



Stroke Education

Patient Sticker

Stroke Education Checklist

Admission Date: _____ Time: _____

Directions: The checklist will be copied and scanned into the EMR under document storage when completed. Leave a completed copy in the patient folder.

✓	Initials	Date	Education Topic
			Meet your Rehab Interdisciplinary Team
			The importance of Therapy and Inpatient Rehabilitation
			Types of Strokes
			Right Brain versus Left Brain Stroke
			Stroke Risk Factors
			Stroke Signs and Symptoms
			Stroke Prevention
			Common Medications after a Stroke
			Swallowing Problems
			Sexuality after a Stroke
			Treatment for the physical changes after a Stroke
			Vision Changes after a Stroke
			Preventing Falls
			Aphasia
			Dysarthria
			The Caregiver after a Stroke
			Bowel and Bladder Care after a Stroke
			Discharge from Inpatient Rehabilitation
			Depression
			Support of your family and caregivers
			Tips for Taking Medications
			Tips for Staying Healthy
			Call the Doctor

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The journey ahead for stroke survivors and caregivers can be challenging, but with dedication and support, anything is possible. Our Rehab team is here to inspire and guide you toward a successful recovery.

**Let's embark on this
journey together**

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Meet your Rehab Interdisciplinary Team

The journey to recovery after a stroke can be a daunting one. However, with proper rehabilitation, the possibilities for improvement are endless. The first year after a stroke is the most critical period, as the bulk of recovery typically occurs during this time. But, with consistent effort and dedication, stroke survivors can continue to make progress beyond the first year. Inpatient Rehabilitation can significantly enhance independence in areas such as self-care, mobility, communication, cognitive, and social skills.

By working with rehabilitation specialists under the guidance of a rehabilitation physician, stroke survivors can receive personalized treatment plans tailored to meet their unique needs. With the right mindset and support, the road to recovery can be a rewarding and fulfilling one.



- **Physiatrist:** A physiatrist is a doctor who practices physical medicine and rehabilitation. In the Stroke Rehabilitation program, the physiatrist is involved with the evaluation and treatment of patients who have had a stroke. At the start of treatment, they work with each patient and his or her family to identify the patient's medical needs and determine treatment goals. Based on these needs and goals, the team develops and carries out a treatment plan to help you achieve the best possible outcome.
- **Case Manager:** Your care manager will assist you and your family to find any barriers and community resources needed for after your hospital stay. He or she will become involved with your care from the beginning of your stay and work with other agencies to coordinate your care. Your case manager will also set up training with your family.
- **Rehabilitation Nursing:** Rehabilitation nursing consists of registered nurses, licensed practical nurses and certified nursing assistants who provide care 24 hours a day. They will help you become independent with activities of daily living (ADLs), manage your medicines, and ensure your safety and wound care.
- **Physical Therapist (PT):** The physical therapist will help you move, reduce pain, restore function, and prevent further disability. Your treatment plan may include helping you be mobile through gait training (walking) or using a wheelchair. You will also participate in transfer and balance training and an exercise program to help you get better.
- **Occupational Therapist (OT):** The occupational therapist will help you regain Independence with activities of daily living (ADLs). These are the things you do every day to take care of yourself -- bathing, grooming, dressing, feeding, and preparing meals. Your OT will guide you through exercises to improve your ADLs after a stroke. They may also suggest equipment, changes to your home or workspaces, and ways to be safe in your home or community. Your OT will also address upper body function, cognition (thinking skills), and visual processing.
- **Speech Language Pathologist (ST):** The speech-language pathologist (also known as a Speech Therapist) will help you improve speech, language (talking, understanding, reading, and writing), cognition (thinking skills), and swallowing skills. The Speech Therapist evaluates and treats these disorders. The ST will also train you and your family on strategies to improve these skills in your home, work, and community.
- **Rehab Therapy Techs:** The rehab therapy tech assists the therapy team, per their delegation, with your care, which may consist of strength and range of motion (ROM) exercises, balance, or endurance tasks.
- **Respiratory Therapists:** specialize in airway management, mechanical ventilation, and treatment of chronic lung problems, such as COPD.
- **Pharmacists:** They recommend appropriate medications in collaboration with physicians assess for reactions, and participate in rehab team meetings.
- **Dietitians:** teach patients about healthy eating and special diets (low salt, low fat, low calorie) as well as educate about diabetes management.

The Importance of Therapy and Inpatient Rehabilitation

Goals of Therapy

Our goal is for you to receive three hours of specialized therapy per day during the week, and if needed, we will provide continued therapy on the weekend. The therapy is spread throughout the day between occupational, physical, and speech therapy. If you do not need speech therapy, the three hours will be spread between occupational and physical therapies. Our therapists use specialized neuromuscular re-education training and technology to help you gain as much function as possible.

Weekend Therapy

Weekend therapy is provided and individualized to each patient. Many factors impact the frequency and time spent in therapy. On Friday each week, your therapist will discuss these factors with you and review your personal weekend therapy plan. On Saturday and Sunday mornings, your board will be updated with the time your therapy is scheduled. If your board is blank, this means you have no planned weekend therapy that day. If you have any questions regarding your weekend therapy plan, please ask any rehab team member.

Interdisciplinary Team Conference

All team members gather weekly to review information on your functional limitations, skills, and strengths. These meetings help the team form a plan of care and a project on how much time is needed to reach your goals. Your case manager will take the information from these meetings and communicate with you and your family/caregiver so that you feel informed and prepared for continued rehabilitation or discharge to the community.

Sample Day in Rehab

6:00 am – 7:40 am: Begin getting ready for the day. This often includes showering, grooming, and getting dressed with the help of nursing staff or as part of your occupational therapy treatment.

7:40 am – 8:30 am: Eat your breakfast and take any medication that is ordered.

7:00 am—12:20 pm: Attend Physical Therapy, Occupational Therapy, and Speech Therapy, and receive nursing treatments if necessary.

12:20 pm-1:00 pm: Lunch and take any medication that is ordered.

1:00 pm – 5:00 pm: Attend Physical Therapy, Occupational Therapy, and Speech Therapy, and receive nursing treatments if due.

5:40 pm – 6:30 pm: Dinner and take any medication that is ordered.

After 6:30 pm: It is time to rest, relax, visit with family and friends, prepare for bedtime, and take any medications or receive nursing treatments that may be due.

Important Note: Please remember that the above schedule is a sample schedule with approximate times only because we individualize a patient's day based on his or her specific needs.



Types of Strokes

It is important for you to know what kind of stroke you have had because by knowing this information, you will better understand your course of treatment and ways to prevent another stroke.

Defining Stroke

A stroke is essentially a brain “attack.” A stroke occurs when the blood supply to the brain is interrupted or when there is bleeding into the brain.

Transient Ischemic Attack (TIA)

If an artery to the brain is blocked for a short time, the patient will have symptoms of a stroke for a few minutes but may not have lasting symptoms or damage to the brain. For example, if someone’s speech becomes slurred, but a few minutes later, their speech has completely returned to normal, this person may have had a transient ischemic attack (temporary low blood flow attack) or TIA. A TIA is an important warning that a person may have a stroke in the future.

Acute Ischemic Stroke

Ischemic strokes occur when there is not enough blood supply in an area of the brain to support the life of the brain tissue. This type of stroke is usually the result of a complete blockage of an artery. In some cases, a drop in blood pressure and/or narrowing of arteries may reduce the blood supply to brain tissue to the point of causing permanent injury.

Cerebral Hemorrhages

A hemorrhagic or bleeding stroke occurs when an artery within the skull ruptures. Brain damage due to a bleeding stroke mainly happens because the brain is surrounded by the skull, and there is very little room for the blood to build up or for the brain to swell when it is injured. Sudden bleeding within the skull causes pressure on the brain and may cause lasting damage.

A cerebral hemorrhage can take several forms:

- Intracerebral hemorrhages. This is bleeding inside the brain. The symptoms and prognosis of an intracerebral bleed vary depending on the size and location of the bleed.
- Subarachnoid hemorrhages. This is bleeding between the brain and the membranes that cover the brain.
- Subdural hemorrhages. This is bleeding between the layers of the brain’s covering (the meninges).
- Epidural hemorrhages. This is bleeding between the skull and the covering of the brain.

