockers improve the heart's ability to relax and block the effect of other hormones in the body (adrenaline/norepinephrine). They slow the heart rate and help control blood pressure. These medicines are used to treat high blood pressure, heart failure and angina (chest pain), and may be used after heart attack or stroke.

Side effects may include: dizziness, slow heart rate, fatigue, shortness of breath when first starting medicine, and sexual dysfunction.

Beta blocker medicine names include:

- □ metoprolol (Toprol-XL, Lopressor)
- □ carvedilol (Coreg)
- atenolol (Tenormin)
- propranolol (Inderal)
- bisoprolol
- Other _____

Calcium Channel Blockers

This type of medicine lowers blood pressure by either slowing the heart rate or widening the blood vessels, which lowers blood pressure and lessens the amount of work the heart needs to do. These medicines are used to treat high blood pressure and angina (chest pain), and to slow heart rate.

Medicine side effects may include: dizziness, lightheadedness, shortness of breath, slow heart rate, and constipation.

Medicine names include:

- □ amlodipine (Norvasc)
- □ diltiazem (Cardizem, Dilacor, Tiazac)
- □ verapamil (Calan, Isoptin, Covera)
- □ Other: _____

Anticoagulants

This type of blood thinner increases the time it takes for blood to clot and makes it harder for a blood clot to form.

Medicine side effects may include: bleeding, diarrhea or constipation, bruising, dizziness, headaches, indigestion, and rashes. If you have severe bleeding, call 911 and get medical attention right away.

Anticoagulant medicine names include:

- apixaban (Eliquis)
- □ warfarin (Coumadin or Jantoven)
- enoxaparin (Lovenox)
- heparin
- dabigatran (Pradaxa)
- rivaroxaban (Xarelto)
- □ fondaparinux (Arixtra)
- □ dalteparin (Fragmin)
- □ Other_____

Nimodipine

For aneurysmal subarachnoid hemorrhage

This medicine helps reduce brain damage caused by bleeding in the brain from a burst blood vessel. This medicine is from a group of medicines called calcium channel blockers. This medicine is often given for 21 days after a subarachnoid hemorrhage.

Medicine side effects may include: dizziness, fast, pounding, or uneven heart rate, fatigue or weakness, diarrhea, nausea, or headache.

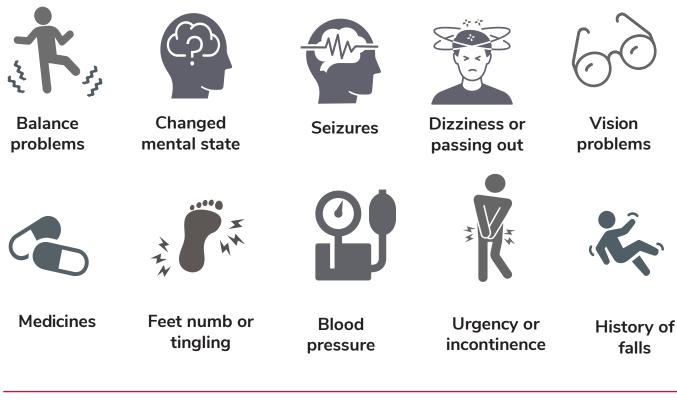
This medicine is sold by the brand names Nimotop and Nymalize.

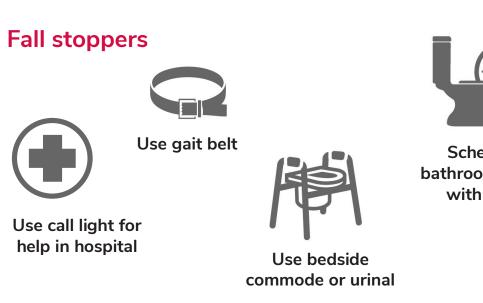
Are You at Risk for Falls?

After a stroke, you are at higher risk for having a fall. This may be due to changes in balance, medicines you are taking, or other factors.

Know what your risks are and how to stop a fall from happening.

Fall risk factors







Schedule bathroom times with help



Wear shoes or socks with tread

Discharge Planning

Your therapy team will collaborate with you and your family on what is the best discharge placement for you based on your abilities.

The goal is to get you home with less support needed. The goal is to get you home with less support, which may take time. Some patients start out at a setting that offers a higher level of help, and they progress through these levels of care to become more independent.

Long-Term Acute Care Hospital (LTACH)

Referrals to this level of care are based on how complex the patient's medical needs are and the medical equipment needed.

Skilled Nursing Facility (SNF)

This care is for patients who need a higher level of medical care/skilled nursing and therapy for their condition (24-hour nursing care). Patients receive physical, occupational, and speech therapy based on their needs.

Inpatient Rehabilitation (IPR)

This care is for patients who need intensive rehab early in their recovery journey. This includes 3 hours of therapy each day including occupational, physical, and speech. Patients are monitored closely by their medical and therapy teams.