Aneurysms and Subarachnoid Hemorrhages

While an ischemic stroke is caused by the blood supply to part of the brain being cut off, a hemorrhagic stroke is caused by bleeding into the brain. A subarachnoid hemorrhage is sudden bleeding between the brain and the membranes that cover it. Besides killing the brain cells where the bleeding occurs, bleeding inside the skull can quickly raise the pressure on the brain to dangerous levels.

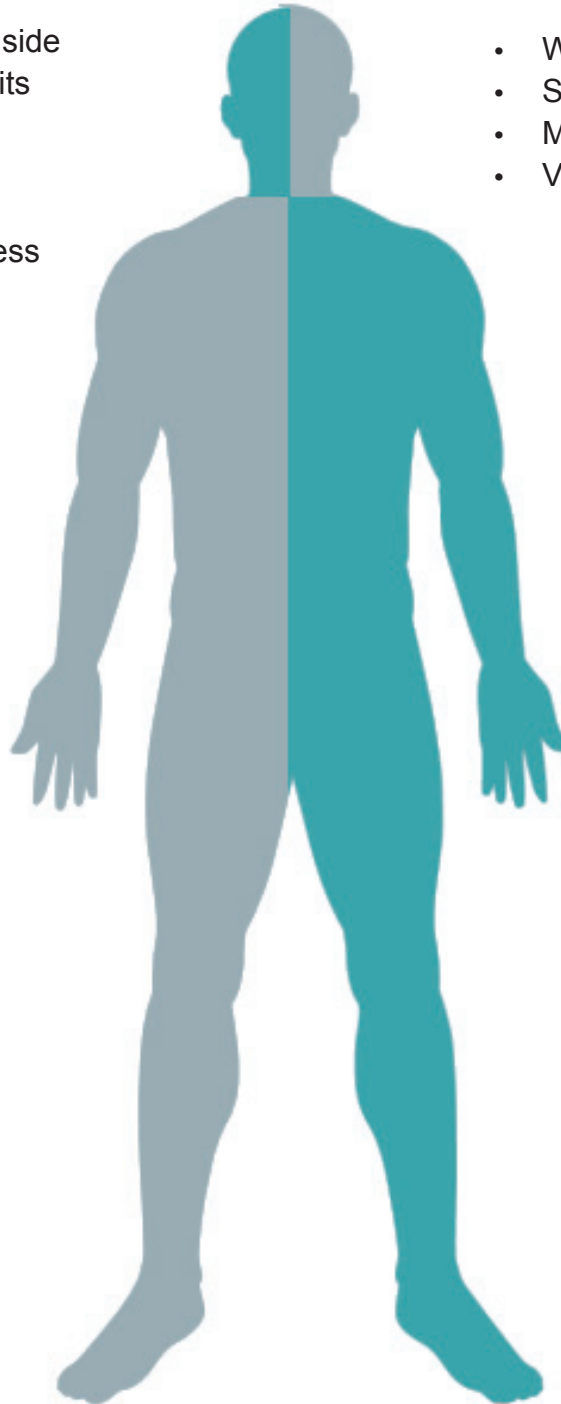
Right Brain versus Left Brain Stroke

Right Brain Damage

- Weak or paralyzed left side
- Visual-perceptual deficits
- Unaware of deficits
- One-sided neglect
- Memory deficits
- Impaired thinking process (impulsive)

Left Brain Damage

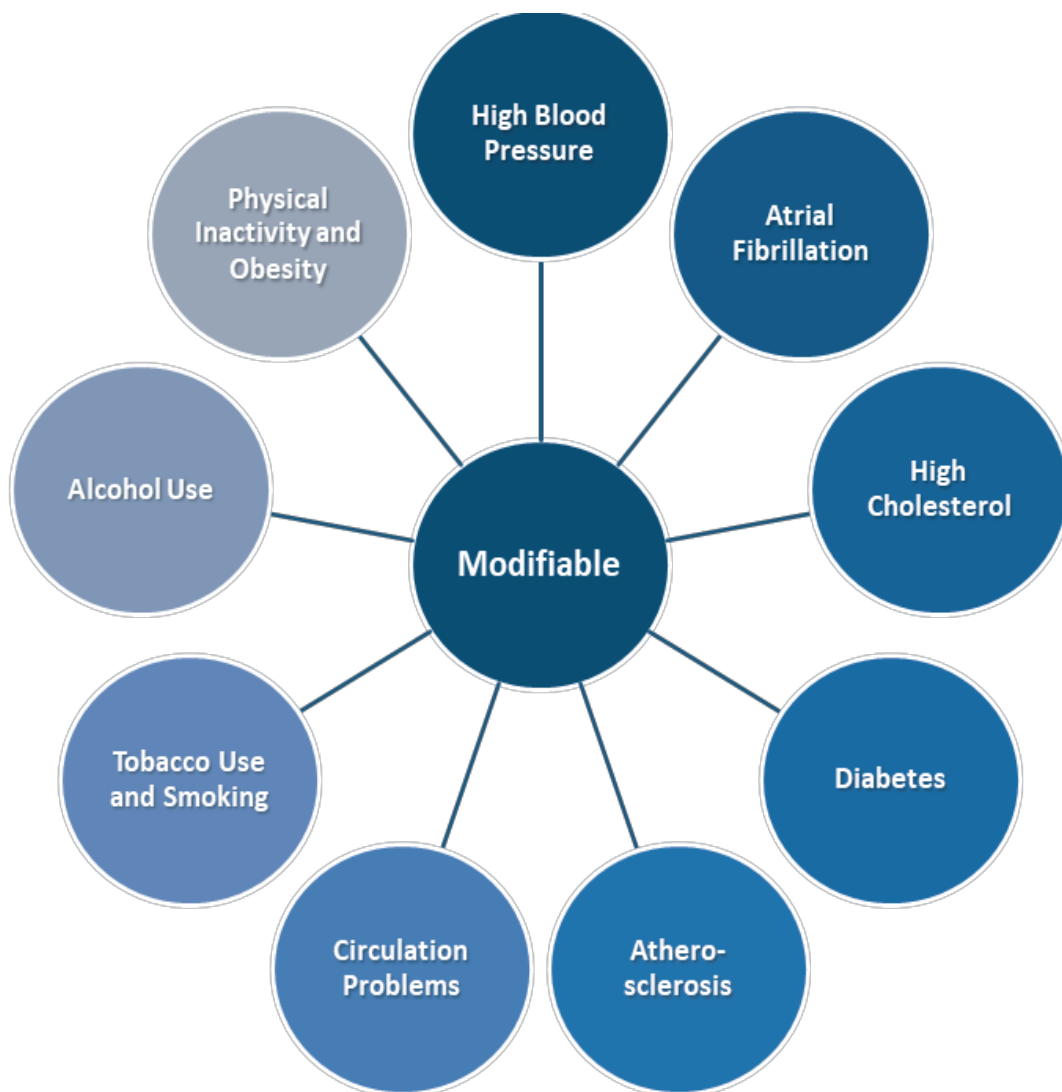
- Weak or paralyzed right side
- Speech-language deficits
- Memory deficits
- Visual-perceptual deficits



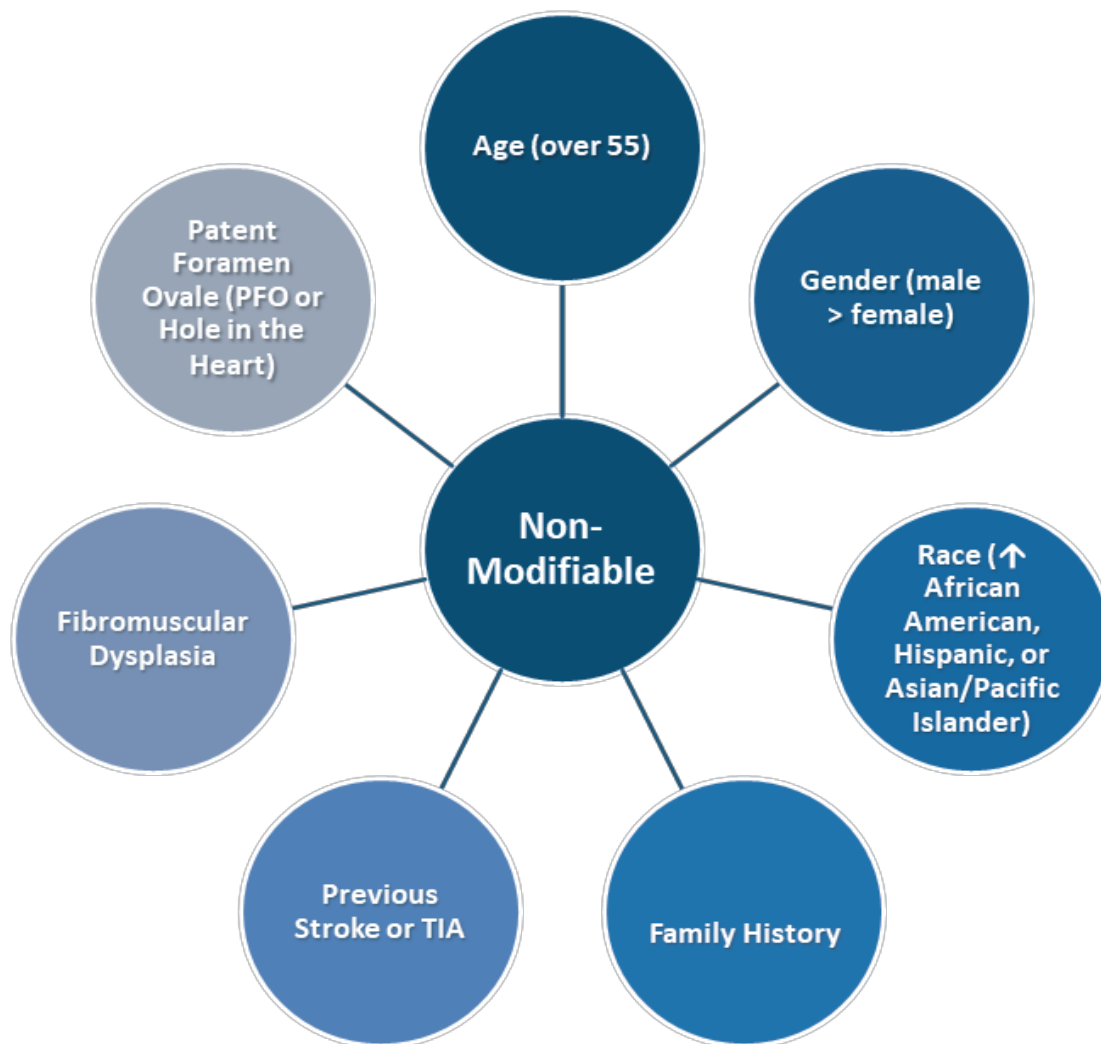
Stroke Risk Factors

Anyone can have a stroke, no matter what their age, race, or gender. However, the chances of having a stroke increase if a person has certain risk factors or criteria that can cause a stroke. The good news is that up to 80% of strokes can be prevented, and the best way to protect yourself and loved ones from a stroke is to understand personal risk and how to manage it. There are two types of risk factors for stroke:

- Modifiable: Lifestyle risk factors or medical risk factors that can be controlled by medications or changes in lifestyle.
- Unmodifiable: Beyond your control, these factors may increase your risk of stroke.



While there are some risk factors for stroke you can do something about, there are others you cannot change. The major risk factors that you cannot change are:



Stroke Signs and Symptoms

A stroke can occur suddenly, and it is important to act quickly if you or someone you know has experienced the sudden onset of the following symptoms:

- Weakness or paralysis of an arm, leg, side of the face, or any part of the body
- Numbness, tingling, or decreased sensation
- Vision changes
- Slurred speech, inability to speak or understand speech, difficulty reading or writing
- Swallowing difficulties or drooling
- Vertigo (spinning sensation)
- Loss of balance or coordination
- Drowsiness, lethargy, or loss of consciousness
- Uncontrollable eye movements or eyelid drooping

If you experience these symptoms or see someone with any of these symptoms, call 911 immediately.

The symptoms of stroke depend on what part of the brain is damaged. In some cases, a person may not even be aware that he or she has had a stroke.

The American Stroke Association recommends evaluating the five following behaviors to determine if symptoms are a stroke:

- **Walk** – Is the patient's balance off?
- **Talk** – Is the patient's face droopy or speech slurred?
- **Reach** – Is one side weak or numb?
- **See** – Is the patient's vision all or partially lost?
- **Feel** – Is the patient's headache severe?



Stroke Prevention

Lower Blood Pressure

High blood pressure is a huge factor, doubling or even quadrupling your stroke risk if it is not controlled. High blood pressure is the biggest contributor to the risk of stroke in both men and women. Monitoring blood pressure and, if it is elevated, treating it is probably the most significant difference people can make to their vascular health.

Your goal: An ideal goal is maintaining a blood pressure of less than 120/80. But there may be good reasons why you and your doctor will not want your readings to be this low. For some, a less aggressive goal (such as no higher than 140/90) may be more appropriate.

How to achieve it:

- Reduce your salt intake to no more than 1,500 milligrams a day (about a half teaspoon).
- Avoid high-cholesterol foods like burgers, cheese, and ice cream.
- Eat 4 to 5 cups of fruits and vegetables every day, one serving of fish two to three times a week, and several daily servings of whole grains and low-fat dairy.
- Get more exercise — at least 30 minutes of activity a day, and more, if possible.
- If you smoke, quit smoking.

Lower Cholesterol

Research shows that lowering cholesterol can lower the risk of another stroke by about 20%.

Cholesterol or plaque build-up in the arteries can block normal blood flow to the brain, causing a stroke and increasing the risk of heart disease. For many people, high cholesterol is caused by eating too much saturated fat and not enough unsaturated fats. Not all cholesterol is the same. Different types of cholesterol can have very different effects on the body.

- Low-density lipoprotein (LDL) is the "bad cholesterol" in terms of its potential for harming the heart and brain. It is a major contributor to arterial plaque development. Levels of LDL cholesterol higher than 130 milligrams per deciliter (mg/dL) are linked to an increased risk for ischemic stroke.
- High-density lipoprotein (HDL) is the "good cholesterol." HDL levels higher than 35 mg/dL protect against ischemic stroke by helping ferry LDL to the liver and out of the bloodstream and by helping stabilize existing plaques.

Your goal: Current guidelines set cholesterol goals for reducing the risk of stroke, a total cholesterol level of less than 240 mg/dL, with LDL below 130 mg/dL and HDL above 40 mg/dL. If you have existing risk factors, the National Stroke Guidelines strongly recommend taking medication to lower LDL cholesterol to under 1.8 mmol/L (70 mg/dL).

How to achieve it:

- Eating a healthy diet is one of the best ways to reduce high cholesterol and lower your risk of stroke.
 - Choose healthier fats and limit your total and saturated fat intake. Avoid foods that are high in cholesterol.
 - Eat foods high in fiber and increase your intake of fruits, vegetables, and other plant-based foods such as whole grains, beans, and legumes.
 - Eating fish high in omega-3 fatty acids can help raise your HDL levels.
 - Avoid foods that are high in sodium and limit your consumption of alcohol.
- Regular exercise at least 30 minutes five times a week.
- If you are smoking, Quit. Studies have found that smokers have higher LDL cholesterol and triglyceride levels and lower HDL levels.
- Lose weight. Maintaining a healthy weight can help you keep your cholesterol levels in check.
- Take your statin or cholesterol-lowering medication. Reducing levels of LDL, statins, and other cholesterol-lowering drugs helps prevent plaque formation, which prevents stroke and heart disease.