Home with Home Health Care (HHC)

When going home from the hospital, this care is geared toward patients who are more independent and need less care than IPR or SNF. A wide range of healthcare services can be offered at home for their care needs. For patients who are not able to travel, therapy can come to their home.

Home with Outpatient Therapy

When going home from the hospital, this care is geared for patients who are more independent. It can help them reach their greatest level of recovery by building their independence at home, work, school, and community, and with driving.

Home with No Services

Going home from the hospital, this care is geared toward patients who are able to do things they were able to do before the stoke, with no problem areas to work on.



Preventing Another Stroke

Everyone has some stroke risk. There are lifestyle and health problems that you can change or control to prevent stroke. Follow these guidelines from the National Stroke Association to help control your risk.

Know your blood pressure

Treating high blood pressure is likely the most important step in preventing another stoke. If your blood pressure is high, work with your doctor to control it.

- Have your blood pressure checked or learn to check it yourself. Do this as often as your doctor recommends for you. It is a good idea to keep a log of these recordings.
- See your doctor if the top number (systolic blood pressure) is often over 120 or if the bottom number (diastolic blood pressure) is often over 80.



Lower your bad cholesterol

- If your bad cholesterol (LDL) level is over 70, work with your doctor to control it.
- High cholesterol can increase stroke risk by putting you at greater risk of heart disease.
- High cholesterol can often be controlled with diet and exercise, but some people may need to take medicine, called **statins**. These medicines block the making of cholesterol in the liver to lower LDL cholesterol levels.



Eat less fat in your diet

- Limit the saturated and trans fats in your diet.
- Saturated fats come from high fat animal products, such as fatty meat and high fat dairy products.
- Trans fats are partially hydrogenated oils and are found in cookies, crackers, commercially baked goods and many deep-fried foods.
- Use healthier fats from vegetable sources such as olives, nuts, soybeans, corn, and safflower.
- Talk to a registered dietitian (RD) for help in changing your diet and eating habits to lower your fat intake.

Keep your blood sugar in a healthy range

- If you have diabetes, you are at higher risk for stroke. High blood sugar (glucose) can damage the body's blood vessels and more than double your risk of stroke.
- Talk to your doctor, diabetes educator, nurse, or dietitian to learn how to keep your blood sugar in a healthy range.

Find out if you have atrial fibrillation (AF)

Atrial fibrillation can cause blood to collect in the chambers of your heart, which can form clots and cause a stroke. Having AF puts you at 4 to 5 times the risk of stroke than someone without AF.

Your doctor may be able to detect if you have AF or arrange testing, such as a heart monitor for 30 days or an implantable device. If you do have AF, work with your doctor to manage it. Medicine may be recommended.

No tobacco use

Smoking doubles the risk for stroke. If you stop smoking today, your risk for stroke will begin to decrease. Any tobacco use can increase your risk. This includes vaping, e-cigarettes, and being around secondhand smoke.

Limit drinking alcohol

- If you don't drink, don't start.
- Drinking should be limited to no more than 2 drinks a day for people with male anatomy or 1 drink a day for people with female anatomy (if there is no other medical reason you should avoid alcohol).
- Alcohol is a drug, and it can interact with other drugs you are taking.
- Alcohol is harmful if taken in large doses.
- A serving size for 1 drink is equal to 12 ounces of beer, 5 ounces of wine, or 1½ ounces of distilled spirits (vodka, rum, gin, or whiskey).

Eat a healthier diet

By cutting down on salt, also called sodium, and fat in your diet, you may be able to lower your blood pressure and your risk of stroke. Eating a Mediterranean-style diet, which is rich in fruits and vegetables, lean meats, and nuts, may help reduce the risk of stroke. It can also improve the health of your heart.

Learn more about healthy diet basics on page 21.

Move often

Regular physical activity reduces your stroke risk and helps with recovery. When your healthcare provider says you are ready, aim to do at least 10 minutes of moderate intensity aerobic activity 4 times a week, or 20 minutes of vigorous intensity aerobic activity twice a week.

If you have limits for what you can safely do, a supervised exercise program can benefit you.





Take medicines as directed

Do not stop taking your medicines because you feel better or because you have no more refills. Check with your doctor before you stop any medicine. Many medicines will need to be taken long term.

You may also need to take a blood thinner medicine, called an anticoagulant. Ask your doctor or nurse for information about the medicine.

- Take your medicine for as long as it is ordered.
- Have your blood checked if directed to do so by your doctor.
- Report any unusual bleeding or bruising to your doctor right away.

Talk to your doctor about any dietary supplements you are taking, including fish oil and garlic. Both can have a blood thinning effect if taken in large amounts.