Lose Weight

Obesity, as well as the complications linked to it (including high blood pressure and diabetes), raises your odds of having a stroke. If you're overweight, losing as little as 10 pounds can have a real impact on your stroke risk.

Your goal: While an ideal body mass index (BMI) is 25 or less, that may not be realistic for you. Work with your doctor to create a personal weight loss strategy.

How to achieve it:

- Try to eat no more than 1,500 to 2,000 calories a day (depending on your activity level and your current BMI).
- Increase the amount of exercise you do with activities like walking, golfing, or playing tennis, and make activity part of every day.



Exercise More

Exercise contributes to losing weight and lowering blood pressure, but it also stands on its own as an independent stroke reducer.

Your goal: Exercise at a moderate intensity at least five days a week.

How to achieve it:

- Take a walk around your neighborhood every morning after breakfast.
- Start a fitness club with friends.
- When you exercise, reach the level at which you're breathing hard, but you can still talk.
- Take the stairs instead of an elevator when you can.
- If you don't have 30 consecutive minutes to exercise, break it up into 10- to 15-minute sessions a few times each day.



If you drink — do it in moderation.

Drinking a little alcohol, such as an average of one drink per day, is okay. Once you start drinking more than two drinks per day, your risk goes up very sharply.

Your goal: Don't drink alcohol or do it in moderation.

How to achieve it:

- Have no more than one glass of alcohol a day.
- Consider red wine your first choice, which some studies suggest might help prevent heart disease and stroke.
- Watch your portion sizes. A standard-sized drink is a 5-ounce glass of wine, 12-ounce beer, or 1.5-ounce glass of hard liquor.

Quit smoking

Smoking accelerates clot formation in a couple of different ways. It thickens your blood, and it increases the amount of plaque buildup in the arteries. Along with a healthy diet and regular exercise, smoking cessation is one of the most powerful lifestyle changes that will help you reduce your stroke risk significantly.

Your goal: Quit smoking.

How to achieve it:

- Ask your doctor for advice on the most appropriate way for you to quit.
- Use quit-smoking aids, such as nicotine pills or patches, counseling, or medicine.
- Don't give up. Most smokers need several tries to quit.

See each attempt as bringing you one step closer to successfully beating the habit.



Please scan the QR code for more information on Smoking Cessation:



Common Medications after a Stroke



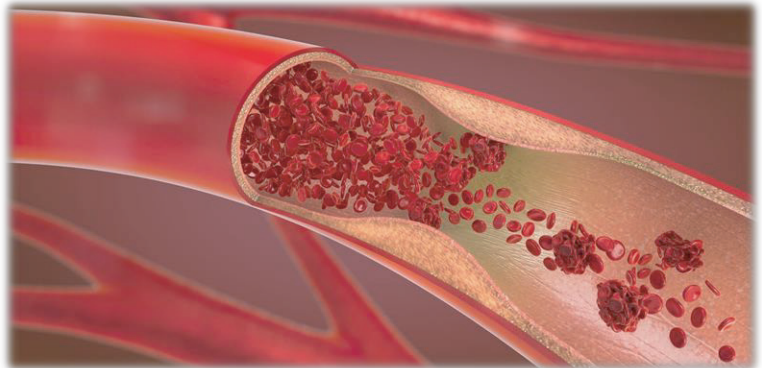
Statins

Statins are medications that not only lower cholesterol levels but also provide additional benefits in decreasing the risk of stroke. By reducing inflammation in the circulatory system, stabilizing plaque

already in the arteries, and preventing clogging of arteries, these drugs can help improve stroke outcomes, especially in small vessel strokes. Small vessel stroke occurs when a small artery that branches off a large artery in the brain becomes obstructed. Statin medications are, therefore, an important step in the prevention of secondary stroke. Standard post-stroke therapy includes the use of a high-intensity statin with the goal of reducing the LDL level. Some common statin drugs are Atorvastatin (Lipitor), Rosuvastatin (Crestor), and Simvastatin (Zocor).

Prevent clots

When a blood vessel is cut or damaged, a blood clot naturally forms to prevent excessive bleeding and aid in the healing process. However, in some cases, a blood clot may form inside a blood vessel, blocking the normal blood flow. If this occurs in an artery leading to the brain, it can cause a stroke. There are small cells in your blood called platelets. When a blood vessel becomes damaged, these platelets stick together to form a blood clot. Antiplatelet drugs stop platelets from sticking together as easily, which reduces the risk of blood clots forming. Some common antiplatelet drugs are aspirin, dipyridamole (Aggrenox) and clopidogrel (Plavix).



Blood thinners

Anticoagulants also stop your blood from being able to clot as easily. They do this by stopping your blood from producing certain proteins, which platelets need to help them form a clot. Anticoagulants also make existing blood clots more stable and less likely to break off and travel to other parts of your body. Some common anticoagulants are warfarin (Coumadin), dabigatran etexilate (Pradaxa), rivaroxaban (Xarelto) and apixaban (Eliquis).

Heart Medications

High blood pressure is the most significant risk factor for stroke. It is crucial to keep your blood pressure within a normal range, which is around 120/80. If your blood pressure regularly exceeds 140/80, you have high blood pressure, and it requires attention.

When your blood pressure is too high, the walls of your arteries can become thickened, weaker, less flexible, or more prone to clots. This can lead to a stroke.

A beta blocker decreases the workload on your heart. Beta-blockers are also used to relieve chest pain or discomfort, help prevent heart attacks, and treat arrhythmias (irregular heartbeats). The generic names for beta-blockers all end in the letters –olol, for example, atenolol, metoprolol, and propranolol.



Angiotensin-converting enzyme inhibitors (ACE-I) lower blood pressure and reduce the strain on your heart. Some of these include captopril, benazepril, and lisinopril. They also help slow down further weakening of the heart muscle. Studies have also shown that in certain patients, the use of ACE-I may reduce repeat stroke incidence even if blood pressure is normal. In diabetics, these drugs may preserve renal function. In patients with kidney disease, these drugs slow renal function decline. They also prolong the time until dialysis is required.

Angiotensin receptor blockers (ARB) work very much like the ACE-I. However, instead of blocking the formation of angiotensin as ACE-I does, they block the effect of angiotensin on the arteries themselves. Most of the positive effects of ACE-I as listed above are also noted with ARBs. All ARBs end in the letters -sartan, like losartan and valsartan.

Other medications

Medications may also be given to relieve pain, anxiety, and depression. This often occurs during and after a stroke.

If you need help paying for any of your medications, please talk to your doctor, nurse, case manager, or pharmacist for assistance.

Swallowing Problems

Difficulty with swallowing is the feeling that food or liquid is stuck in the throat or at any point before the food enters the stomach. This problem is also called dysphagia.

This may be caused by a brain or nerve disorder, stress or anxiety, or problems that involve the back of the tongue, the throat, and the esophagus (tube leading from the throat to the stomach).

Symptoms of swallowing problems include:

- Coughing or choking, either during or after eating
- Gurgling sounds from the throat during or after eating
- Throat clearing after drinking or swallowing
- Slow chewing or eating
- Coughing food back up after eating
- Hiccups after swallowing
- Chest discomfort during or after swallowing
- Unexplained weight loss

Common tips for patients with swallowing problems:

- Keep mealtime relaxed.
- Sit up as straight as possible when you eat.
- Take small bites, less than 1 teaspoon (5 mL) of food per bite.
- Chew well and swallow your food before taking another bite.
- If one side of your face or mouth is weaker, chew food on the stronger side of your mouth.
- Do not mix solid foods with liquids in the same bite.
- Do not try to wash down solids with sips of liquids unless your speech or swallowing therapist says this is OK.
- Do not talk and swallow at the same time.
- Sit upright for 30 to 45 minutes after eating.
- Do not drink thin liquids without checking with your doctor or therapist first.

You may need someone to remind you to finish swallowing. It may also help to ask caregivers and family members not to talk to you when you are eating or drinking.

Sexuality after a Stroke

After having a stroke, you may have a lot of questions about your sexuality. This could include concerns about body changes, fertility, sexual activity, and relationships. It's important to know that there are many ways to express your sexuality, and finding what works for you during your recovery is key. However, you may experience various medical, physical, and psychological changes that can affect your sexual health, so it's important to be aware of them and seek help if needed.

Medical

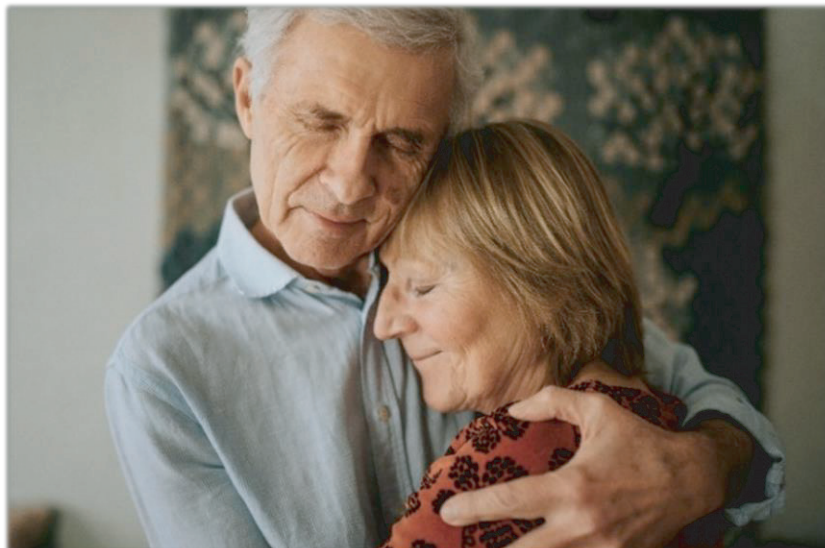
Stroke can cause changes to areas of the brain used in sexual functioning. Medicines, medical treatments, and medical issues other than stroke may also be affecting your interest or ability to take part in sexual activities. Stopping medicines can be dangerous, so talk to your doctor about a plan first.

Physical

You may have changes after a stroke that impact your mobility, your senses, or how your bowel or bladder functions. You may need to adjust how you take part in sexual activity, such as trying new positions, using adaptive equipment, planning around your bowel or bladder program, and managing pain or spasticity (muscle tightness or spasms).

Psychological

Many people have changes in their thinking or mood after a stroke, including feeling sad, worried, frustrated, guilty, or embarrassed. People can also have changes to how they feel about their body, their self-image, or their role in relationships. These feelings can impact their interest or how they take part in sexual activities. Although these topics can be challenging or uncomfortable, dealing with them is a part of stroke recovery. Most often, sexual problems after a stroke are “thinking” problems rather than “doing” problems. Talk to your treatment team about how to address your concerns with sexual functioning.



Treatment for the physical changes after a Stroke

Neuroplasticity

When brain cells die, connections or pathways within the brain may be damaged. This may interrupt the normal flow of signals within the brain and between the brain and other parts of the body. Fortunately, our brains are very sophisticated and are constantly reorganizing and rerouting these connections. It's almost like taking a detour that will get you to the same place but using a different route. In some cases, a new pathway can be established, or an unused connection can be reactivated, enabling signals to travel around the damaged area. This ability is called neuroplasticity. Neuroplasticity may also involve the occurrence of cell reassignment. Participation in an acute neuro-rehab program has been proven to help facilitate neuroplasticity or re-wiring of your brain.

Muscle Tone

After a stroke, one side of the body is often affected. If the arm and leg are paralyzed, this is called hemiplegia. If the arm and leg are weak but still can move, this is called hemiparesis. Sometimes, during recovery, stroke survivors experience variances in tone, such as:

- Spasticity -- Increased, abnormal muscle tone or muscle activity. This is known as high tone, which can cause difficulty with the proper positioning of joints and prevent normal movement.
- Flaccidity -- Absence of muscle tone. The arm or leg appears immobile and doesn't respond to commands (from the brain) to move.
- Combination—A mixture of high and low tone. For example, a stroke survivor's leg may have very low tone, but his/her arm may have high tone.

Treatment: The physicians, therapists, and nurses will promote normal tone through medications and neuromuscular retraining techniques to facilitate normalized muscle tone for function.

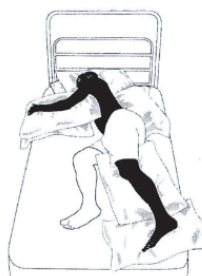
Positioning

After a stroke people can experience differing physical problems. Careful positioning and placement of pillows may increase comfort and safety. The **left side** affected by the stroke is in **black**. Bed rails not shown.



LYING ON LEFT SIDE

- Use this position only if it does not affect breathing
- 1-2 pillows for the head
- Protract the scapula of the left shoulder, extend wrist & fingers
- Place the right leg forward on 1-2 pillows
- Place pillows in front and behind



LYING ON RIGHT SIDE

- 1-2 pillows for head
- Place the left shoulder forward, scapula protracted with arm supported on pillow
- Left leg backwards on 1-2 pillows
- Place a pillow behind back



SITTING UP

- Sit well back in the centre of the chair or wheelchair
- Place arms well forward
- The left arm may rest on a table or arm rest
- Feet flat on floor or footrests
- Knees directly above feet



LYING ON BACK

- Head of bed 0-30° unless contraindicated
- Place 3 pillows to support both shoulders and the head
- Left arm on a pillow
- Optional pillow beneath left hip
- Ensure feet are in a neutral position



SITTING IN BED

- Sit upright and well supported by pillows
- Place both arms on pillows
- Legs supported for comfort

Adopted by APSS Pillar 3, 2007
Reviewed December 2008
Reference: Acknowledgement to
Mark Smith, Clinical Specialist
Physiotherapist for Stroke, NHS
Lothian

Hemiplegic Shoulder Care

A common sequela of stroke is hemiplegic shoulder pain, which can hamper functional recovery. One of the most common shoulder concerns is subluxation. This is due to low muscle tone or spasticity of the arm. It is characterized by the upper arm bone (humerus) dropping out of the shoulder socket. The muscle tone may be too low to hold the arm bone securely into the shoulder socket, or spasticity may cause subluxation by pulling the bone into an abnormal position.

Patients who have had a stroke and have their arm unsupported and/or handled inappropriately (i.e., pulling on the arm) are at higher risk for subluxation or shoulder pain. It is important that caregivers are properly trained in handling the affected arm. Lap trays, arm troughs, or pillows can provide positional support to decrease the risk of pain and injury, preventing further motor function. Your therapy team will educate you about proper positioning upon evaluation.

Activities of Daily Living

Your occupational therapist (OT) will work with you to regain your independence with activities of daily living (ADLs), such as going to the bathroom, showering, or getting dressed. These tasks may be challenging after a stroke because of weakness, changes in sensation, communication, and thinking, or visual changes. Your OT will train you in adapted techniques or with adaptive equipment to help you be as successful and independent as possible.

Dressing Tips

- Dress your affected side first
- Sit down while getting dressed
- Wear loose-fitting clothing
- Use adaptive equipment for fasteners

Bathing Tips

- Purchase a handheld showerhead and a long-handled sponge
- Sit on a shower chair if your balance is impaired
- Gather items needed before getting into the shower
- Use pump bottles for toiletries

Mobility

Many stroke survivors are challenged with impaired mobility. Through intense therapy, stroke survivors can overcome or compensate for:

- Weakness or paralysis on one side (hemiparesis or hemiplegia)- may result in decreased strength and loss of muscle control on one side
- Apraxia- difficulty completing learned voluntary movements; the concept of the task is understood, but movements lack the correct force, direction, and timing to complete properly

- Ataxia – Uncoordinated movements
- Decrease in body awareness (Proprioception) -- The person doesn't recognize right from left or know where their body is in space
- Decrease in gross and fine motor control: Everyday activities are a new challenge for the stroke survivor. Walking, transferring from one surface to another, getting dressed, grooming, toileting, buttoning, writing, and more must be relearned.
- Decrease in balance: Dizziness, spinning sensations, or the inability to maintain an upright ("midline") posture increase the risk of falls.