Ask if you have circulation problems

- If you have circulations problems, work with your doctor to control them.
- Fatty deposits can block the arteries that carry blood from your heart to your brain. This kind of blockage can cause a stroke.
- Sickle cell disease, severe anemia, or other diseases can cause stroke if left untreated.



Sleep apnea

Sleep apnea affects about up to 40% of people who have had a stroke. A person with sleep apnea may have pauses in breathing between 5 to 30 times every hour during sleep, and possibly more. This prevents restful sleep and is a risk factor for another stroke.

Diagnosing and treating sleep apnea reduces your risk and may help improve your recovery.

If you have any questions about your stroke risk, please ask your doctor or nurse.



Healthy Diet Basics

For good health, eat a diet that is low in fat, cholesterol, and salt. Review these guidelines to help you.

Reduce fats

Decrease total fat intake, especially saturated and trans fats.

- Saturated fats are mainly in animal foods like red meat, cheese, and full fat milk.
- Trans fats are listed on ingredient lists as "partially hydrogenated oils." Trans fats are often found in store bought baked goods, non-dairy whipped toppings, cream substitutes, some crackers and cookies, and many deep-fried foods.

Limit high cholesterol foods.

• Egg yolks, fatty meats, organ meats, butter, whole milk, and other high fat dairy products are high cholesterol foods.

Substitute monounsaturated fat or polyunsaturated fat for saturated fat in your diet.

- Monounsaturated fats include olive, peanut, and canola oils.
- Soybean, corn, and sunflower oils, and most margarines and salad dressings are examples of polyunsaturated fats.
- Fish has a higher content of polyunsaturated fat than red meat.
- Many fish are low fat. Some fish that have a higher fat content, such as salmon, are high in a kind of fat called omega 3 fatty acids. This type of fat has been shown to be very heart healthy. It is recommended to eat fish 3 times a week for this reason.
- Baking, broiling, grilling, or poaching fish is best, so you do not add large amounts of undesired fats.

Limit the total amount of fat in your diet.

- Avoid fried foods and limit fats, even healthier high fat foods, such as margarine, vegetable oils, and salad dressings.
- Although monounsaturated and polyunsaturated fats are a better choice, these fats should also be used in moderation because all sources of fat are equally high in calories.

Limit salt

Do not add salt to food at the table.

- Avoid food that has large amounts of salt or sodium added. This includes frozen dinners, cured meats and lunch meats, pickles, potato chips, sauerkraut, processed cheese foods, and most canned products such as soup, vegetables, and pasta sauces.
- Use herbs and spices to help flavor foods.

Other tips

Keep serving sizes moderate and avoid second helpings. Portion control can help you maintain or lose weight.

- Satisfy your appetite. Raw vegetables, fresh fruit, and water and other calorie free drinks can help keep you satisfied.
- Do not skip meals.
- If you have diabetes, eat to control your blood sugar levels. Limit high calorie and high carbohydrate foods.
- Be as active as you can. Lose weight, if you need to, and maintain a healthy weight.
- Read all labels to limit fats and salt.

Recommended diets

Two well-studied eating plans that meet recommendations for heart and brain health include Mediterranean-style and DASH.

Mediterranean Diet

The Mediterranean diet is a heart-healthy style of eating. It features foods eaten in Greece, Spain, and other countries that border the Mediterranean Sea. It emphasizes eating fish, fruits, vegetables, beans, high-fiber breads, whole grains, nuts, and olive oil. These foods are rich in fiber and healthy fats. The diet limits meat, cheese, and sweets.

The fats allowed in this diet are mainly unsaturated fats. These include fish oils, olive oil, and certain seed oils (such as canola, soybean, and flaxseed) and nut oils (walnuts, hazelnuts, and almonds). These types of oils may have a protective effect on the heart.



Learn more at go.osu.edu/pted3918.

DASH or Dietary Approaches to Stop Hypertension

The DASH diet focuses on eating foods that are high in calcium, potassium, and magnesium. These nutrients can lower blood pressure.

The foods that are highest in these nutrients are fruits, vegetables, low-fat dairy products, nuts, seeds, and legumes. But taking calcium, potassium, and magnesium supplements instead of eating foods that are high in those nutrients does not have the same effect. The DASH diet also includes whole grains, fish, and poultry.

Learn more at go.osu.edu/pted3966.



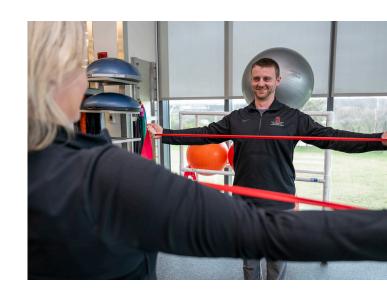
Therapy, Moving More, and Exercise

Benefits of therapy

Studies show that engaging in therapy after a stroke assists with the recovery process and regaining independence for daily life.