Refer to your physical and occupational therapist for specific treatments, retraining ideas, and compensatory techniques to overcome any lasting effects of your stroke. They are there to help you, share ideas with you, and make you as functional as possible. Use every therapy session to gain knowledge and ability. Most importantly, never stop trying.



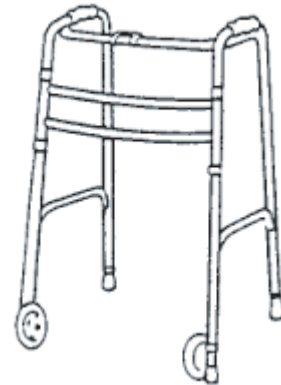
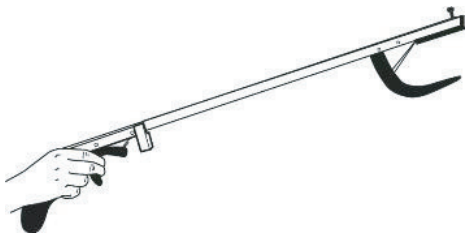
Braces and Orthotics

Braces and orthotics may be used to support weak joints and assist with mobility.



Adaptive equipment and Durable Medical Equipment

Your therapist may recommend various equipment to assist with positioning, safety, mobility, and function.



Vision Changes after a Stroke

A stroke has the potential to cause vision problems, such as reading difficulties, reduced visual memory, and a decline in depth perception and balance. Vision is not only about seeing but also about how the brain interprets and comprehends visual information. It enables us to perceive color, shape, and size and recognize the meaning behind what we see. In some cases, a stroke can lead to vision loss.

Vision problems that occur after a stroke depend on which part of the brain was affected by the stroke. The brain regions that play a role in visual processing include the occipital lobe, located in the back of the brain, which is the primary vision center, and other lobes that also receive visual information. Additionally, the brain stem, located at the base of the brain, controls eye movements, sensations related to balance and stability, and your ability to recognize and understand objects.



Strokes can frequently cause a loss of some or all of the visual field, which is the entire area that we can see in front of us. This type of vision loss is commonly called a "field cut" and can create significant difficulties with everyday activities such as reading, moving around, and recognizing people or objects.

- Homonymous hemianopia is the loss of vision in either the right or left side of each eye's visual field.
- Quadrantanopia is the loss of a quarter of the visual field.
- Scotoma is a blind spot in one or both eyes.
- Other visual challenges that stroke survivors may experience include:
 - Neglect (spatial inattention): This is a condition where stroke survivors do not respond to and are not aware of things on their stroke-affected side. Neglect is not related to vision but results from damage to brain parts that perceive and interpret vision.
 - Eye movement disorders: These occur when the nerves or muscles responsible for moving the eyes are damaged. Examples of eye movement disorders in stroke survivors include rhythmic eye movements (nystagmus), misaligned eyes (strabismus), eye tracking control issues (oculomotor dysfunction), and double vision (diplopia). Stroke survivors may experience affected depth perception, balance, coordination, and overall vision.
 - Dry eyes: Some stroke survivors may have difficulty blinking or fully closing their eyes, which can cause their eyes not to stay moist enough. This can lead to dry eyes, causing irritation, burning, or blurry vision.

Preventing Falls

Falls are common and can happen both inside and outside the home. After experiencing a stroke, the risk of falling increases significantly, with a 40% chance of falling within the first year. To prevent falls, it is important to take action, such as creating a safe home environment, avoiding potential fall hazards, and engaging in physical exercise to improve strength and balance.

Home Safety

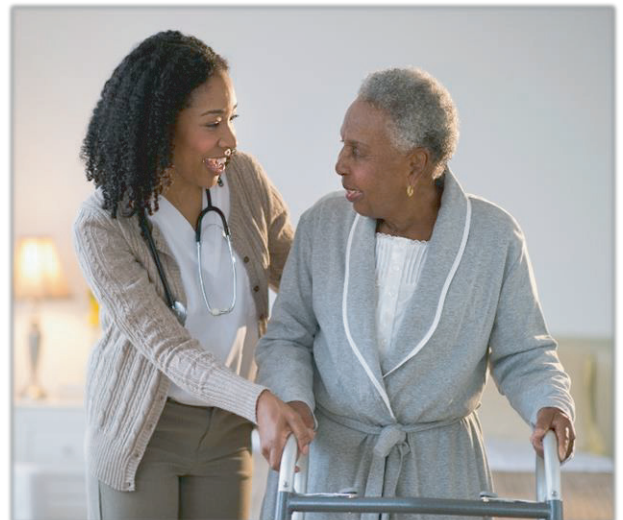
- Set up your home so you do not have to climb steps.
- Have a bed that is low so that your feet touch the floor when you sit on the edge of the bed.
- Keep tripping hazards out of your home.
- Remove loose wires or cords from areas you walk through to get from one room to another.
- Remove loose throw rugs.
- Do not keep small pets that you could trip over in your home.
- Fix any uneven flooring in doorways.
- Good lighting is needed, especially for the path from the bedroom to the bathroom and in the bathroom.

Stay safe in the bathroom.

- Put handrails in the bathtub or shower and next to the toilet.
- Place a slip-proof mat in the bathtub or shower.
- Reorganize the home so things are easier to reach. Keep a cordless or cell phone with you when you need to make or receive calls.

Exercise to Help Build Your Strength

Weak muscles that make it more difficult to stand up or keep your balance are a common cause of falls. Balance problems can also cause falls. When you stand up from a sitting position, go slowly. Hold on to something stable. If you have problems getting up, ask your provider about seeing a physical therapist. The therapist can show you how to build strength and balance to make getting up and walking easier.



Aphasia

Aphasia is the loss of the ability to understand or express spoken or written language. It commonly occurs after strokes or traumatic brain injuries, but it can also occur in people with brain tumors or degenerative diseases that affect the language areas of the brain.

People who have aphasia have language problems. They may have trouble saying and/or writing words correctly. This type of aphasia is called expressive aphasia. People with expressive aphasia may understand what another person is saying. If they do not understand what is being said, or if they cannot understand written words, they have what is called receptive aphasia. Some people have a combination of both types of aphasia.

Expressive aphasia may be non-fluent, in which case a person has trouble:

- Finding the right words
- Saying more than one word or phrase at a time
- Speaking overall
- Another kind of expressive aphasia is fluent aphasia. People who have fluent aphasia may be able to put many words together. But what they say does not make sense. They are often unaware that they are not making sense.

People who have aphasia may become frustrated:

- When they realize others cannot understand them
- When they cannot understand others or cannot find the right words
- Speech and Language Therapists can work with people with aphasia and their families or caregivers to improve their communication ability.

The most common cause of aphasia is stroke. Recovery may take up to 2 years, though not everyone fully recovers. Aphasia may also be due to the brain losing function, such as with Alzheimer's disease. In such cases, aphasia will not get better.

Improving Daily Communication

- Keep distractions and noise down.
- Turn off the radio and TV.
- Move to a quieter room.
- Talk to people who have aphasia in adult language. Do not make them feel as if they are children. Do not pretend to understand them if you do not.
- Do not shout if a person with aphasia cannot understand you. Shouting will not help unless the person also has a hearing problem. Make eye contact when talking to the person.

Dysarthria

Dysarthria is a condition that occurs when there are problems with the part of the brain, nerves, or muscles that help you talk. It can cause the muscles that produce speech to become paralyzed or weakened. The damage may make it difficult to control your tongue or voice box, causing you to slur words.

Most times, dysarthria occurs:

- As a result of brain damage after a stroke, head injury, or brain cancer.
- When there is damage to the nerves or the muscles that help you talk.
- When there is an illness of the nervous system, such as myasthenia gravis or amyotrophic lateral sclerosis

Simple changes in how you talk with a person with dysarthria can make a difference.

- Turn off the radio or TV.
- Move to a quieter room if needed.
- Make sure the lighting in the room is good.
- Sit close enough so you and the person with dysarthria can use visual cues.
- Make eye contact with each other.

The person who has dysarthria and their family may need to learn different ways of communicating, such as:

- Using hand gestures.
- Write what you are saying by hand.
- Using a computer to type out the conversation.
- Use alphabet boards if the muscles used for writing and typing are also affected.
- If you do not understand the person, do not just agree with them. Ask them to speak again. Tell them what you think they said and ask them to repeat it. Ask them to slow down so that you can make out their words.
- Listen carefully and allow the person to finish. Be patient. Make eye contact with them before speaking. Give positive feedback for their effort.
- Ask questions so they can answer you with yes or no.

If you have dysarthria:

- Try to speak slowly.
- Use short phrases.
- Pause between your sentences to make sure the person listening to you understands.
- Use hand gestures.
- Use a pencil and paper or a computer to write out what you are trying to say.

The Caregiver after a Stroke

Caregivers play a crucial role in the post-stroke recovery process. However, they are often overlooked, and their essential contribution to successful home care is ignored. Taking care of stroke survivors at home can result in high levels of physical, emotional, and mental stress. Caregiving can be particularly challenging due to job disruption and family life. While family caregivers can promote positive post-stroke recovery outcomes, they must also prioritize self-care. Every stroke survivor's recovery journey is unique, and even if the survivor returns to work and maintains a high degree of independence, family members may need to play a more significant role in their life than before the stroke.

It is important to remember that you are not alone in this task. Help is available in the community, and it is crucial to seek it out. Rehabilitation can be a lengthy process with slow and sometimes erratic progress. Every person's recovery journey is different. Your role as an advocate will continue throughout this journey. During the recovery process, it is essential to focus on your loved one's capabilities rather than their limitations and show encouragement for every new gain, whether small or large.

Providing care for a loved one can often feel overwhelming, but it's important to be mindful of your own health and how stress can impact it. To prevent caregiver burnout, make sure you're getting sufficient sleep, eating a balanced diet, tending to your own medical needs, and exercising regularly if possible. Remember to prioritize your own well-being while caring for your loved one.



Counseling and respite care, a break provided by a family member, friend, or hired caregiver, can give you some much-needed time to regroup and renew your energy for the tasks ahead. Remember to ask for help when you feel the need. Getting support for yourself and your loved one is essential and beneficial for both of you.

Please scan the QR code for more information on Stroke Support Group Finder:



Bowel and Bladder Care after a Stroke

It's worth noting that approximately 50% of stroke patients will experience varying degrees of incontinence. Sometimes, incontinence is caused by your brain having trouble communicating with your body. In most cases, this is a temporary condition that should improve over time as the brain injury heals. However, it is not uncommon for stroke patients to experience both bladder and bowel incontinence.

Urinary incontinence

- ❑ Not being able to make it to the toilet in time
- ❑ Leaking urine during everyday activities, such as walking, lifting, bending, exercising
- ❑ Leaking urine without any warning
- ❑ Wetting your bed during sleep

Fecal incontinence

- ❑ Need to pass stool but not being able to make it to the toilet in time
- ❑ Passing stool without knowing

Strategies for dealing with bladder and bowel problems

- Make getting to the bathroom easier.
- Clear a path. Remove any items, such as furniture or mats, that block your way to the toilet.
- Install a night light.
- Use a raised toilet seat. These come with or without armrests and make it easier and safer to get on and off.
- If getting on or off the toilet is too hard or unsafe, use a commode (portable toilet) or urinal. This can be particularly helpful at night.

Bowel and Bladder retraining involves following a schedule to stimulate bowel and bladder movements rather than waiting until you have the urge to use the toilet.

- Establish Routines- Creating a routine can help to avoid accidents. It can help to go to the toilet after every meal or every couple of hours and make sure you are eating and drinking at regular times. Limit drinks to two hours before bedtime to avoid accidents overnight; however, it is important to make sure that you have had enough to drink throughout the day.
- Appropriate Clothing-Clothing that can be easily removed. Elasticated waists without zips and buttons can help if you struggle with dexterity and can be quickly removed if you have urge incontinence.
- Pelvic Floor Muscle Exercises (Kegel exercises)-The pelvic floor is layers of muscles that stretch from the pubic bone to the coccyx and then from side to side. These muscles help support the bladder, bowel, and womb in women. These muscles can become weak from damage caused to the brain by a stroke. When these muscles become slack, it can weaken the sphincter muscle to the rectum or bladder, allowing stool or urine to be passed involuntarily. Your physical therapist can teach you how to perform Kegel exercises.

Tips for Bowel Incontinence

Nerves that help the bowels work smoothly can be damaged after a stroke. Have a routine. Once you find a bowel routine that works, stick to it:

- Pick a regular time, such as after a meal or a warm bath, to try to have a bowel movement.
- Be patient. It may take 15 to 45 minutes to have bowel movements.
- Try gently rubbing your stomach to help the stool move through your colon.
- Avoid constipation:
 - Drink more fluids.
 - Stay active or become more active as much as possible.
 - Eat foods with lots of fiber.
 - Ask your provider about medicines you are taking that may cause constipation (such as medicines for depression, pain, bladder control, and muscle spasms).

Tips for Bladder Incontinence

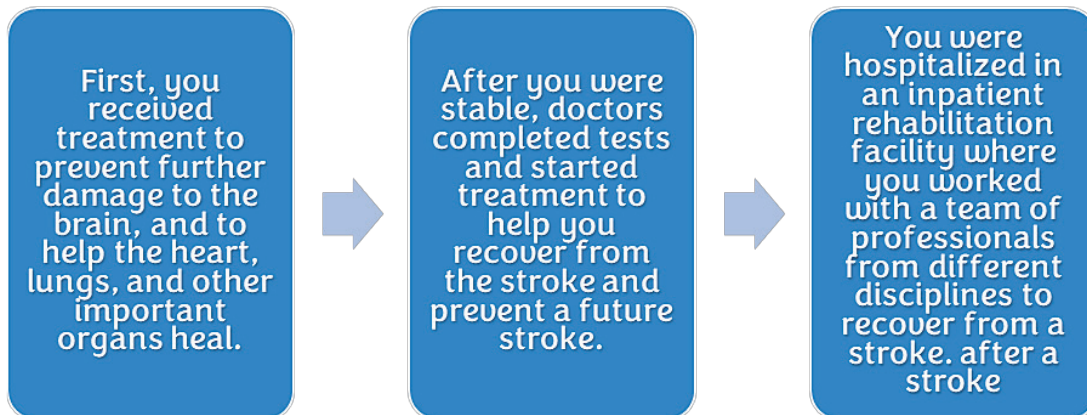
While it does involve extra thought and effort, with good advice and preparation, incontinence can be managed discreetly as part of daily living.

- Keep a record of when and how much you urinate. See if there is a common time of the day that incontinence occurs. Use the toilet 30 minutes before that time.
- Have a routine. Use the toilet or bedside commode at regular times, at least every 2 to 4 hours. Use the toilet before therapy and exercise.
- If your skin gets wet from urine, wash it with soap and water and rinse well.
- Drink at least eight 8-ounce glasses of fluid daily to help wash bacteria out of the urinary tract and prevent infection.
- Practice your rehab exercises to improve pelvic muscle tone.
- You may also want to use washable waterproof pads under sheets and on chairs to protect furniture.
- Male patients may use a condom catheter to collect urine.



Discharge from Inpatient Rehabilitation

What happened after you had a stroke?



Going Home After Stroke

Discharge Plan- During your hospital stay, your healthcare team will teach you and your support system how to take care of your needs after you leave the hospital. Before you leave the hospital, you and your support system will be given your discharge instructions. This information will include:

- Follow-up appointment with your doctor
- Important phone numbers
- Directions for how to care for yourself
- A list of your current medicines and any new prescriptions
- Information on what you can do to help your recovery
- Medical equipment and follow-up therapy information

What to Expect at Home

Because of possible injury to the brain from the stroke, you may notice problems with:

- Changes in behavior
- Doing easy tasks
- Memory or Paying attention
- Moving one side of the body
- Muscle spasms
- Sensation or awareness of one part of the body
- Swallowing
- Talking or understanding others
- Thinking
- Seeing to one side (hemianopia)
- You may need help with daily activities you used to do alone before the stroke.