Starting **early** after a stroke has been proven to be safe and helps to improve recovery.

Physical, occupational, and speech therapy can educate and train caregivers to provide support and improve the quality of life for both patients and caregivers.



Therapy team

Physical Therapist

The physical therapist (PT) helps people with mobility. This may include:

- Moving in bed
- Using stairs
- Transferring into or out of a wheelchair
- Walking alone or with a walker or cane

The PT may also help improve strength, balance, coordination, and range of motion.

Occupational Therapist

The occupational therapist (OT) checks your ability to perform daily living skills. The OT helps rehabilitation with a focus on:

- Limited use of arm(s) or leg(s)
- Visual problems
- Troubles with thinking such as memory or concentration
- Being safe while grooming, dressing, and other safe care tasks
- Using special equipment such as a wheelchair, splints, or orthotics

Speech Language Pathologist (SLP)

The speech language pathologist (SLP) roles include:

- Evaluating speech, language, thinking, communication, and swallowing ability
- Creating therapy programs to address specific needs and goals
- Working on regaining abilities to speak, understand, read, and write
- Introducing tools and strategies for effective communication if speech is severely affected
- Addressing swallowing problems (dysphagia) to ensure safe eating and drinking
- Providing guidance and support to family members on how to assist with communication and swallowing at home



Benefits of being active

Some of the benefits of exercise are to:

- Improve your heart, lungs, and blood pressure
- Relieve stress and improve your mood
- Improve your body's ability to use its own insulin
- Help you sleep better and have more energy
- Lessen your risk of health problems
- May help lower lipid levels (cholesterol and triglycerides)
- Improve balance and reduce risk of falls

These are all good reasons to begin and stick with a regular exercise program.

Getting started

If you have not been exercising, **talk with a member of your healthcare team before you start exercise**. For your safety, follow any limits your doctor sets.

- Begin slowly and increase the time and intensity of your exercise over time.
- If you are new to exercising, start with 5 or 10 minutes of walking, 3 or 4 days a week. Then the second week increase to 10 minutes of walking, twice a day, 3 days a week.
- Aim for 150 minutes of moderate intensity, aerobic activity each week. You can break up this time, such as exercising for 30 minutes, 5 days a week.
- Add moderate to high intensity, muscle strengthening activity (such as resistance or weights) at least 2 days a week.

Exercise at the right pace

Do not push yourself too hard. If you are walking, you should be able to say hello to your neighbor or a person passing you on the sidewalk without feeling short of breath.

Exercise at a pace that makes your body work but does not cause you pain or exhaustion.

Stop exercising right away if you feel:

- Pain or pressure in your chest, neck, or jaw
- Tired even though you have been sleeping well
- Dizzy or light-headed
- Irregular heart beats

If any of these signs persist after stopping exercise, call your doctor or get medical help right away.

Quitting Tobacco Use

Benefits of quitting

If you quit smoking right now...

- Within 20 minutes, your heart rate and blood pressure drop.
- After 8 hours, the oxygen levels in your blood return to normal.
- Within 3 months, your circulation and lung function improve.
- Within 9 months, you will cough less and breathe easier.
- After 1 year, your risk of heart disease is cut in half.
- After 5 years, your risk of having a stroke will be the same as a nonsmoker's. Your risk of cervical cancer and stroke return to normal.
- **By 10 years**, you will have decreased your risk of developing cancer.

Resources to quit

Ohio State resources

- If you have an Ohio State primary care doctor, talk to your doctor about a referral to the office's pharmacist for smoking cessation counseling.
- Join MyChart Care Companion is an interactive, individualized care plan available through MyChart.
- You may also call 614-293-QUIT (7848) to connect with a pharmacist for oneon-one assessment, counseling, and treatment. For more information about this program, please visit go.osu.edu/ quitsmoking.
- Download the Quitting Tobacco Use booklet <u>go.osu.edu/pted3430</u>.



Quit lines

- American Cancer Society, 800-227-2345
- American Lung Association,
- 1-800-LUNGUSA (1-800-586-4872)
- **BeTobaccoFree.gov**, 877-448-7848
- Ohio Tobacco Quit Line, 1-800-QUIT-NOW (1-800-784-8669)

Websites

- American Cancer Society at <u>cancer.org/</u> <u>healthy/stay-away-from-tobacco/guide-</u> <u>quitting-smoking.html</u>
- betobaccofree.gov at betobaccofree.hhs.gov
- MedlinePlus at <u>medlineplus.gov/</u> <u>quittingsmoking.html</u>
- Ohio Partners for Smoke Free Families at <u>ohiosmokefreefamilies.org</u>
- <u>Smokefree.gov</u>

Mobile apps

Search your mobile device's app store for quit smoking apps, such as **QuitGuide** and **QuitSTART**.



Taking Your Blood Pressure

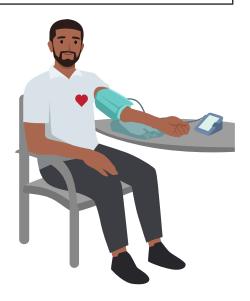
- Use the log on on page 37 and 38 to record your blood pressure and heart rate (pulse) readings at home. Note the date and time of day you take them.
- Write the blood pressure with the systolic number on the left and diastolic number on the right. For example: 120/80.
- Bring the log with you when you talk to your healthcare provider.

Blood pressure readings

Blood Pressure Category	Blood Pressure Reading			
Normal	systolic less than 120 and diastolic less than 80			
Elevated	systolic 120 to 129 and diastolic less than 80			
High — Hypertension Stage 1	systolic 130 to 139 or diastolic 80 to 89			
High — Hypertension Stage 2	systolic 140 or higher or diastolic 90 or higher			
Hypertensive Crisis: Contact your healthcare provider right away.	systolic higher than 180 and/or diastolic higher than 120			
Hypertensive Emergency: Call 911. This is a medical emergency.	Call 911 if your blood pressure is higher than 180/120 and you are having symptoms that may include:			
Do not wait to see if your blood pressures will come down on its own.	 Chest pain Shortness of breath Back pain Numbness Weakness Change in vision Trouble speaking 			

5 R's for accurate readings:

- **1. Rest** for 5 minutes before taking your blood pressure reading.
- **2. Refrain** (avoid) talking while resting and while taking your blood pressure reading.
- 3. Remove any upper arm clothing.
- 4. Rest your arm on a supported surface with the cuff at heart level.
- 5. Rest your feet flat on the floor while you are sitting for the blood pressure reading.



Emotional Changes After Stroke

After a stroke, many people feel different without knowing why. For example, some people find it hard to control their emotions. They may cry or laugh for no reason or feel down or even hopeless.

As changes happen, they can be upsetting and confusing to you and your loved ones. These may get better as your brain heals.

Let your loved ones know what is happening. With time and support from the people around you, you can learn ways to adjust to life after a stroke.



How can a stroke affect your emotions?

After a stroke, some people feel like they have lost control of their emotions. These feelings can come from one or both of these two causes:

- A stroke can affect parts of the brain that control how you feel.
- A stroke can leave you with upsetting body changes that take away some independence.

For example, some people may feel:

- Sad or angry about the loss of the lifestyle they had before.
- Isolated by speech and language problems.
- Frustrated by the slow pace of recovery.
- Worried about the future.

These feelings are normal and expected. These strong feelings are more likely to happen if you need to stay in bed for long periods of time. This is more likely to be a problem at night. It may help to have a radio playing softly in the bedroom or a dim light beside the bed.

How can friends and family help?

Your loved ones can help you by following these tips:

- A person who has had a stroke may tend to have strong emotional reactions. Remember that these are a result of the stroke. Try not to become too upset by them.
- Do not avoid a loved one who has had a stroke. Contact with and family members is very important to recovery.
- Watch for signs of depression and urge them to talk to their doctor if they have signs.

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Follow-up care: a key part of your treatment and safety

Be sure to make and go to all appointments, even if you are feeling better. Call your doctor if you are having problems and need to be seen sooner.

Tips to help you cope

Dealing with life after a stroke involves adjustment. Learning to cope after having a stroke can be difficult. It is common to have fear, stress, sadness, and confusion. Do not try to go through it alone. Talk about your feelings with people you trust.

• Be kind to yourself.

Pay attention to your health. Get plenty of rest, exercise, and eat a balanced diet. Do not use alcohol and other substances because they can add to your problems.

• Take one day at a time.

Do the best you can to get through each day. Have a schedule and try to do one important task each day. Try to eat a healthy diet and rest.

• Learn about your abilities and care.

Understanding the changes in your abilities and how to take care of yourself can lessen stress and prevent problems. Educate others to help them to support you and to lessen their fears.

• Spend time with people you care about.

Being with family and friends can help relieve stress and anxiety. Let your loved ones know how you feel and what they can do to help you.

• Set goals and keep track of progress.

Start by listing some simple activities you want to do, like writing letters or talking to friends. Remember that goals and plans can be changed.

• Write in a journal.

Write down your feelings about your losses. Write down things you are thankful for. You can also use your journal to track your progress. The more you recover, the better you will feel.

• Do relaxation techniques.

Relaxation techniques can help you to let go of the physical and emotional stress that change causes in your life.

• Use leisure activities to find pleasure.

Your therapist will work with you to find activities you enjoy and help you learn new skills. Renew your interests and hobbies, or develop new ones.

• Connect with others who have been through it.

Your healthcare team can connect you to support groups. There are also communities of people who connect online to share experiences and support.

• Be active.

Being active can boost hormones that lower stress and create a sense of well-being. Work with your therapist on how you can be active safely.

Depression After a Stroke

Depression is a common emotional reaction to stroke. Depression can start right after a stroke, during rehabilitation, or after you go home.

Some studies suggest that people who have had a stroke are at greatest risk for depression 6 to 24 months after they leave the hospital.



Common signs

When a person is depressed, they have signs nearly every day that last at least 2 weeks. These are common signs of depression. Some of these may be due to physical changes cause by the stroke, but they are important watch for.

- Increased frustration, irritability, or grouchiness
- Loss of interest and pleasure in activities you used to enjoy
- Feeling sad, empty, or down in the dumps
- Crying more than usual
- Feeling slowed down, or restless and unable to sit still
- Feeling worthless or guilty
- Feeling pessimistic or hopeless
- Feeling anxious or worried
- Changes in appetite, or weight loss or gain
- Change in sleep patterns being unable to sleep or sleeping too much
- Problems concentrating, thinking, remembering, or making decisions
- Withdrawing from people or events they normally enjoy
- Low energy or feeling tired all the time
- Sexual problems

If you have any of these signs for more than 2 weeks or have had thoughts of suicide or of trying to harm yourself or others, **get help right away**.

Emergency helplines

If you have feelings of hurting yourself or others, get help right away. There are 24-hour hotlines that you can call any time.

- In an emergency, call 911 or go to the nearest emergency department.
- National Suicide & Crisis Lifeline, call or text 988
- Netcare Crisis Hotline, 614-276-2273
- Central Ohio Suicide Prevention, 614-221-5445

Where to get help

- In the hospital, talk with your nurse, doctor, psychologist, social worker or therapist. They can provide or recommend help for you.
- After discharge, talk to your primary care doctor or social worker.
- Make an appointment or get a referral to Ohio State's Rehabilitation Psychology at 614-293-3830. They can give you information about available mental health services.
- **Counselors** Your doctor, nurse, social worker, or hospital chaplain can provide counseling or help you find a counselor if you need one.
- **Church, temple, mosque, or other place of worship** These can be sources of fellowship and community. Many people find it helpful to talk with a spiritual leader.
- Stroke support groups: Stroke support groups are listed on page 35.
- **Mental health services** Mental health organizations and centers may provide education and information about other available services. Contact Mental Health America of Ohio at 614-221-1441, or visit <u>mhafc.org</u> for a resource directory and fact sheets.
- Community resources Local organizations can help you find things like support groups.
- United Way offers 24-hour referrals by calling 211, or visit 211.org.
- In an emergency, call 911 or go to the nearest emergency department.



Common Issues After a Stroke

Fatigue

Stroke survivors may often feel more tired or lack energy, called **post-stroke fatigue**. To help manage fatigue, you can:

- Adjust responsibilities at home and work.
- Try to balance activity with times of rest.
- Nap early in the day so it does not get in the way of your sleep at night.
- Follow a bedtime routine (such as bathing, music, and reading).
- Keep up your normal activities as much as possible.
- Plan activities when you have the most energy.
- Do the activities that are most important first, so you can stop as soon as you feel tired.
- Exercise regularly, if you are able.
- Do something you enjoy every day. Having positive events in your day helps boost energy.
- Track your activities and energy levels to know what works best for you to manage your fatigue.
- Celebrate your successes. Give yourself credit when you accomplish something. Look at your progress, not at what is left to do.

Memory

A stroke often causes memory problems. If you are having problems with memory, your care team may suggest these ideas for your caregivers:

- Set a daily routine, if possible.
- Tell them of upcoming changes in routine. Someone who has had a stroke may be very sensitive to minor changes in their daily activities.
- Give short instructions. People with memory problems can remember only small amounts of information at a time.
- Give the person only one step to do at a time. Let them finish one step before going on to the next. Talk about their progress to point out their successes.
- When teaching a skill, try to teach them in the place where that skill will be used. People with memory problems often have trouble applying what has been learned in one place to other.



Thinking

Slowed thinking is very common in the early phases after a stroke. You may find that you are able to complete your normal tasks, but that it takes much longer. Here are some tips to help:

- Do one thing at a time.
- Remove distractions and clutter.
- Make things easier for yourself by keeping a to-do list.
- Know your limits and give yourself a break.

Pain after a stroke

A stroke is not usually painful itself, but some people have pain after a stroke. This can vary widely. Symptoms of pain can occur at any point during stroke recovery. If not diagnosed and treated, pain can become chronic, meaning it continues for a long time. Be sure to tell to your care team if you are having pain.

Common types of pain after a stoke include:

- **Headaches:** After a stroke, people often get headaches that feel like tension headaches. These headaches can be moderate to severe and might not go away.
- **Central Post-Stroke Pain (CPSP):** CPSP is a long-lasting pain caused by damage to the brain's pain areas. It feels like burning, aching, or shooting pain that can last months or years.
- Shoulder Pain: Many stroke survivors have shoulder pain, especially if one side of their body is affected. This pain can make it hard to do daily activities and slow down recovery. Types include:
 - Shoulder Subluxation: The shoulder joint is partly out of place.
 - Partial Shoulder Dislocation: The shoulder joint is not fully in place.
 - Frozen Shoulder: The shoulder becomes stiff and painful, making it hard to move.
- **Spasticity:** Spasticity is when muscles become very stiff and tight, like a charley horse that doesn't go away. These are painful, stiff muscles that might twitch or spasm on their own.
- **Contracture:** Contracture happens when spasticity makes joints and muscles get stuck in a bent position. This can cause muscles, tendons, or ligaments to shorten, leading to pain and limited movement.

Falls

Falls are common after being in the hospital and this risk increases after a stroke. Many falls can be prevented. Work with your provider and loved ones to create a safety plan for if a fall does happen.

4 key things to prevent falls:

- Have your healthcare provider review your medicines. Discuss any side effects, like feeling dizzy or sleepy. Ask about taking vitamin D supplements to improve bone, muscle, and nerve health.
- Exercise to improve your balance and strength. Thai chi and yoga have been studied as helpful in preventing falls.

- Have your eyes and feet checked. Update your glasses once a year, if needed. Discuss proper footwear for both inside the home and out.
- Make your home safer. Refer to page 34 for a home safety checklist.

Fall Safety Tools

If you're concerned about falling, set up systems to ensure you can get help if you fall.

- **Emergency Response System:** If you fall or need emergency help, you push a button on a special necklace or bracelet to alert 911. There is a fee for this service, and it is usually not covered by insurance.
- **Speed Dial:** Always carry a well-charged cordless or mobile phone with you as you move throughout the house. Have close friends and family on speed dial.
- **Smart Home Device:** A small speaker that listens and responds to commands when you call its name that can quickly connect you to contacts or emergency response teams.



• **Smartwatch:** Some smartwatches can be set up to make emergency calls at the push of a button. Others can detect sudden fall-like movements and then call for help. Ask family or friends for help setting up these tools.

Resources to Stop Falls

- Make an appointment with Ohio State's Fall Prevention Clinic at 614-366-9211.
- Find statewide and national help to prevent falls. Learn more by visiting <u>cdc.gov/STEADI</u> and <u>steadyu.ohio.gov.</u>
- Reach out to the Ohio Department of Aging at 866-243-5678 to discover more programs, including health and safety classes throughout the state.
- Check with your local health department or call 800-677-1116 to find your local Area Agency on Aging to see if there is a program near you for making changes to your home (home modification program).
- Call the National Falls Prevention Resource Center 571-527-3900 or visit ncoa.org/center-for-healthy-aging/falls-resource-center.



Home Safety Checklist

Prevent Falls By Checking Your Home

Bathroom and Kitchen

Is the path from the bedroom to the bathroom well lit?	Yes	No
Are there grab bars near the toilet and in the shower/bathtub?	Yes	No
Is a shower seat used?	Yes	No
Are spills cleaned up right away?	Yes	No
Is soap buildup in the shower/bathtub removed to avoid slipping?	Yes	No
Can the soap be reached in the shower without bending or turning around too far?	Yes	No
If it is hard to stand up or sit down on the toilet, is a raised toilet seat used?	Yes	No
Are the throw rugs and floor mats secure or removed?	Yes	No
Can items used most often be reached without bending down or reaching too far?	Yes	No
Can food be prepared at the kitchen table sitting down or at waist level?	Yes	No

Bedroom, Living Area, and Outside

		1
Is there a table close to the bed with a lamp and space to keep glasses and phone?	Yes	No
Are cords pushed back against the wall?	Yes	No
Are floor coverings secure and sturdy?	Yes	No
Can the phone be answered without having to get up?	Yes	No
Can lights be turned on without walking into a dark room?	Yes	No
Is a cordless phone, cellphone, or an emergency device available at all times?	Yes	No
Is it easy to walk around furniture in the home?	Yes	No
Can the switch to turn on or off lights or ceiling fans be reached easily?	Yes	No
Are there a handrail on one side of the stairways in the home?	Yes	No
Are the steps on stairways even and safe?	Yes	No
Are there lights at the top and bottom of the stairs?	Yes	No
Is the path from the house to the garage well lit?	Yes	No
Are driveways and sidewalks free of cracks, weeds, ice, or other trip hazards?	Yes	No

Fix any "No" answers right away to decrease the risk of falling.

Stroke Support Groups

Ohio State Outpatient Rehab Stroke Support Group

Connect with others and learn about stroke topics. Group meets monthly in person or online. For information, contact Joy Omslaer at 614-293-2923 or Joy.Omslaer@osumc.edu.

NeuroNights

The NeuroNights series builds wellness skills, community, and connections for survivors and families affected by brain injury and other neurological conditions. Sessions are held on Zoom and in person. The first meeting each month will be a workshop focused on a monthly theme, and the second meeting will feature a survivor sharing their story. Visit <u>go.osu.edu/NeuroNights</u> for more information or to sign up.

• Stroke Survivors and Caregiver/Carepartner Support Group

This group is for stroke survivors and their caregivers. There is a monthly speaker and a time to connect with other survivors and caregivers to offer support and encouragement. Please call 614-788-6115 or email DempseyCenter@Ohiohealth.com.

Stroke Social Circle

A social group for those living with the effects of a stroke to meet others living with the similar challenges. Please email DempseyCenter@Ohiohealth.com.

Ohio State Aphasia Initiative

Group sessions are run by Ohio State Speech and Hearing Science students and supervised by a licensed and certified speech-language pathologist. For more information call 614-292-6251, email <u>aphasiainitiative@osu.edu</u>, or visit <u>go.osu.edu/aphasia</u>.

Mount Carmel Health System Stroke Support Group

This group is for patients, families, and the community. Learn about the process of stroke recovery with this informal support group. Call 614-392-3400 for more information.

• The Stroke Family Warmline

The Stroke Family Warmline connects stroke survivors, their families, and caregivers with an American Stroke Association team member who can provide support, helpful information, or just a listening ear. Call 1-888-4-STROKE (1-888-478-7653).

The Stroke Network

Online stroke support group at <u>strokenetwork.org</u>.

Stroke Survivors Empowering Each Other (SSEEO)

SSEEO is a non-profit organization building a community to encourage, support and guide stroke survivors and families while providing resources to help meet the challenges of stroke. Call 1-800-988-8047 or visit <u>sseeo.org</u> for additional information.

More stroke groups may be found at stroke.org.

Blood Pressure Monitors

Type of cuff

Blood pressure monitors come with a cuff that goes on your arm or a cuff that goes on your wrist. Upper arm devices that use a cuff on your arm are usually **preferred** for measuring blood pressure because they have better accuracy than wrist cuffs. In some cases, a wrist cuff may be used for people with a certain medical history that prevents them from using the upper arm. Your healthcare provider can recommend which is best for you.

Use a validated monitor

You will want to choose a monitor that is validated. If a device is validated, this means it has been tested to make sure it gives results that are accurate and reliable. Your healthcare provider can help you choose a validated device.

Examples of validated blood pressure machines using an arm cuff include:

- Omron 3 Series Upper Arm Blood Pressure Monitor Adult/large adult cuff
- Omrom 5 Series Upper Arm Blood Pressure Monitor Adult/large adult cuff
- Omron 5 Series Wireless Upper Arm Blood Pressure Monitor Adult/large adult cuff
- A & D Medical Talking+ Blood Pressure Monitor Small adult, medium, and large (sold with medium cuff, other sizes sold separately)
- A & D Medical ULTRACONNECT Wireless Blood Pressure Monitor Integrated (fits small to large adult)
- A & D Medical Advanced Manual Inflate Blood Pressure Monitor Medium/adult cuff
- Welch Allyn Home Blood Pressure Monitor, 1700 Series Extra small, standard (default size), and extra-large (up to 21.2 inches)
- Withings BPM Connect Wi-Fi Smart Blood Pressure Monitor Integrated (fits small to large adult size)

Examples of validated blood pressure machines using a wrist cuff include:

- Omron Gold Wireless Bluetooth Wrist Blood Pressure Monitor
- Omron 7 Series Wireless Wrist Blood Pressure Monitor Adult/large adult cuff

You can also see a listing of validated U.S. blood pressure devices at validatebp.org.

Blood Pressure Log

Date	Time	Blood Pressure Systolic / Diastolic	Heart Rate (Pulse)	Comments
		/		
		/		
		/		
		/		
		/		
		/		

To download more copies, go to go.osu.edu/pted893.

Blood Pressure Log

Date	Time	Blood Pressure Systolic / Diastolic	Heart Rate (Pulse)	Comments
		/		
		/		
		/		
		/		
		/		
		/		
		/		
		/		

Daily Medicine Schedule

Use this form to remind you when to take your medicines. Place this where you can see it, such as where you keep your medicines. Bring it to your doctor appointments and take it with you when you travel. In case of emergency, carry an up-to-date list of all your medicines that includes your vitamins, herbal supplements, and over-the-counter medicines.

		Time you take it				
Name of medicine	Reason for taking it	Morning	Afternoon	Evening	Bedtime	As needed

For a list you can fill out, download, and take with you, go to go.osu.edu/pted1616.



wexnermedical.osu.edu