Depression

After a stroke, it is common for some people to experience symptoms of sadness, loss of interest, or feelings of hopelessness as they learn to adapt to the changes caused by the stroke. These feelings may develop soon after the stroke or up to two years later. It is important to discuss any such feelings with your physician as soon as they arise. It is also normal to feel a sense of loss as you adjust to the changes in your functioning caused by the stroke.



Moving Around

- Moving around and doing normal tasks may be hard after a stroke.
- Make sure your home is safe. Ask your provider, therapist, or nurse about making changes in your home to make it easier to do everyday activities.
- Find out what you can do to prevent falls and keep your bathroom safe.



Support of your family and caregivers

Stroke recovery can be difficult and confusing for survivors and caregivers. By increasing your knowledge about what a stroke is and what to expect, you can feel more in control and less overwhelmed. Stroke recovery is a difficult process, and it can be hard to know how to help someone who had a stroke. It takes constant, dedicated work for survivors to regain function and independence, which can be physically and emotionally draining. That's why it is critical for stroke survivors to have a loved one there to support them through the ups and downs of recovery. As a family member or caregiver, you may be wondering how to best support your loved one as they navigate stroke recovery.

Positioning

- Exercises to keep your elbows, shoulders, and other joints loose
- Watching for joint tightening (contractures)
- Making sure splints are used in the correct way
- Making sure arms and legs are in a good position when sitting or lying
- If you or your loved one is using a wheelchair, follow-up visits to make sure it fits well are important to prevent skin ulcers.
- Check every day for pressure sores at the heels, ankles, knees, hips, tailbone, and elbows.
 - Change positions in the wheelchair several times per hour during the day to prevent pressure injuries.
- If you have problems with spasticity, learn what makes it worse. You or your caregiver can learn exercises to keep your muscles loose.
- Tips for making clothing easier to put on and take off are:
 - Velcro is much easier than buttons and zippers. All buttons and zippers should be on the front of a piece of clothing.
 - Use pullover clothes and slip-on shoes.



Communication

- People who have had a stroke may have speech or language problems. Tips for family and caregivers to improve communication include:
 - Keep distractions and noise down. Keep your voice lower. Move to a quieter room. Do not shout.
 - Allow plenty of time for the person to answer questions and understand instructions. After a stroke, it takes longer to process what has been said.
 - Use simple words and sentences; speak slowly. Ask questions in a way that can be answered with a yes or no. When possible, give clear choices. Do not give too many options.
- Break down instructions into small and simple steps.
 - Repeat if needed. Use familiar names and places. Announce when you are going to change the subject.
 - Make eye contact before touching or speaking if possible.
 - Use props or visual prompts when possible. Do not give too many options. You may be able to use pointing or hand gestures, or drawings. Use an electronic device, such as a tablet computer or cell phone, to show pictures to help with communication.



Tips for Taking Medicines

Have all your prescriptions filled before you go home. It is very important that you take your medicines the way your provider instructed you to. Do not take any other drugs, supplements, vitamins, or herbs without asking your provider about them first.

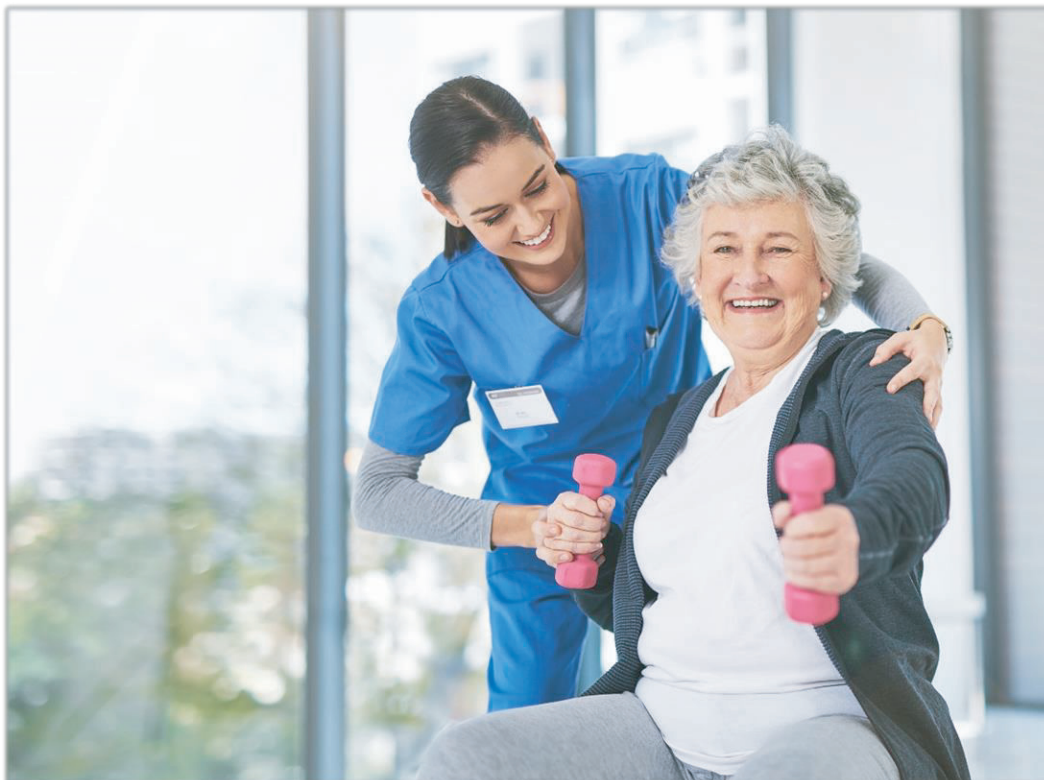
- You may be given one or more of the following medicines. These are meant to control your blood pressure or cholesterol and to keep your blood from clotting. They may help prevent another stroke:
 - Antiplatelet medicines (aspirin or clopidogrel) help keep your blood from clotting.
 - Beta blockers, diuretics (water pills), and ACE inhibitor medicines control your blood pressure and protect your heart.
 - Statins lower your cholesterol.
 - If you are taking a blood thinner, such as warfarin (Coumadin), you may need extra blood tests.
 - If you have diabetes, control your blood sugar at your provider's recommended level.

Remember: Do NOT stop taking any of these medicines without talking to your provider!



Tips for Staying Healthy

- If you have problems with swallowing, you must learn to follow a special diet that makes eating safer. The signs of swallowing problems are choking or coughing when eating.
 - Learn tips to make feeding and swallowing easier and safer:
 - Avoid salty and fatty foods and stay away from fast food restaurants to make your heart and blood vessels healthier.
 - Limit how much alcohol you drink to a maximum of 1 drink a day if you are a woman and 2 drinks a day if you are a man. Ask your provider if it is OK for you to drink alcohol.
- Keep up to date with your vaccinations. Get a flu shot every year. Ask your provider if you need a vaccination to prevent pneumococcal infections (sometimes called a "pneumonia shot").
- Do not smoke. Ask your provider for help quitting if you need to. Do not let anybody smoke in your home.
- Try to avoid stressful situations. If you feel stressed all the time or feel very sad, talk with your provider.
- If you feel sad or depressed at times, talk to family or friends about this. Ask your provider about seeking professional help.



When to Call the Doctor

Contact your provider if you have:

- Problems taking medicines for muscle spasms
- Problems moving your joints (joint contracture)
- Problems moving around or getting out of your bed or chair
- Skin sores or redness
- Pain that is becoming worse
- A recent fall
- Choking or coughing when eating
- Signs of a bladder infection (fever, burning when you urinate, or frequent urination)

Call 911 or the local emergency number if the following symptoms develop suddenly or are new:

- Numbness or weakness of the face, arm, or leg
- Blurry or decreased vision
- Not able to speak or understand
- Dizziness, loss of balance, or falling
- Severe headache



Please scan the QR code for more information on Stroke Recovery:

