Stroke Rehabilitation at Dodd Rehabilitation Hospital

The Ohio State University
Wexner Medical Center

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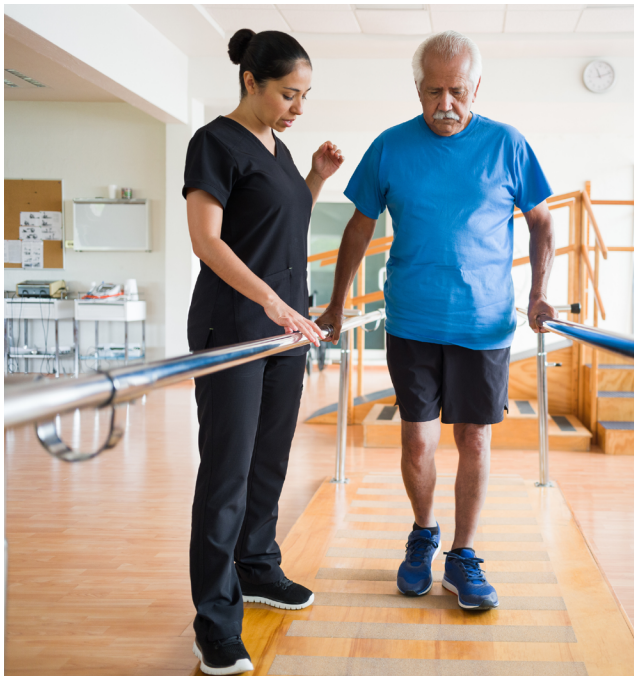
For a digital copy of this book, visit go.osu.edu/pted3962.

Rehabilitation Overview



Starting your recovery

The goal of rehabilitation is to help you return to the best life you can at home, at work, and in your community. We offer many kinds of therapy to support your recovery.

You will take an active role in your care. You will practice the skills you learn in therapy while you are in your room, with help from the nursing staff. Your therapy plan is made just for you, and you will help make decisions about your treatment.

While you are at **Dodd Rehabilitation Hospital**, our healthcare team will support you, your family, and your caregivers throughout your stay.

This book is a tool to help you learn while you are in the hospital. It is yours to keep and use after you go home. If anything is unclear, please tell a member of your healthcare team. They will explain it in another way. You are welcome to share this book with family and friends.

Your therapy goals

Your therapy goals are based on your personal needs. Your healthcare team will work with you to improve your ability to:

- Swallow safely
- Communicate with others
- Interact well with family, friends, and staff
- Focus on tasks
- Do more than one task at a time
- Move safely in your daily spaces, including getting in and out of bed, the toilet, the car, the shower or bathtub, stairs, and the floor
- Stay active for longer periods
- Dress, groom, eat, and bathe
- Clean, cook, and plan your day
- Enjoy hobbies, leisure activities, and sports
- Cope with changes and adjust to daily life

Your therapy plan

Your therapy plan will be:

- Made for your needs and lifestyle
- Focused on building skills through practice
- Designed to help you move in different ways
- Challenging enough to help you improve over time

You will be asked to practice the skills and exercises you learn during therapy when you are in your hospital room.

Your healthcare team will check your progress each week and update your plan as needed.

Your Healthcare Team

After a stroke, many people work together to support your care. Your team includes doctors, nurses, therapists, and other trained professionals. They will help you and your family learn how to manage your health after you leave the hospital.

Below are some team members and what they do.

Speech language pathologist (SLP)

A speech language pathologist is also called a speech therapist.

- Your nurse will first check how well you can swallow.
- If there are any concerns, the SLP will do a **bedside swallowing evaluation (BSE)**. This test helps find out what kind of swallowing problem(s) you may have.
- The SLP will make a plan to help you swallow safely.
- The SLP also helps people who have trouble speaking, understanding others, or reading and writing.

Physical therapist (PT)

A physical therapist helps you move safely and build strength. They can help with:

- Moving in bed
- Stretching and range of motion exercises
- Getting in and out of a wheelchair
- Walking alone or with a cane or walker
- Improving strength, balance, and coordination

Rehab psychologist

A rehab psychologist helps you and your family with the emotional and mental effects of stroke. They can help with:

- Emotional health
- Mental health
- Thinking skills, such as memory and problem solving

Occupational therapist (OT)

An occupational therapist helps you relearn daily living skills. They can help with:

- Using your arms if movement is limited
- Vision problems
- Thinking skills like memory, focus, and safety
- Grooming and dressing
- Using special equipment, such as a splint or cast

Social worker

A social worker supports you and your family during recovery. They can help with:

- Adjusting to life after a stroke
- Family and relationships concerns
- Money or insurance questions
- School or job needs
- Choosing a nursing facility if needed

Care manager

A care manager helps coordinate your care. They:

- Work with your insurance company
- Help arrange medical equipment
- Communicate with your doctors and care team
- Help plan your discharge from the hospital
- Arrange follow-up care after you go home

Understanding Stroke

A stroke happens when the brain suddenly stops working the way it should. This occurs when blood cannot reach part of the brain. You may hear the term **cerebrovascular accident** or **CVA**, which are other names for stroke. There are two main types of stroke: **ischemic stroke** and **hemorrhagic stroke**.

Ischemic stroke

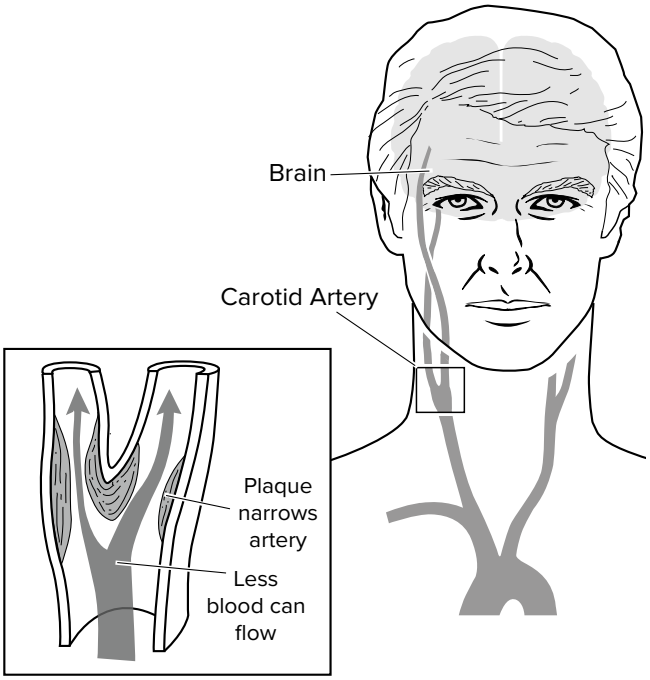
Most strokes are ischemic strokes. This type happens when a blood clot blocks blood flow to the brain.

- The blockage can come from **fatty buildup** (called plaque) or from **blood clots**.
- Sometimes pieces of plaque or clots break off and travel to the brain, causing a stroke.

Your healthcare team may talk about where the clot started:

- **Thrombus:** a clot that forms inside a blood vessel in the brain.
- **Embolus:** a clot that forms somewhere else in the body and travels to the brain.

Sometimes the cause of an ischemic stroke is not known. This is called a **cryptogenic stroke**.

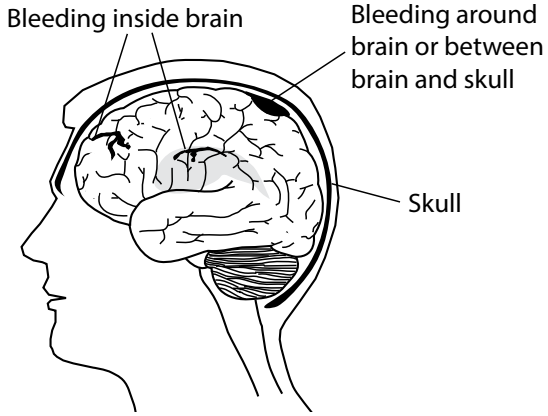


Hemorrhagic stroke

A hemorrhagic stroke happens when there is **bleeding in or around the brain**. The bleeding keeps oxygen from reaching brain tissue. This type of stroke is less common but can be very serious.

Types of bleeding include:

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



Common causes of bleeding include:

- High blood pressure, also called hypertension
- Ruptured aneurysm — a weak spot or bulging spot in a blood vessel that breaks open
- Smoking, alcohol use, or drug abuse
- Other causes such as injury, tumors, blood-clotting problems, or blood vessel problems

Effects of a stroke

The effects of a stroke depend on **where** the stroke happened and **how much damage** occurred.

- The **right side of the brain** controls the **left side of the body**.
- The **left side of the brain** controls the **right side of the body**.

For example, a stroke on the left side of the brain may cause weakness or problems on the right side of the body.

If the **brain stem** is affected, it may involve both sides of the brain and affect both sides of the body.

Changes you may notice

A stroke can cause changes in how you move, think, or act. These may include:

- Weakness or no movement on one side of the body (**hemiplegia**)
- Acting quickly or impulsively
- Memory problems or trouble learning new things
- Not noticing one side of the body (**neglect**)
- Trouble swallowing
- Forgetting how to do daily tasks
- Trouble talking or understanding others (**aphasia**)
- Problems reading or writing
- Moving slowly or being overly cautious
- Loss of bowel or bladder control because you do not feel the urge to go

Know the warning signs of stroke — BE FAST

If you have had a stroke, your risk of another stroke is higher. Knowing the warning signs can save your life.

B — **Balance:** Sudden loss of balance or coordination.

E — **Eyes:** Sudden vision changes.

F — **Face:** One side of the face droops or looks uneven.

A — **Arms:** One arm feels weak or numb.

S — **Speech:** Slurred speech or trouble speaking or understanding.

T — **Time: Call 911 right away. Do not wait.**

Your Stroke Risk Factors

If you have had a stroke, your risk of having another stroke is higher. You can lower your risk by working with your doctor to manage the health problems that put you at risk. These problems are called **risk factors**.

Some risk factors **cannot** be changed, such as your age, sex, race, family history, or a past stroke or heart attack.

Other risk factors **can** be changed or controlled.

Your risk factors

Check the risk factors that apply to you:

- ❑ **High blood pressure.**
- ❑ **Diabetes.** Your hemoglobin A1C value is _____. Your goal is 4.0 to 6.0.
- ❑ **High LDL ("bad") cholesterol.** Your LDL level is _____. Your goal is **less than 70** if you have had a stroke.
- ❑ **History of a transient ischemic attack (TIA).** A TIA is a temporary blockage of blood flow to the brain. It does not cause permanent damage, but it is a warning sign.
- ❑ **Atrial fibrillation.** This is an irregular heartbeat that can cause blood in the heart to form clots.
- ❑ **Tobacco use.**
- ❑ **Alcohol use.**
- ❑ **Drug abuse.**
- ❑ **Being overweight.**
- ❑ **Being inactive or not getting enough exercise.**
- ❑ **Circulation problems**, such as carotid stenosis, coronary artery disease, or peripheral vascular disease.
- ❑ **Blood-clotting problems**, such as hemophilia or sickle cell anemia.
- ❑ **Other:** _____

Guidelines to Help Prevent a Stroke

Everyone has some risk for stroke. The good news is that there are many things you can do to lower your risk. These tips are based on guidance from the National Stroke Association.

Know your blood pressure

- High blood pressure is one of the main causes of stroke.
- Have your blood pressure checked often, or learn to check it yourself.
- Follow your doctor's advice if your blood pressure is high.
- Talk to 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

- "Bad" cholesterol is called LDL. If your LDL is over 70, ask your doctor how to lower it.
- High cholesterol raises your risk for heart disease and stroke.
- Eating healthy foods and being active can help.
- Some people may need medicine called **statins** to lower cholesterol.

Eat less fat

- Limit saturated fats and trans fats in your diet.
- Saturated fats are found in fatty meats and high fat dairy foods.
- Trans fats are partially hydrogenated oils and are found in cookies, crackers, baked goods, and many fried foods.
- Choose healthier fats from foods like olives, nuts, soybeans, corn, and safflower.
- A dietitian can help you make healthy food choices.

Keep your blood sugar in a healthy range

- If you have diabetes, your stroke risk is higher.
- Work with your doctor, nurse, diabetes educator, or dietitian to manage your blood sugar.

Find out if you have atrial fibrillation (AFib or AF)

- AFib is an irregular heartbeat. It can cause blood to pool in the heart and form clots.
- Your doctor may check for AFib. You may need to wear a heart monitor for a short time.
- If you have AFib, follow your doctor's plan to treat it.

Stop smoking and avoid tobacco

- Smoking doubles your risk for stroke.
- If you quit now, your risk will start to go down.
- Any tobacco use can increase your risk.

Limit alcohol

- **If you don't drink, don't start.**
- If you drink, limit it to:
  - Up to 2 drinks a day for people with male anatomy
  - Up to 1 drink a day for people with female anatomy
- Alcohol can interact with your medicines and can be harmful in large amounts.
- One drink equals:
  - 12 ounces of beer
  - 5 ounces of wine
  - 1½ ounces of liquor (vodka, rum, gin, whiskey)

Exercise every day

- Aim for at least 30 minutes of activity each day.
- A brisk walk, swimming, or other exercise can improve your health and lower your stroke risk.

Eat less salt

- Eating less salt (sodium) and fat can help lower your blood pressure.
- This also helps protect your heart.

Take blood thinners as ordered

- Some people need blood thinner medicine (anticoagulants).
- Take your medicine exactly as your doctor tells you.
- You may need regular blood tests.
- Call your doctor right away if you notice unusual bleeding or bruising.
- Tell your doctor about any supplements you take, such as fish oil or garlic, because they can thin your blood if taken in large amounts.

Ask if you have circulation problems

- Work with your doctor to find out if you have circulation or blood problems and how to control them.
- Fatty deposits can build up and block the arteries that carry blood from your heart to your brain. This can cause a stroke.
- Some blood conditions, such as sickle cell disease or severe anemia, can raise your risk of stroke if they are not treated.

Take your medicines as directed

- **Do not stop taking your medicines because you feel better or because you have no more refills.**
- Many medicines need to be taken long-term, even if you feel better.
- Read "Medicines After a Stroke" in this book for more information.

Checking Your Blood Pressure

Checking your blood pressure is quick and does not hurt. It is the only way to know if your blood pressure is high. Your doctor may ask you to check it often.

You can check your blood pressure:

- At your doctor's office
- At a pharmacy
- At home

If you check it at home, ask your doctor which device is best for you. Your insurance may pay for certain devices.

Types of blood pressure devices

Automatic Devices

- Cost more but are easier for people with hearing or vision problems.
- They can be sensitive to movement, so you must sit still.
- They may be harder to use correctly if the cuff is not in the right place.

Manual Devices (Dial or Aneroid)

- Cost less but take more practice to use.
- You need a stethoscope to hear your heartbeat.

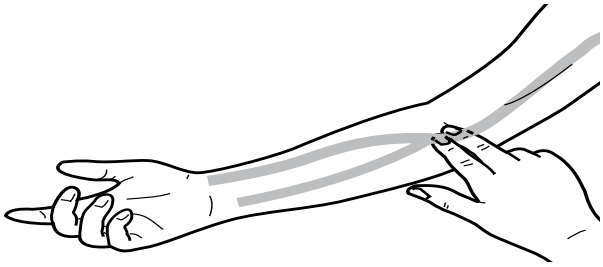
How to prepare

- Take your blood pressure at the same time each day.
- Rest for a few minutes before you start.
- Sit in a comfortable chair.
- Place your arm on a table with your palm facing up. Your arm should be level with your heart.
- Push your sleeve up. If your clothes are too tight on your arm, take the shirt off.

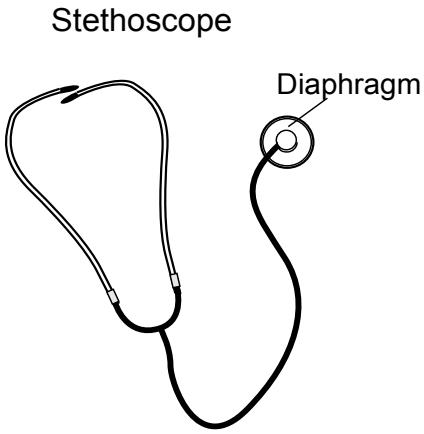
Using an automatic device

1. Wrap the cuff around your upper arm, just above your elbow.
2. Make sure the cuff is over the brachial artery (the inside part of your elbow). Most cuffs show you where to place it.
3. Press the start button. The cuff will tighten, then loosen.
4. When the numbers stop changing, your reading is ready.
5. Take 2 or 3 readings, one minute apart, to make sure the numbers are correct.

Using a manual device



1. Use two fingers to find your pulse on the inside of your elbow.
2. Wrap the cuff around your upper arm, about 1 inch above your elbow. It should be snug.
3. Close the valve on the bulb (not too tight).
4. Put the stethoscope earpieces in your ears. Place the flat part (diaphragm) over your pulse.



5. Pump the bulb until the pressure is about 30 points higher than your usual top number.
6. Slowly open the valve so the air comes out slowly.
7. Listen and watch the dial:
   - When you hear the first beat, write down that number. This is the top number (**systolic**).
   - When the beating stops, write down that number. This is the bottom number (**diastolic**).
8. Let all the air out and remove the cuff.
9. If the reading seems too high or too low, wait 1 minute and check again.

Image: Centers for Disease Control and Prevention

Normal Blood Pressure:

120 (systolic)
80 (diastolic)

Keeping track

Write down your readings, so you can share them with your doctor.

Blood pressure ranges

Blood Pressure Category	Systolic	Diastolic
Normal blood pressure	Less than 120	Less than 80
Elevated blood pressure	120-129	Less than 80
High blood pressure (hypertension) — Stage 1	130-139	80-89
High blood pressure (hypertension) — Stage 2	140 or higher	90 or higher
Hypertensive crisis (consult a doctor right away)	Higher than 180	Higher than 120

Ask your doctor or nurse what your personal blood pressure goal should be.

Understanding Diabetes

Diabetes raises your risk of having a stroke. It happens when the amount of sugar in your blood gets too high. Sugar (glucose) comes from the food you eat, and your body uses it for energy.

Insulin is a hormone made by the pancreas that helps move glucose from your blood into your cells.

Types of diabetes

- **Type 1 diabetes:** Your body does not make insulin.
- **Type 2 diabetes:** The most common type. Your body does not make enough insulin, or it cannot use insulin well, so too much glucose stays in your blood.
- **Prediabetes:** Your blood sugar is higher than normal, but not high enough to be called diabetes. It raises your risk of type 2 diabetes.
- **Gestational diabetes:** Diabetes that develops during pregnancy and raises the risk of getting type 2 diabetes later.

Over time, high blood sugar can harm your eyes, kidneys, nerves, and other parts of your body.

Warning signs of diabetes

People can experience diabetes in different ways. Common warning signs include:

- Urinating often
- Feeling very thirsty
- Losing weight without trying
- Blurry vision
- Cuts or scrapes that heal slowly
- Feeling tired
- Feeling hungry often
- Being irritable or grumpy

Some people may not notice any signs. About 1 in 5 people with diabetes do not know they have it.

How to check your blood sugar

A blood sugar meter is a small device that tells you how much sugar is in your blood. Some meters use a finger stick, while others sit on your skin or under it and check your blood sugar automatically.

Managing your blood sugar

Our staff will check your blood sugar while you are at Dodd Rehabilitation Hospital and adjust your medicines as needed. We will teach you and your caregivers how to manage your diabetes after you leave the hospital.

Diabetes classes are offered at The Ohio State University Wexner Medical Center. For more information, please call 614-685-0626.

Bowel Care

A stroke or brain injury can affect the part of the brain that helps you know when you need to have a bowel movement. This can lead to bowel problems. Your diet, lower activity level, and some medicines can also change how your stool looks and feels.

You may have:

- Trouble holding your stool (**incontinence**)
- Loose stool (**diarrhea**)
- Hard stool (**constipation**)

Working with your doctor and nurse to make a daily bowel care plan can help you avoid accidents and spend less time on bowel care.

Your bowel care program

Keep Track

- Write down when you have bowel movements and what they are like.

Have a Routine

- Choose a regular time to sit on the toilet or bedside commode, such as after a meal or shower.

Take Your Time

- It may take 15 to 45 minutes to have a bowel movement.
- Stay seated until you feel your bowel is empty.

Help Your Body Move Stool

- Gently rub your stomach to help stool move through your colon.

Go When You Feel the Urge

- Do not wait. Ask to use the toilet as soon as you feel the need to go.

Drink Enough Fluids

- Drink plenty of water — at least 8 glasses (8 ounces each) of water each day.

Eat More Fiber

- Choose fruits, vegetables, and whole grain foods.

Ask About Medicines

- Your doctor or nurse may suggest medicine to help you have regular bowel movements.

If you have incontinence

- Limit milk, fruit juice, raw fruits, beans, and peas. These foods can irritate your bowel and cause diarrhea.
- Learn to notice early signs that you need to go, such as feeling restless, cranky, gassy, or having nausea or cramps.
- Try sitting on the toilet or bedside commode for 20 to 30 minutes after meals.

If you have diarrhea

- Limit milk, fruit juice, raw fruits, beans, and peas. These foods can make diarrhea worse.

If you have constipation

- Stay active. Walk if you can. If you use a wheelchair, ask your healthcare team about exercises you can do.
- Drink prune juice each day.
- Use a small amount of K-Y Jelly, petroleum jelly, or mineral oil to lubricate your rectal opening if needed.
- Ask your doctor or nurse about using an enema, stool softener, or laxative to help soften stool and empty your bowel.

Medicines and bowel problems

- Some medicines can cause constipation or diarrhea.
- Talk to your doctor about the medicines you take.
- Ask what other options you have if a medicine is causing bowel problems.

Bladder Care

The brain helps control when your bladder holds urine and when it empties. A stroke or brain injury can affect this control and cause bladder problems.

You may have:

- **Incontinence:**
  - Not being able to control when urine comes out.
  - Not knowing when you need to use the toilet.
- **Retention:**
  - Not being able to fully empty your bladder.

Working with your doctor and nurse to make a daily bladder plan can help improve bladder control and lower your risk of a urinary tract infection (UTI). The **signs of a UTI** include:

- Pain or burning when you urinate
- Fever
- Feeling like you need to urinate often
- Pressure in your lower belly
- Urine that smells bad or looks cloudy or reddish
- Pain in your back or side below your ribs

Your bladder care program

Keep Track

- Write down when you urinate and how much comes out.

Use a Regular Schedule

- Use the toilet or bedside commode every 2 to 4 hours.
- Go to the bathroom before therapy or exercise.

Protect Your Skin

- If your skin gets wet from urine, wash with soap and water and rinse well.
- Keep your skin clean and dry to prevent irritation and sores.
- After cleaning your skin, use a moisturizer and a barrier cream (petroleum jelly, zinc oxide, or diaper cream) to protect your skin.

Drink Enough Fluids

- Drink at least 8 glasses (8 ounces each) of fluids each day to help flush bacteria from your urinary tract.
- Water and cranberry juice can help prevent urinary tract infections (UTIs).
- Do not drink anything 2 to 4 hours before bed.
- Empty your bladder before going to sleep to help prevent accidents.

Ask About Medicines

- Your doctor or nurse may suggest medicines to help with bladder control.

If you have incontinence

- Go to the bathroom to empty your bladder every 2 to 4 hours.
- Look at your bladder record to see if accidents happen around the same time each day. Try using the toilet 30 minutes before that time.
- Do your rehab exercises to help strengthen your pelvic muscles.
- Ask your doctor or nurse about incontinence products, such as pads or adult diapers.
  - Change them often, even if they feel dry, to protect your skin.
  - You can also use washable waterproof pads on beds or chairs.
- If going to the bathroom on a schedule is not helping you stay dry, or if it hurts to get to the toilet, talk with your healthcare provider. They can help you find and fix the things that make it hard to stay dry, so you can avoid bladder accidents.

If you have retention

- Take any prescribed medicines as directed by your doctor.
- Nursing staff may use a bladder scanner to check how much urine is left in your bladder after you go.
- You may need to use a catheter during the day. This is called intermittent catheterization, self catheterization, or straight cath.
  - A small tube is placed into the bladder to drain urine and then removed.

Deep Vein Thrombosis

Deep vein thrombosis, or DVT, happens when a blood clot forms in a large vein. This usually occurs in the legs when blood flow is slow. A piece of the clot can break off and travel to the lungs. This can cause a dangerous blockage called a pulmonary embolism.

Sitting or lying for long periods of time raises your risk for DVT. Treatment may include medicines to reduce pain and swelling, break up clots, or prevent new clots from forming.

Learning how to prevent DVT and how to spot early signs is important.

Preventing DVT

Compression Devices

Your doctor may have you wear compression wraps on your legs or feet. A small pump fills the wraps with air and then releases it. This gentle pressure helps your blood move through your veins.

Wear the compression devices while you are in bed or sitting in a chair for a long time.

Other Ways to Lower Your Risk

- Do leg and arm exercises every day to help your blood flow. Ask your doctor or therapist which exercise is best for you.
- Avoid sitting or lying in one position for long periods of time. Do not sit with your legs crossed or with constant pressure on the backs of your knees.
- If your legs tend to swell, prop them up on a stool when sitting.
- Avoid smoking and tobacco use.
- Take anticoagulant medicine (blood thinners) if your doctor prescribes them.
- Wear loose-fitting clothes.
- Drink at least 8 glasses (8 ounces each) of liquid each day, unless your doctor tells you to limit fluids.

Signs of DVT

Many people have no symptoms. When symptoms do appear, they usually affect the leg with the clot. Common signs include:

- Swelling
- Pain or tenderness
- Warmth in the swollen or painful area
- Redness of the skin

Signs of a pulmonary embolism

A pulmonary embolism happens when a clot travels to the lungs. **This is an emergency.** Common signs include:

- Shortness of breath
- Pain when taking a deep breath
- Coughing up blood
- Rapid breathing
- Faster than normal heartbeat

If you have any of these signs, get medical help right away.

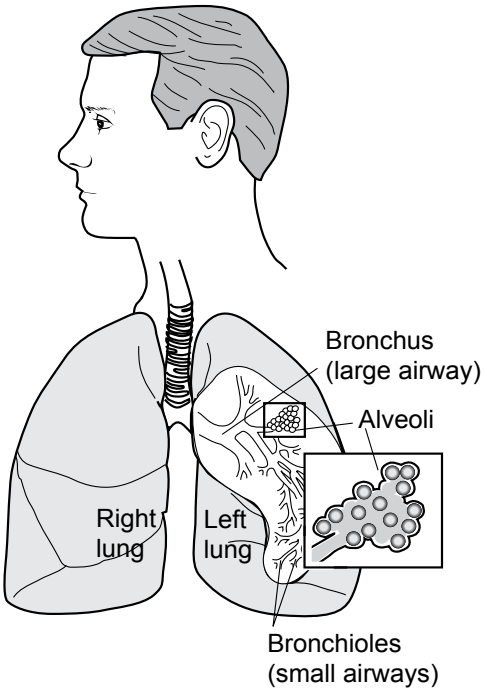
Pneumonia Care and Prevention

About pneumonia

Pneumonia is an infection or inflammation of the lungs. When you have pneumonia, the air sacs or breathing tubes in your lungs can fill with mucus or fluid. This makes it harder to breathe.

Pneumonia is usually caused by bacteria or viruses. It is **not** usually spread from one person to another.

People who have had a stroke may have trouble swallowing. Food or liquid can go down the wrong way into the lungs. This can cause harmful bacteria to grow and lead to a lung infection called **aspiration pneumonia**.



Signs of pneumonia

- Shortness of breath
- Chest pain when taking a deep breath
- Fever
- Cough with mucus that is green or rust-colored

Tell your healthcare team right away if you notice these signs.

Treatment

Your treatment will depend on your overall health and how your body responds to medicine.

Medicines

- **Antibiotics** may be used for bacterial pneumonia.
- **Antiviral medicines** may be used for viral pneumonia.
- Other medicines may help reduce mucus in the lungs, to help with cough, to reduce chest discomfort, or to reduce fever.

Incentive Spirometer

You may be asked to use a device called an incentive spirometer.

- It helps improve airflow and reduce fluid in your lungs.
- You breathe in through the tube, slowly expanding your lungs in your chest. Try to raise the marker as high as you can.
- You may use it every few hours to help keep your lungs healthy and to check how well they are working.

Prevention

You can lower your risk of pneumonia by following these steps:

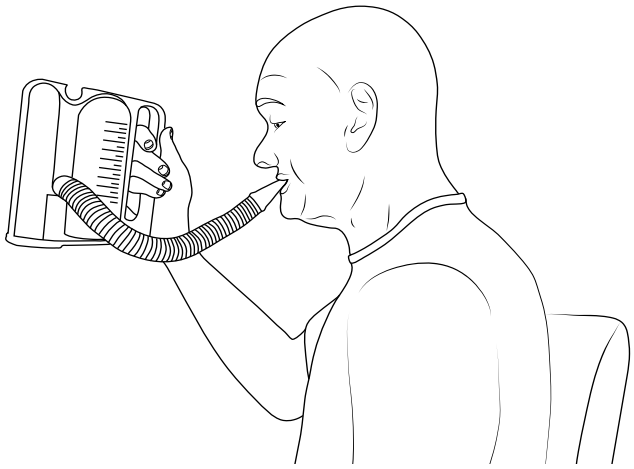
- Use your incentive spirometer as your doctor directs.
- Take slow, deep breaths and then cough several times to clear mucus. Spit mucus into a tissue.
- Brush and floss your teeth every morning and evening to reduce bacteria in your mouth.
- Sit upright when you eat. Follow the tips your SLP or healthcare team give you to help you eat safely.
- Drink enough fluids to stay hydrated.
- Stay active if you can, and rest between activities.

How to Use an Incentive Spirometer

An incentive spirometer (also called a breathing exerciser) helps you take slow, deep breaths. This opens the air sacs in your lungs and lowers your chance of getting pneumonia or other breathing problems. You can also use it if you have a tracheostomy tube (trach tube).

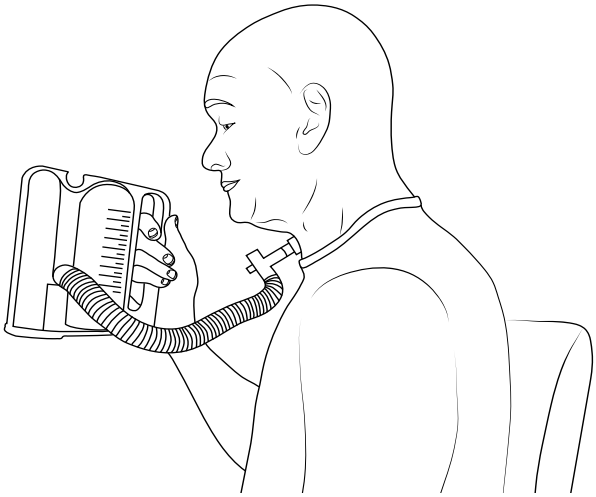
Your goal amount is _____ mL.

Steps for use



1. **Sit up straight** if you can. Sitting on the edge of your bed or chair may help.
2. **Hold the spirometer upright.**
3. **Breathe out.**
4. Put the **mouthpiece in your mouth** and close your lips tightly around it.
5. **Breathe in slowly and deeply** through your mouth.
   - The piston inside the spirometer will rise as you breathe in.
   - Try to keep the green flow chip in the "smiley face" range. This helps you breathe in at the right speed.
6. When you cannot breathe in any more, **hold your breath for 3 to 5 seconds**.
7. **Exhale normally.**
8. Remove the mouthpiece and **rest for a few seconds** while the piston returns to the bottom.
9. **Repeat 10 times every hour**, or as your doctor tells you.
   - If you feel dizzy or light-headed, slow down and take more time between breaths.
10. After the 10 breaths, **take 1 more deep breath and cough** to help clear mucus from your lungs.

Using the incentive spirometer with a tracheostomy



1. A one-way valve called a "**T-piece**" will be placed on the end of the tubing. The open side of the T-piece connects to your trach tube.
2. **Sit up straight.**
3. **Hold the spirometer upright.**
4. Your nurse or respiratory therapist will tell you what breathing goal is right for you.
5. Attach the **T-piece** to your trach tube.
6. **Breathe out normally.**
7. **Inhale slowly and deeply** through your trach tube.
   - The piston will rise as you breathe in.
   - The spirometer will show if you are breathing in too fast.
8. Try to raise the piston as high as you can. Read the number at the top of the piston.
9. When you cannot breathe in any more, **hold your breath for 3 to 5 seconds**, then breathe out slowly.
10. **Rest and breathe normally** for a few breaths.
11. Set the goal indicator at the level you reached.
12. Repeat until you have taken **10 deep breaths**.
    - Slow down if you feel dizzy or light-headed.
13. After 10 breaths, **cough to clear mucus** from your lungs.
14. Repeat this cycle **every 1 or 2 hours**, or as your doctor orders.

Helpful hints

- Take your **pain medicine** as prescribed. It is harder to take deep breaths when you are in pain.
- Keep your spirometer **within easy reach**, so you remember to use it.
- Continue using your spirometer at home to help keep your lungs clear while you recover.

Medicines After a Stroke

Medicines can help treat stroke and other health problems that raise your risk for another stroke. Your doctor, nurse, or pharmacist can answer any questions you have about your medicines.

Important information about your medicines

- **Take your medicines exactly as directed.**
- **Do NOT stop taking a medicine on your own.**
  - Do not stop because you feel better.
  - Do not stop because you ran out.
  - Always check with your doctor first.
- Many stroke medicines need to be taken **long-term**.
- Follow up with your primary care doctor to get refills on time.
- Tell your doctor or nurse if you take over-the-counter medicines, vitamins, or herbal supplements. These can interact with your prescription medicines.
- If you notice side effects, tell your doctor or nurse. A side effect is an unwanted or unexpected reaction to a medicine.

Antiplatelet medicines

These medicines help keep your blood from forming clots. They make platelets (tiny cells in your blood) less likely to stick together. These medicines are often used after a stroke, heart attack, or after a stent is placed.

Important

- **Do not stop taking antiplatelet medicine without talking to the doctor who prescribed it.** Stopping it suddenly can increase your risk of a blood clot or a blocked stent.

Possible Side Effects

- Allergic reaction
- Black, bloody, or tar-like stools
- Nausea or vomiting
- Stomach pain
- Easy bruising
- Dizziness or confusion
- Hallucinations
- Hearing loss or ringing in the ears

Common Antiplatelet Medicines

- Aspirin (Bayer, Bufferin, Ecotrin, St. Joseph, or other generic brands)
- Clopidogrel (Plavix)
- Ticagrelor (Brilinta)
- Other _____

Statins (HMG-CoA reductase inhibitors)

Statins are medicines that help lower cholesterol. They work by slowing down how much cholesterol your liver makes.

- They lower “bad” cholesterol (LDL).
- They raise “good” cholesterol (HDL).
- Lowering bad cholesterol helps lower your risk of heart disease and stroke.

You should have your cholesterol checked with a blood test once or twice a year.

Possible Side Effects

- Muscle pain or weakness
- Upset stomach
- Elevated liver enzymes (found on blood tests)

Liver Safety

Your doctor will check your liver function before you start a statin. Call your doctor if you notice signs of liver problems, such as:

- Feeling very weak or tired
- Loss of appetite
- Pain in the upper belly
- Dark urine
- Yellowing of the skin or eyes

Common Statin Medicines

- Atorvastatin (Lipitor)
- Lovastatin (Mevacor)
- Pravastatin (Pravachol)
- Rosuvastatin (Crestor)
- Simvastatin (Zocor)
- Other _____

Angiotensin-converting enzyme (ACE) inhibitors

ACE inhibitors help relax and widen your blood vessels. This makes it easier for blood to flow through your body. These medicines:

- Lower blood pressure
- Reduce the workload on your heart
- Help protect your kidneys
- May be used after a heart attack or stroke

Possible Side Effects

- Dizziness
- Weakness
- Dry cough
- Changes in taste

Get medical help right away if you have swelling of your face, lips, or tongue.

Common ACE Inhibitor Medicines

- Benazepril (Lotensin)
- Captopril (Capoten)
- Enalapril (Vasotec)
- Lisinopril (Prinivil, Zestril)
- Ramipril (Altace)
- Other _____

Angiotensin II receptor blockers (ARBs)

ARBs are medicines used when a person cannot take an ACE inhibitor. They also help relax and widen blood vessels. These medicines:

- Lower blood pressure
- Reduce strain on the heart
- May be used after a heart attack or stroke

Possible Side Effects

- Dizziness
- Weakness

Get medical help right away if you have swelling of your face, lips, or tongue.

Common ARB Medicines

- Candesartan (Atacand)
- Losartan (Cozaar)
- Valsartan (Diovan)
- Other _____

Beta blockers

Beta blockers are medicines that help your heart relax. They block certain stress hormones in your body, like adrenaline. This slows your heart rate and helps lower your blood pressure. These medicines are used to treat:

- High blood pressure
- Heart failure
- Angina (chest pain)
- They may also be used after a heart attack or stroke

Possible Side Effects

- Dizziness
- Slow heart rate
- Feeling tired
- Shortness of breath when first starting the medicine
- Sexual problems

Common Beta Blocker Medicines

- Atenolol (Tenormin)
- Bisoprolol
- Carvedilol (Coreg)
- Metoprolol (Toprol-XL, Lopressor)
- Propranolol (Inderal)
- Other _____

Calcium Channel Blockers

Calcium channel blockers are medicines that help lower blood pressure. They work by slowing the heart rate or by relaxing and widening the blood vessels. This makes it easier for your heart to pump blood. These medicines are used to treat:

- High blood pressure
- Angina (chest pain)
- Fast heart rate

Possible Side Effects

- Dizziness
- Feeling light-headed
- Shortness of breath
- Slow heart rate
- Constipation

Common Calcium Channel Blocker Medicines

- Amlodipine (Norvasc)
- Diltiazem (Cardizem, Dilacor, Tiazac)
- Nifedipine (Procardia)
- Verapamil (Calan, Isoptin, Covera)
- Other: _____

Anticoagulants

Anticoagulants are blood thinners. They make it take longer for your blood to clot. This helps prevent new blood clots from forming.

Possible Side Effects

- Bleeding
- Diarrhea or constipation
- Bruising
- Dizziness
- Headaches
- Indigestion
- Skin rashes

Call 911 right away if you have severe bleeding.

Common Anticoagulant Medicines

- Apixaban (Eliquis)
- Dabigatran (Pradaxa)
- Dalteparin (Fragmin)
- Enoxaparin (Lovenox)
- Fondaparinux (Arixtra)
- Heparin
- Rivaroxaban (Xarelto)
- Warfarin (Coumadin, Jantoven)
- Other _____

Nimodipine for aneurysmal subarachnoid hemorrhage

Nimodipine is a medicine used after bleeding in the brain caused by a burst blood vessel (aneurysmal subarachnoid hemorrhage). It helps lower the chance of brain damage.

Nimodipine is a type of calcium channel blocker. It is often given for 21 days after the bleeding event.

Possible Side Effects

- Dizziness
- Fast, pounding, or uneven heartbeat
- Feeling tired or weak
- Diarrhea
- Nausea
- Headache

Nimodipine is sold under the brand names **Nimotop** and **Nymalize**.

Taking Your Medicines

As part of your rehab, you will learn how to take your own medicines safely. This program has **3 steps**, and you will complete them in order. If your medicines are more complicated, your nurse and the hospital pharmacy will work closely with you until you can manage them on your own.

Learning how to take your medicines

Step 1: Learn About Your Medicines

For each medicine, you will learn:

- The name of the medicine
- How much you should take (the dose)
- When you should take it
- Why you need the medicine

Your nurse will give you printed information about each medicine. This information explains:

- Possible side effects
- Foods or other medicines that may affect how your medicine works
- What to do if you miss a dose

Step 2: Fill Out Your Medicine Record

Your nurse will give you a medicine record to help you keep track of your medicines. Together, you will write down:

- The name of each medicine
- The dose (how much you take)
- The time or time(s) you take it
- The reason you take it

When you feel ready to fill out the medicine record on your own, let your nurse know.

Step 3: Take Your Medicine on Your Own

When it is time to take your medicines:

1. Call your nurse.
2. When your nurse brings your medicines, check them off on your medicine record as you take them.

This helps you practice taking your medicines safely and correctly.

Aphasia

What is aphasia

Aphasia is a problem with language. It happens when the parts of the brain that control language are damaged. This damage often occurs after a stroke. It can also be caused by a traumatic brain injury (TBI), a tumor, or other brain illnesses.

Aphasia can affect:

- Speaking
- Understanding what others say
- Reading
- Writing

Aphasia looks different from person to person. One person may read better than they can talk. Another may write better than they read.

Aphasia may last a short time or be long-term. Recovery depends on how bad the brain injury is, the person's age, and how well they do in therapy.

Types of aphasia

Non-Fluent Aphasia

A person with non-fluent aphasia has trouble getting words out. They may:

- Speak slowly or with long pauses
- Struggle to find the right word
- Understand more than they can say
- Speak in single words or short phrases
- Sometimes be unable to speak at all

They often know what they want to say but cannot say it. This can be very frustrating.

Fluent Aphasia

A person with fluent aphasia can speak easily, but the words may not make sense. They may:

- Use real words in the wrong way
- Use made-up words
- Not understand what others say
- Not realize their speech is confusing

This can lead to frustration for both the speaker and the listener.

Other speech and language problems

Word or Sound Changes

A person may:

- Say a sound that has no meaning (“lat” instead of “bat”)
- Say a word that changes the meaning (“mate” instead of “date”)
- Say a word that is not related (“table” instead of “map”)
- Say a word that is close in meaning (“ladle” instead of “spoon”)

Repetition (Perseveration)

A person may repeat the same word or idea over and over. For example, if asked “What do you drive?” they may say “car,” and then keep saying “car” even when asked different questions.

Naming Problems

A person may not be able to name common objects, even though they know what the object is and how it is used.

Oral Apraxia

A person may have trouble putting sounds in the right order to say a word. They may show tension in the face or neck or make grimacing movements while trying to speak.

Ways to help someone with aphasia

- **Treat the person as an adult.** Do not use baby-talk or speak as if they are not in the room.
- **Use familiar and interesting materials.** This helps keep the person engaged.
- **Limit distractions.** Turn off the TV or radio when talking.
- **Use a communication board or pictures.** The person can point to what they need or use pictures to help find the right word.
- **Give simple directions.** Break long instructions into small steps. Allow extra time for the person to respond.
- **Encourage writing.** If they are able, writing may help them express their thoughts.
- **Speak slowly and clearly.** Pause between ideas and use simple phrases. Stress the most important words.
- **Ask one question at a time.** Yes/no questions can be especially helpful.
- **Offer sentence starters.** For example: “I want a drink of _____.”
- **Give word choices.** This can help the person find the right word.
- **Ask for descriptions.** If they cannot name an object, ask them to tell you something about it.
- **Be honest.** If you do not understand, say so. Repeat what you did understand and ask them to try again.

A speech language pathologist (SLP) can give you more ideas and activities. Remember: **aphasia affects language, not intelligence**.

Apraxia

Apraxia is a motor-planning disorder. This means the brain has trouble sending the right messages to the muscles. The person knows what they want to do or say, but their body does not follow the plan.

When apraxia affects communication, a person may:

- Have trouble saying what they want to say
- Say sounds incorrectly
- Be unable to speak at all in some cases

Types of apraxia

Apraxia of Speech

A person may:

- Have trouble speaking
- Be unable to say certain words or sounds
- Say sounds that are unclear or mixed up

Oral Apraxia

A person may:

- Have trouble moving the muscles of the face and mouth when asked
- Be unable to follow simple commands like “stick out your tongue”

What apraxia looks like

With all types of apraxia:

- The person understands what they want to do
- They want to complete the task
- They are unable to do it when asked

A person may be able to say automatic or familiar words such as “Hi,” “Fine,” or “Okay” when they are not thinking about it. But they may not be able to say the same words on command.

They may:

- Say distorted speech sounds
- Use nonsense words
- Have trouble putting sounds in the right order

A person with apraxia may still use their face and mouth normally for automatic actions like eating, yawning, or licking their lips. In severe cases, they may not be able to make sounds with their vocal cords.

Ways to help someone with apraxia

- **Use fun blowing activities.** Try bubbles, noisemakers, or pinwheels.
- **Practice simple mouth movements.** Examples include opening and closing the mouth, puckering, smiling, and moving the tongue.
- **Sing familiar songs.** Songs like "Happy Birthday" or the alphabet song can help speech flow more easily.
- **Practice familiar sequences.** Count numbers or say the days of the week and months of the year.
- **Use fill-in-the-blank pairs.** For example: "up and ____" or "yes and ____."
- **Use fill-in-the-blank phrases.** For example: "say please and thank ____" or "don't cry over spilled ____."

Your loved one's speech-language pathologist (SLP) will explain which strategies are best and may give you activities to practice at home.

Communication with Right Brain Injury

A stroke or other brain injury can sometimes damage the **right side of the brain**. When this happens, a person may have problems with **thinking skills**, even though they may not realize anything is wrong. These changes can affect communication, attention, and daily activities.

Common problems

Problems Expressing and Understanding Information

- Talks a lot but does not get to the main point
- Brings up topics that seem unrelated
- Has trouble following long or complex directions
- Has difficulty understanding jokes, indirect requests, or sarcasm

Changes in Social Interaction

- Loses eye contact
- Changes the topic suddenly
- Interrupts others
- Talks too much or very little
- Uses a flat tone of voice or shows little facial expression

Other Common Difficulties

- Not noticing things on the left side
- Trouble reading or writing
- Difficulty paying attention
- Trouble keeping track of time
- Forgetting recent events
- Forgetting steps in daily tasks
- Acting without thinking or showing poor judgment

Ways to help

Conversation

- Reduce distractions — turn off the TV or close the door
- Sit or stand on the person's left side
- Get their attention before speaking and remind them to look at you
- Use gentle reminders to stay on topic
- Ask open-ended questions (not just yes/no)
- Use gestures or verbal cues to show when it is your turn to talk

Visual Skills

- Use reminders to help the person notice landmarks
- Encourage scanning from left to right
- Use a finger or index card to help focus on one line at a time when reading

Thinking Skills

- Give extra time to learn new information
- Use mental pictures or associations to help memory
- Describe ideas when the person cannot find the right word
- Talk through the steps of an activity
- Remind the person to slow down
- Stay calm and relaxed during conversations

Orientation

- Use clocks and calendars to keep track of time and date
- Keep a daily schedule or use checklists
- Point out familiar places or landmarks

Vision and Perception Changes

How the visual system works

Vision problems may not be the first change you notice after a brain injury, but they can make it harder to move around and do everyday tasks.

Your **visual system** includes:

- **Eyes**
- **Nerves** that carry messages from the eyes to the brain
- **Muscles** that move the eyes, adjust the pupils, and open and close the eyelids
- **Parts of the brain** that help you understand what you see

Your brain helps you see by:

- Making sure both eyes move together
- Storing visual information in memory
- Helping you adjust your movements based on what you see

Vision changes after a stroke

Side of Injury

Vision changes depend on where the stroke happened. Each eye takes in information from both the left and right sides. If the stroke is on the **right side of the brain**, it often affects vision on the **left side**, and vice versa.

Vision has **2 main parts**:

1. Eye movement and taking in visual information
2. Processing and understanding what you see

A stroke can affect 1 or both parts.

Eye Movement and Taking in Visual Information

This first step involves how your eyes move and how much visual information they collect. Problems may include:

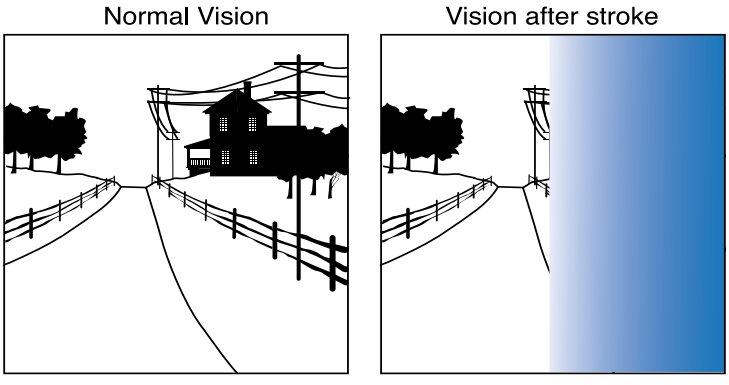
Visual Field Cut (Hemianopsia)

Your **visual field** is everything you can see when both eyes are open.

A **visual field cut** means you cannot see part of that area.

Common problems include:

- Not seeing things on one side
- Losing half of the visual field in each eye



Muscle Weakness

The **brain stem** controls the muscles that move your eyes. If these muscles are weak, you may:

- Have trouble following moving objects
- Have difficulty reading
- Notice that your eyes do not move smoothly together

Double Vision (Diplopia)

If the stroke affects the cerebellum or brain stem, you may see double. This happens when the eye muscles cannot keep the eyes lined up. Double vision can make it hard to:

- Walk safely (the floor may look doubled)
- Eat or drink (you may see 2 of everything)

Processing and understanding what you see

The second part of vision is **visual processing**, also called **perception**. This is how the brain makes sense of what the eyes see.

Visual Neglect or Inattention

This is a common problem after a stroke. It happens when the brain does not pay attention to one side of the body or space. It is **not** a problem with the eyes — it is a problem with the brain's attention.

This is most common after a **right-brain injury**, which affects the **left side**. A person may:

- Turn their head or eyes only to the right
- Not notice people or objects on the left
- Miss items on the left side of a meal tray
- Bump into things on the left

Neglect can also happen after a **left-brain injury**, affecting the **right side**, but it is often less noticeable.

Awareness and practice can help improve visual neglect.

Help for patients with visual problems

A team approach often works best. Your healthcare team may include:

Occupational Therapist (OT)

An OT will:

- Complete a vision screening
- Watch how you do daily tasks like dressing, eating, and moving
- Teach you ways to compensate for vision loss
- Provide exercises to help strengthen eye muscles or improve scanning

Neuro-Ophthalmologist

A medical doctor who specializes in:

- Vision problems caused by brain or nerve injuries
- Eye diseases
- Eye surgery

Optometrist

A specialist who:

- Checks how your vision affects daily activities
- Diagnoses and treats eye conditions
- May recommend lenses, prisms, low-vision tools, or vision therapy

Balance Changes

What is balance

Balance is your body's ability to stay upright and steady while you move or stay still. Good balance helps keep you from falling.

Your balance depends on several body systems working together. These systems send signals to your brain, and your brain sends signals back to your muscles. A stroke can interrupt these signals and cause balance problems.

How your body controls balance

Your body uses **3 systems** to help you stay balanced:

1. Visual System (Sight)

Your eyes help your brain understand where you are in your surroundings. Sight helps you notice obstacles, judge distance, and move safely.

2. Vestibular System (Inner Ear)

Sensors in your inner ear tell your brain:

- How your head is moving
- Which direction you are turning
- How fast you are moving

This helps your brain know how your head and body are positioned.

3. Somatosensory System (Body Sensors)

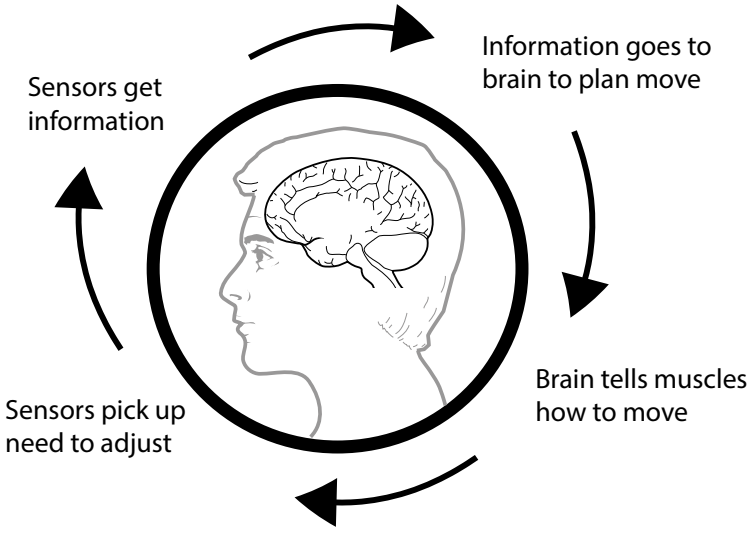
These sensors are found in your skin, muscles, and joints. They:

- Tell your brain where your arms, legs, and trunk are
- Sense movement and direction
- Help your brain adjust your posture and steps

Example:

When you stand on sand, the sensors in your feet feel the soft surface and the sinking of your feet. They send this information to your brain. Your brain then tells your leg and trunk muscles how to move, so you stay balanced.

These signals travel back and forth between your body and brain very quickly, many times each second.



Information Loop

How balance can change after a stroke

A stroke can affect balance by:

- Injuring one of the balance systems
- Damaging the connections between the systems and the brain
- Directly injuring the brain itself

Common Balance Problems After Stroke

- **Not seeing clearly:** If your vision is blurry or limited, it becomes harder to react to what is around you.
- **Not sensing position:** If your brain cannot tell where your head or trunk is, it may not send the right signals to keep you upright.
- **Not feeling motion:** If you cannot sense how your arms or legs are moving, your brain may not know where to place your foot for the next step.
- **Trouble processing information:** Your brain must take in information from your eyes, ears, and body and make a plan to keep you steady. If the part of the brain that does this is injured, balance becomes harder.
- **Trouble sending messages:** Your brain may also have difficulty sending clear signals back to your muscles, making it harder to stay balanced.

Positioning for Impaired Mobility

Good positioning helps you relax, reduces pain, and prevents muscle tightness. It also protects your skin and joints. The guidelines below show safe ways to sit and lie down after a stroke.

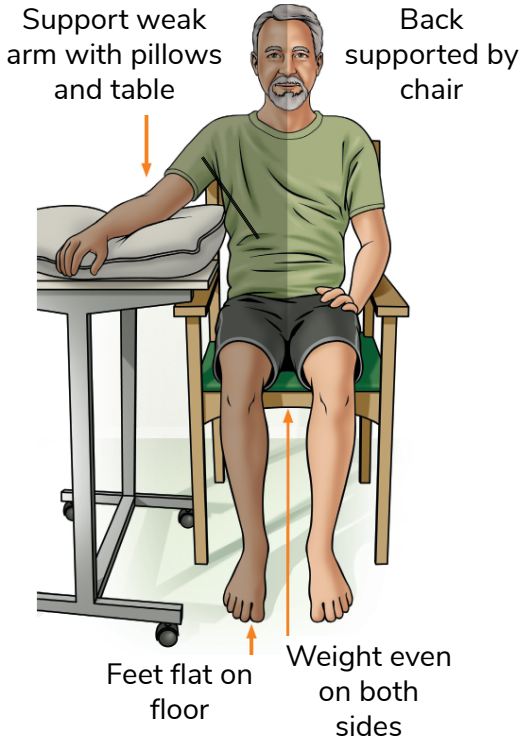


Image used with permission from Stroke Foundation of New Zealand, www.stroke.org.

Sitting up

These steps help you sit safely and comfortably:

- **Sit up straight** and keep your weight even on both sides. Try not to slouch.
- **Scoot your buttocks all the way back** in the chair or wheelchair.
- Keep your **hips and knees at a right angle** (like the shape of an "L").
- Keep your **feet flat on the floor** or on footrests.
- Keep your **head and body lined up** with your hips. A pillow or wedge may help keep your weight even.

Positioning the Weak Arm

- Support the weak arm with pillows, a table, or a half-lap board.
- Place the weak shoulder slightly forward, the elbow away from the body, and the forearm forward.
- Support the wrist and hand, keeping the palm facing down.
- A rolled-up washcloth in the hand can help keep the fingers open and protect the skin in the palm.

Skin Care

- Check the skin often for redness, bruising, or breakdown.

Sitting up in a wheelchair

Use the same steps as sitting in a regular chair, plus:

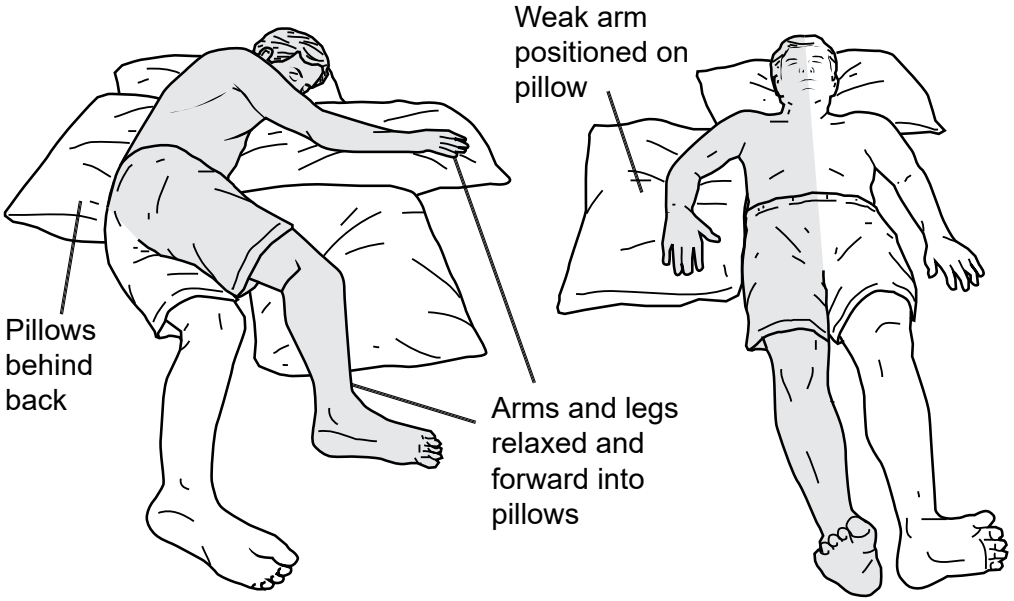
- Use a lap tray to support the weak arm.
- Keep the foot on the weak side on the footrest while the wheelchair is moving.

Lying down

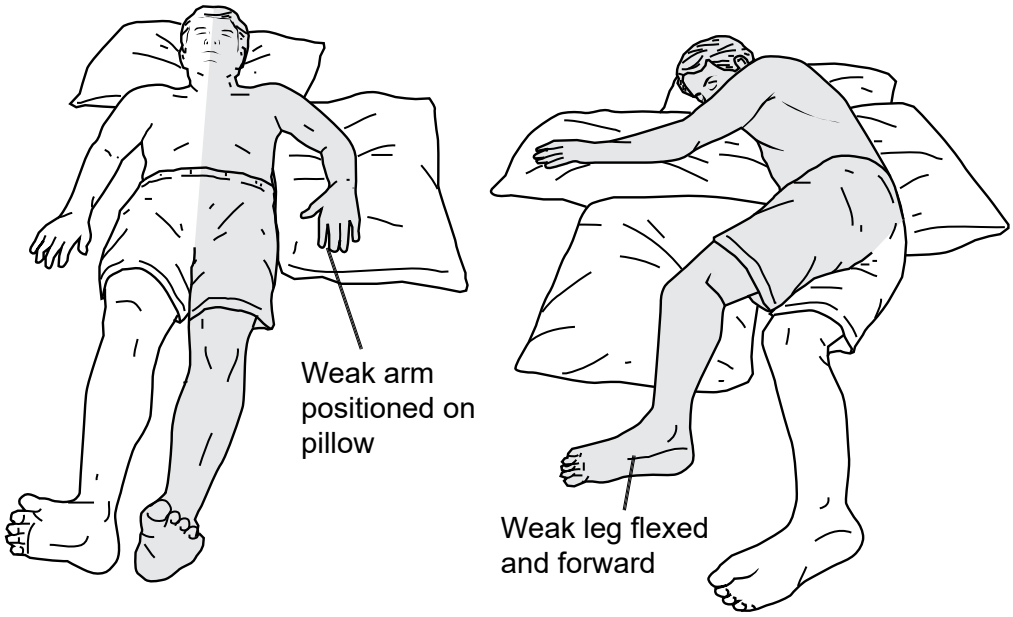
These steps help you rest safely and prevent pain and tightness:

- Place **flat pillows under your head and weak arm** for support.
- Keep the **weak shoulder slightly forward**, the **elbow away from the body**, and the **forearm forward**.
- Support the **wrist and hand** on a pillow with the **palm facing down** and the **fingers straight**.
- Do not let the hand droop or form a fist. A **rolled-up washcloth** can help keep the fingers open.
- Keep your **hips and knees bent** for comfort and support.
- **Do not stay in one position longer than 2 hours.**
- Check the skin often for **redness, bruising, or breakdown**.

Positions for impaired mobility on right side



Positions for impaired mobility on left side



Saving Energy and Making Work Easy

These tips can help you use less energy, prevent fatigue, and make daily tasks safer and easier.

General tips

- Sit when you can. Sitting uses less energy than standing.
- Use your arms instead of your legs when possible. Leg work takes more effort.
- Wait 30 minutes after eating before doing a task. Your heart works harder right after a meal.
- Avoid extreme temperatures. Do not do activities in very hot or very cold weather. Extreme heat or cold can stress your heart.

Pace yourself to save energy

- Try to get **6 to 8 hours of sleep** each night.
- **Rest 20 to 30 minutes twice a day.** If you feel tired, stop and rest for 15 minutes, even if you are not done with your task.
- **Alternate easy and hard tasks.** Spread difficult tasks throughout the day.
- **Focus on what you can do and save energy** for the most important activities.
- **Ask for help** when a task is too demanding.
- **Hire help** if needed for chores or heavy work.
- **Manage stress.** Relaxation exercises, such as guided imagery, can help you stay calm and conserve energy.

Use labor-saving methods and devices

Organize Your Space

- Keep items where you use them.
- Store things you use often at **chest height** to avoid bending or stretching.
- Keep grooming items, like shaving supplies or makeup, near the sink and mirror.

Reduce Extra Work

- Use a **dishwasher** instead of washing dishes by hand.
- Wear **clothes that do not need ironing**.
- Choose **automatic or electric appliances**, such as:
  - Electric can opener
  - Mixer
  - Clothes dryer
  - Riding mower
  - Electric saw
  - Dishwasher
- Use **cruise control** when driving to reduce effort.

Make Tasks Easier

- Use **wheels** to move items — such as a garbage can with wheels or a cart for cleaning supplies or laundry.
- Use **both hands** to lift or move objects.
- Use **proper body mechanics**:
  - Slide objects instead of lifting them
  - Do not lean forward without support — rest your elbows on a counter
  - Bend at your knees, not your back, when lifting

Use Helpful Aids

- Wear **slip-on shoes** to avoid bending.
- Use tools like a **long-handled shoehorn** or **sock aid**.
- Use a **shower bench** to sit while bathing.
- Use an **elevated toilet seat** to make standing easier.
- Install **grab bars** in the shower for stability.
- Use a **long-handled sponge** to reach legs and back.
- Try a **dressing stick** to pull on clothing without twisting.
- Use a **button hook** or **zipper pull** to make fastening easier.

Dysphagia After Stroke

Understanding swallowing problems

After a stroke, you may have trouble eating or drinking. This is called **dysphagia**, which means it is hard to safely move food or liquid from your mouth to your stomach.

A stroke is one of the most common causes of dysphagia.

Why swallowing problems matter

Swallowing problems can lead to:

- Food or liquid going into the airway (**penetration** or **aspiration**)
- A higher risk of choking
- Poor nutrition
- Dehydration (not having enough water or fluids)

How swallowing works

Swallowing happens in **5 stages**. A stroke can affect one or more of these stages.

1. Preparing to Swallow (Anticipatory Stage)

Normal process:

- Your body gets ready to eat or drink.
- You pick up utensils and bring food or drink to your mouth.
- Your brain sends signals to start chewing.

After a stroke, you may have:

- Trouble picking up utensils or bringing food to your mouth.
- Trouble paying attention while eating.
- Trouble seeing food or drink because of vision changes.

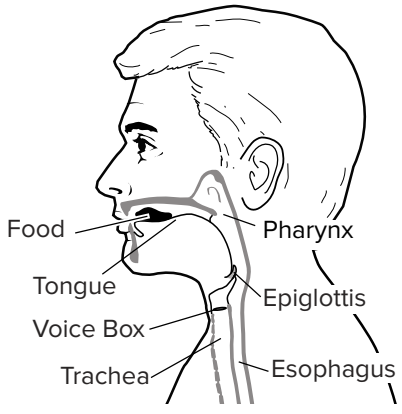
2. Oral Preparation Stage

Normal process:

- You chew your food.
- Food or liquid mixes with saliva and forms a small ball called a **bolus**.
- Your lips, tongue, jaw, and cheeks work together.

After a stroke, you may have:

- Trouble taking food off a spoon or fork.
- Trouble using a straw or drinking from a cup.



Oral Preparation Stage

- Food, liquid, or saliva leaking from your mouth.
- Trouble chewing.
- Biting your cheek or lip.
- Food spreading around the mouth.
- Food getting stuck between your cheek and gums (**pocketing**).

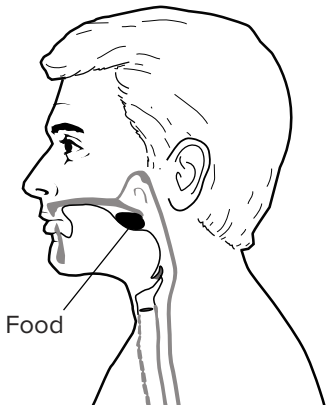
3. Oral Transit Stage

Normal process:

- Your tongue moves the food or liquid to the back of your mouth.

After a stroke, you may have:

- Weakness that makes it hard to move food back.
- Needing several swallows to clear food or liquid.
- Food or liquid left in your mouth after swallowing.
- Food or drink falling into your throat too early, which can increase the risk of aspiration.



Oral Transit Stage

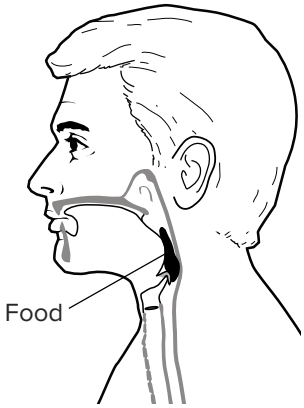
4. Pharyngeal Stage

Normal process:

- Food enters the upper throat.
- A small flap called the **epiglottis** closes to protect your airway.
- Your tongue and throat muscles squeeze food down toward the esophagus.

After a stroke, you may have:

- Delayed swallowing, which increases the risk of aspiration.
- No feeling when food or liquid goes “down the wrong way” (**silent aspiration**).
- Weak throat muscles that make it hard to move food through the throat.



Pharyngeal Stage

5. Esophageal Stage

Normal process:

- Food or liquid moves through the esophagus into the stomach.

After a stroke, you may have:

- Changes in the muscle that opens into the esophagus.
- Trouble moving food or liquid through the esophagus.

Checking for swallowing problems

When you arrive at the hospital, a nurse or doctor will check your swallowing. They may:

- Ask questions about your swallowing
- Look at how your mouth muscles move
- Give you a small amount of liquid to drink

If they think you may have dysphagia, you will see a **speech language pathologist (SLP)**. An SLP is trained to help with swallowing and communication.

The SLP may:

- Ask about your medical history
- Look at your mouth and tongue movement
- Watch you eat or drink different foods and liquids
- Recommend more swallowing tests if needed

Treating swallowing problems

Your treatment plan will depend on how safely you can swallow. Treatment may include:

- Exercises to strengthen your face, tongue, and throat
- Learning safer ways to eat and drink
- Changing how food is prepared or avoiding certain foods
- Adding thickeners to liquids to make them easier to swallow
- Using a feeding tube if swallowing is not safe

You may continue working with an SLP after you leave the hospital.

Thickened Liquids for Safer Swallowing

Your speech language pathologist (SLP) or doctor may ask you to drink thickened liquids to help you swallow more safely. Some liquids are already thick. Others can be made thick by adding a powder or gel.

Thickened liquids can help you:

- Have better control when swallowing.
- Lower the chance of liquid going down the wrong way into your windpipe (trachea). This can help prevent lung infections.

Levels of liquid thickness

Your SLP will tell you which thickness level is safest for you. This depends on your swallowing problem, also called **dysphagia**.

Thin Liquids

These flow very easily. Examples include:

- Water, milk, juice, coffee, tea
- Ensure and other nutrition drinks
- Soda and other carbonated drinks
- Jell-O, ice cream, sherbet, sorbet
- Broth-based soups
- Foods that mix solids and liquids, like cereal with milk or soup with pieces

Infant formula and some supplements may be called “slightly thick.”

Mildly Thick (Nectar-Like) Liquids

These are a little thicker than water. Examples:

- Fruit nectars
- Maple syrup
- Eggnog
- Tomato juice
- Cream-based soups

Moderately Thick (Honey-Thick) Liquids

These pour like honey.

Extremely Thick (Spoon-Thick) Liquids

These are as thick as pudding and must be eaten with a spoon.

Thickening products

You can buy products that thicken liquids without changing the taste. Most work in hot or cold drinks. You can find them at pharmacies, medical supply stores, or online. You do not need a prescription. Some stores may not keep them in stock, so order ahead so you don't run out.

Below are some common products. Visit each product's website for more details.

- **Nestle Resource ThickenUp Clear:** nestlenutritionstore.com/thickenupr-clear.html
- **SimplyThick:** simplythick.com
- **Thick & Easy:** lyonshealthlabs.com/products/type/thickeners
- **Thick-It:** thickit.com

Other helpful tips

- Talk with your dietitian if you have questions about nutrition.
- For powders, follow the training your SLP gave you, so you can thicken liquids to the right thickness.
  - If your drink is too thin, add more thickener.
  - If it is too thick, add more liquid.
- Ask your SLP before having Jell-O, sherbet, sorbet, or ice cream. These melt into thin liquids and may not be safe for you.
- Broth-based soups are thin liquids. Only drink them if they are thickened to your recommended level.
- Popsicles and ice can change thickness as they melt. Ask your SLP or dietitian how to safely cool or freeze liquids.
- Bring thickening supplies when you eat out. Single-serve packets are easy to carry.
- If you still have trouble swallowing or have questions, talk with your SLP. They can help you find other tips or products

Swallow Guide: Safety with Meals

Follow the instructions marked by your speech language pathologist (SLP) to swallow safely.

Oral care

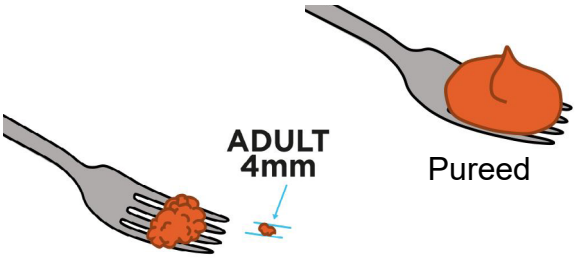
Please complete oral care _____ times per day.

Liquids

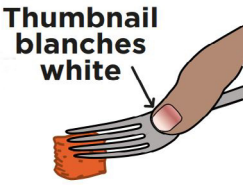
- ❑ None
- ❑ Ice chip protocol
- ❑ Free water protocol
- ❑ Thin
- ❑ Mildly thick
- ❑ Moderately thick

Food

- ❑ **Pureed:** Food is smooth with no lumps. It is not sticky. You do not need to chew it.
- ❑ **Minced and Moist:** Food is soft and moist, but not watery. No liquid should leak or drip from it. You do not need to bite the food. You can mash it with a fork. Each piece must be small enough to fit between the prongs of a fork.
- ❑ **Soft and Bite-Sized:** Food is soft, tender, and moist, but not dripping liquid. You can mash it with gentle pressure from a fork. Pieces must be small — no bigger than the width of the fork prongs.
- ❑ **Regular:** Normal food with no changes to texture. You can eat all textures safely.



Minced and Moist



Soft and Bite-Sized

Medicines

- ❑ Non-oral
- ❑ Crushed
- ❑ Whole
- ❑ With puree
- ❑ With liquid

Strategies

- ❑ Chin tuck
- ❑ Side lying: ❑ left ❑ right
- ❑ Head turn: ❑ left ❑ right
- ❑ Head tilt: ❑ left ❑ right
- ❑ Alternate solids/liquids
- ❑ Alternate hot/cold
- ❑ Multiple swallow
- ❑ Effortful swallow
- ❑ Small bites
- ❑ Small sips
- ❑ Slow rate
- ❑ Sitting upright
- ❑ Other: _____

Assistance

- ❑ Feeds self
- ❑ Set up food/tray
- ❑ Total assist
- ❑ Cues: _____

Equipment

- ❑ Dentures
- ❑ Glasses
- ❑ Straw
- ❑ Adaptive utensils

Heart Healthy Eating with DASH

DASH, or Dietary Approaches to Stop Hypertension, is an eating plan that lowers blood pressure and LDL (bad) cholesterol to reduce your risk of getting heart disease. Your healthcare provider may also recommend DASH to prevent or control other diseases and conditions, such as stroke, type 2 diabetes, and kidney stones.

Along with DASH, other lifestyle changes can help improve your health. They include staying at a healthy weight, exercising, and not smoking.

Talk to your provider for support, as you make changes to your diet and lifestyle.

Follow the DASH eating plan

The food groups listed show examples of daily or weekly servings for a 2,000-calorie-a-day diet. You may need more or less servings each day based on your calorie (energy) needs. Talk to your provider for support.

Sodium – limit to 2,300 mg or less per day or the amount recommended by your provider

- 1 teaspoon of salt has about 2,300 mg of sodium.
- Most of the sodium in our diets comes from processed foods, like lunch meat, canned soups, canned vegetables, and boxed or packaged mixes.
- Read food labels to learn how much sodium is in a food.
- Use sodium-free spices or flavorings with your food instead of salt.
- Rinse canned foods to remove some of the added sodium.
- Buy foods labeled “no salt added,” “sodium-free,” “low sodium” or “very low sodium.”

Grains – eat 6 to 8 servings per day

- 1 serving equals:
  - 1 slice of bread
  - 1 ounce of dry cereal (about ½ to 1¼ cups, depending on cereal type)
  - ½ cup of cooked rice, pasta, grains, or cereal
- Choose whole grains (100% whole wheat or whole grain bread, brown rice, quinoa, or oatmeal) over refined grains (white flour, degermed cornmeal, white bread, or white rice).

Vegetables – eat 4 to 5 servings per day

- 1 serving equals:
  - 1 cup raw, leafy vegetables
  - ½ cup chopped raw or cooked vegetables
  - ½ cup low sodium vegetable juice

Fruits – eat 4 to 5 servings per day

- 1 serving equals:
  - 1 medium fruit
  - ¼ cup dried fruit
  - ½ cup fresh, frozen, or canned fruit
  - ½ cup fruit juice
- Choose whole fruits (fresh, frozen, or dried) over juice.

Fat free or low fat dairy – eat 2 to 3 servings per day

- 1 serving equals:
  - 1 cup fat free or 1% low fat milk
  - 1½ ounces low fat cheese
  - 6 ounces fat free or low fat yogurt

Lean meats, poultry, and fish – eat 6 to 8 servings per day

- 1 serving equals:
  - 1 ounce cooked meat, fish, or poultry
  - 1 egg
- Trim away visible fat.
- Remove skin from poultry.
- Use low fat cooking methods, like broil, roast, poach, bake, and grill.
- Limit meat to 3 ounces at meals (about the size of the palm of your hand).
- Limit egg yolks to 4 per week.

Fats and oils – eat 2 to 3 servings per day

- 1 serving equals:
  - 1 teaspoon butter, margarine, or oil
  - 1 tablespoon mayonnaise
  - 2 tablespoons salad dressing
- Use small amounts of butter or margarine.
- Use olive oil as your first choice for oils.

Seeds, nuts, and legumes (beans, lentils, and peas) – eat 4 to 5 servings per week

- 1 serving equals:
  - ⅓ cup or 1½ ounces of nuts
  - 2 tablespoons nut butter

- 2 tablespoons or ½ ounce seeds
- ½ cup cooked beans, lentils, or peas

- Eat more vegetarian or meatless meals.

Sweets and added sugars – eat 5 or less servings per week

- 1 serving equals:
  - 1 tablespoon of sugar, honey, maple syrup, or chocolate sauce
  - 1 tablespoon jelly or jam
  - ½ cup sorbet, sherbet, or ice cream
  - 2 small cookies
- Keep sugar on the food label to less than 10 grams per serving.
- People with male anatomy: limit sugar to no more than 150 calories or about 3 tablespoons (38 grams) per day.
- People with female anatomy: limit sugar to no more than 100 calories or about 2 tablespoons (25 grams) per day.
- A 12-ounce can of regular soda has about 40 grams of sugar!

For more information about DASH, visit:

- National Heart, Lung, and Blood Institute at nhlbi.nih.gov/education/dash-eating-plan
- MedlinePlus at medlineplus.gov/dashdiet.html

Tips for success

- Read food labels to learn what is in a food. This will help you to make healthier choices. Look at calories, saturated fat, sodium, and sugars.
- Use the DASH 2-day sample menu on the next page to help you get started.

Adopt healthy lifestyle habits

To boost the health benefits of eating well with DASH, practice these healthy lifestyle habits.

- **Get 7 to 8 hours of sleep a night.**
- **Maintain a healthy weight.** Talk to your provider or dietitian about what is a healthy weight for your height.
- **Exercise regularly.** Get at least 150 minutes a week of moderate exercise, such as walking, biking, or swimming. This breaks down to just 30 minutes, 5 days a week. Start slowly, such as walking briskly for 15 minutes, twice a day.
- **Manage stress.**
- **Limit alcohol.** If you drink, do so in moderation. This means no more than 2 drinks per day for people with male anatomy, and 1 drink per day for people with female anatomy.
- **Do not smoke or use tobacco products.** Visit smokefree.gov or go.osu.edu/pted3430 for tools and tips to quit.

DASH 2-day sample menu	
Day 1	**Day 2**
Breakfast	**Breakfast**
1 cup bran flakes cereal	½ cup oatmeal
1 medium banana	1 mini 100% whole wheat bagel
1 cup 1% low fat milk	1 tablespoon peanut butter
1 slice 100% whole wheat bread	1 medium apple or 1 cup other whole fruit
1 teaspoon butter or soft margarine	1 cup 1% low fat milk
½ cup orange juice or orange segments	
Lunch	**Lunch**
¾ cup chicken salad on 2 slices 100% whole wheat bread	Chicken breast sandwich with 3 ounces skinless chicken breast, 2 slices 100% whole wheat bread, 1 slice low fat cheddar cheese, 1 large romaine leaf, 2 slices tomato, 1 tablespoon low fat mayonnaise
Salad with ½ cup fresh cucumber slices, ½ cup tomato wedges, 1 tablespoon sunflower seeds, 1 teaspoon Italian dressing	1 cup cantaloupe chunks
½ cup fruit cocktail	
Dinner	**Dinner**
3 ounces lean beef with 2 tablespoons fat free beef gravy	1 cup whole grain spaghetti with ¾ cup spaghetti sauce (with no meat and less than 10 grams of sugar per serving), and 3 tablespoons Parmesan cheese
1 cup green beans sauteed in ½ teaspoon olive oil	Spinach salad with 1 cup spinach leaves, ¼ cup fresh grated carrots, ¼ cup sliced mushrooms, 1 tablespoon vinaigrette dressing
1 small baked potato topped with 1 tablespoon fat free sour cream, 1 tablespoon low fat shredded cheddar cheese, 1 tablespoon chopped scallions	½ cup corn, cooked from frozen
1 small whole wheat roll with 1 teaspoon tub margarine	½ cup fresh or canned pears
1 small apple	
1 cup 1% low fat milk	
Snack	**Snack**
⅓ cup almonds, unsalted	⅓ cup walnuts, unsalted
¼ cup raisins	½ cup applesauce
½ cup low fat, low sugar Greek yogurt	1 low fat mozzarella string cheese

Exercise

Benefits of exercise

Exercise has many benefits. It can:

- Improve your heart, lungs, and blood pressure.
- Help you manage your weight.
- Help your body use insulin better.
- Improve your mood and energy.
- Lower your risk of health problems.
- Help lower cholesterol and triglycerides.

These are all good reasons to start and stick with a regular exercise routine.

Getting started

- If you have not been exercising, talk with a member of your healthcare team before you begin. Follow any limits your doctor gives you.
- Start slowly. Increase your time and effort little by little.
- If you are new to exercise, begin with 5 to 10 minutes of walking, 3 or 4 days a week. In the second week, try 10 minutes of walking twice a day, 3 days a week.
- Aim for **150 minutes of moderate exercise each week**. You can break this into shorter sessions, such as 30 minutes a day, 5 days a week.
- Choose activities you enjoy and that feel comfortable for your body.

Exercise at the right pace

Do not push yourself too hard. If you are walking, you should be able to say hello to someone without getting out of breath.

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

Stop exercising right away if you feel:

- Pain or pressure in your chest, neck, or jaw
- Unusual tiredness
- Dizzy or feeling light-headed
- Irregular heartbeats

If these symptoms continue after you stop, call 911 or go to the Emergency Department right away.

Quitting Tobacco Use

Using tobacco in any form is harmful to your health. Quitting is one of the best things you can do for your body. When you stop using tobacco, you lower your risk of stroke, heart disease, lung problems, blood vessel disease, and cancer.

Benefits of quitting

When you quit smoking, your body starts to heal right away.

- **After 20 minutes:** Your heart rate and blood pressure go down.
- **After 8 hours:** The oxygen level in your blood returns to normal.
- **After 3 months:** Your blood flow and lung function gets better.
- **After 9 months:** You cough less and breathe more easily.
- **After 1 year:** Your risk of heart disease is cut in half.
- **After 5 years:** Your risk of stroke is the same as someone who never smoked. Your risk of cervical cancer also returns to normal.
- **After 10 years:** Your risk of many cancers is lower.

Getting help to quit

You do not have to quit alone. Support can make quitting easier.

- Talk with your healthcare provider about quitting.
- Ask about classes and support groups in your area.
- Learn ways to manage stress without tobacco.
- Ask your provider about medicines and other tools that can help you quit.

Ohio State Resources

- If you have an Ohio State primary care doctor, ask about a referral to the office pharmacist for help with quitting tobacco.
- Ohio State Family Medicine and Internal Medicine teams can support you as you quit.
- You can call **614-293-QUIT (7848)** to talk with a pharmacist for a one-on-one assessment, counseling, and treatment.
- For more information, please visit wexnermedical.osu.edu/heart-vascular/clinical-pharmacist-services/smoking-cessation.
- You can also ask your provider for the **Quitting Tobacco Use Book** or visit go.osu.edu/pted3430.

Quitlines

These phone numbers offer free help and support:

- **American Cancer Society:** 1-800-227-2345
- **American Lung Association:** 1-800-LUNG-USA (1-800-586-4872)
- **National Cancer Institute:** 1-877-44U-QUIT (1-877-448-7848)
- **Ohio Department of Health:** 1-800-QUIT-NOW (1-800-784-8669)

Mobile Apps

You can also use free apps to help you quit. Search your phone's app store for quit smoking apps like **QuitNow!**, **QuitSTART**, and **Smoke Free**.

Emotional Changes After a Stroke

A stroke affects your brain, which controls your feelings or actions. Because of this, it is common to notice emotional changes after a stroke. These changes can feel confusing, but they are a normal part of recovery as your brain heals.

Common emotional changes

You may notice:

- Feeling sad, hopeless, or a sense of loss (for example, from loss of independence or changes in your body)
- Reacting faster or slower than usual
- Feeling more nervous, unsure, or worried (often about recovery or how others are affected)
- Feeling more frustrated or easily irritated
- Crying more often
- Thinking a lot about your family or loved ones
- Feeling afraid of having another stroke or new health problems

Why these changes happen

A stroke can:

- Affect the parts of the brain that control emotions
- Bring changes to your body or daily life that are hard to adjust to

How loved ones can help

Family and friends can support recovery by:

- Staying in touch and offering regular support
- Watching for signs of depression or a worsening mood
- Helping with follow-up appointments and encouraging you to talk with a doctor about any emotional changes

Ways to cope

- **Be kind to yourself:** Rest, eat well, stay active as advised, and avoid alcohol or drugs
- **Take one day at a time:** Keep a simple routine and try to complete 1 important task each day
- **Stay connected:** Spend time with people you care about and share your feelings
- **Set small goals:** Break tasks into steps and celebrate progress
- **Write in a journal:** Note your feelings, progress, and things you are grateful for
- **Practice relaxation:** Try deep breathing and gentle stretching
- **Join support groups:** Connect with others who understand
- **Move safely:** Light activity, as approved by your care team, can lift your mood and reduce stress

Depression After a Stroke

There is a higher risk for depression after a stroke. It can happen because the stroke affects parts of the brain that control mood. Depression can start right after the stroke, during rehab, or after you return home. Many people are at the highest risk for depression 6 to 24 months after leaving the hospital.

Common signs of depression

A person may be experiencing depression if they have several of these signs almost every day for at least 2 weeks:

- Feeling frustrated, irritable, or short-tempered
- Losing interest in activities you used to enjoy
- Feeling sad, empty, or “down”
- Crying more than usual
- Feeling slowed down or very restless
- Feeling worthless or guilty
- Feeling hopeless or negative about the future
- Feeling anxious or worried
- Changes in appetite or weight
- Sleeping too little or too much
- Trouble thinking, remembering, or making decisions
- Pulling away from people or activities
- Low energy or feeling tired all the time
- Changes in sexual interest

Some of these signs may also be caused by the stroke itself, but they are still important to notice.

If these signs last more than 2 weeks, or if you have thoughts about harming yourself or others, get help right away.

Where to get help

While in the Hospital

Talk with your nurse, doctor, psychologist, social worker, or therapist. They can support you and help you find the right care.

After You Go Home

- Talk to your primary care doctor or social worker.
- You can make an appointment with **Ohio State Rehabilitation Psychology** at 614-293-3830 for mood, thinking, or behavioral changes related to your stroke.
- Individual, group, or family counseling may help. Your doctor, nurse, social worker, or hospital chaplain can help you find a counselor.

Community and Spiritual Support

- Churches, temples, mosques, or other places of worship can offer support and community.
- Many people find it helpful to talk with a spiritual leader.

Stroke Support Groups

- Use the **American Stroke Association's Stroke Group Finder** at stroke.org/en/stroke-support-group-finder to locate a support group near you by entering your ZIP code.
- More support group resources are listed on page 67 in this book.

Mental Health Services

- **Mental Health America of Franklin County** offers information and resources. Call or text 614-242-4357 or visit mhafc.org.
- Ask your primary care provider or stroke team for a local referral.

Community Resources

- **LSS 211 Central Ohio** offers 24-hour referrals. Call 2-1-1 or visit lssnetworkofhope.org/211centralohio.
- **Ohio State Behavioral Health Urgent Care** provides in-person and virtual appointments. Call 614-293-8295 or visit wexnermedical.osu.edu/locations/ohio-state-harding-hospital/behavioral-health-urgent-care to learn more.

Emergency Help

If you feel you may harm yourself or others, **call 911** or go to the nearest emergency department.

Help Anytime

If you are having thoughts of harming yourself or others, you can call these 24-hour hotlines:

- **988 Suicide and Crisis Lifeline:** 9-8-8
- **Central Ohio Suicide Prevention Hotline:** 614-221-5445
- **Netcare Crisis Hotline:** 614-276-CARE (614-276-2273)

Sexual Health After a Stroke

A Guide for Patients and Partners

After a stroke, you may have questions about your body, sexual activity, family planning, or relationships. These are important life functions and normal to discuss with your healthcare providers.

How a stroke can affect sexual function

Sexual function includes how your body responds during sexual activity. This may include arousal, erection, ejaculation, lubrication, or orgasm. These can change after a stroke, and the changes are different for each person. Medical, physical, and emotional factors can all play a role.

Medical Changes

- A stroke can affect parts of the brain that control sexual function.
- Some medicines or medical treatments may lower your interest in sex or make sexual activity harder.
- Other health problems may also affect your interest or ability to take part in sexual activity.
- **Do NOT stop taking any medicine without talking to your doctor first.**

Physical Changes

- You may have changes in movement, strength, or sensation.
- You may have changes in bowel or bladder control.
- You may need to adjust how you take part in sexual activity. This might include:
  - Trying new positions
  - Using adaptive equipment
  - Planning around bowel or bladder routines
  - Managing pain or muscle tightness
- Some people have a higher risk of infection, falls, or incontinence.

Emotional Changes

- Many people feel sad, worried, frustrated, guilty, or embarrassed after a stroke.
- You may feel differently about your body or your role in relationships.
- These feelings can affect your interest in sex or how you take part in sexual activity.

These topics can feel uncomfortable, but they are a normal part of recovery. Many sexual problems after a stroke are related to thoughts, feelings, or communication — not just physical ability. Your healthcare team can help you find strategies and treatments that support your sexual health.

Other changes you may notice

- Concerns about how your body looks or feels
- Changes in how you see yourself or your identity
- Questions about dating or starting new relationships
- Concerns about consent and safe sexual practices
- Changes in sexual desire or behavior
- Challenges with memory, thinking, or communication
- Feeling unsure about how to talk about these topics
- Feeling uncomfortable in social or intimate situations

Having a sexual relationship

If you have a partner or are seeking one, think about ways to share closeness and intimacy that feel comfortable for both of you.

- Talk openly with your partner about your needs and concerns.
- Be patient and start slowly. What felt good before the stroke may feel different now.
- Focus on exploring what feels good to you today.
- Because a stroke can affect communication, make sure both partners clearly give consent before and during any sexual activity.

For most people, sexual activity does **not** increase the risk of another stroke. Before becoming sexually active again, talk with your doctor about:

- Your risk of future stroke
- Fertility and family planning
- Birth control options
- Preventing sexually transmitted infections
- Infection risks related to bowel or bladder changes or skin issues

How your healthcare team can help

People have different preferences for when and how they want to talk about sexual health. You can choose which providers you feel most comfortable with.

How the Different Members of Your Healthcare Team Can Help

Medical providers:

- Discuss risks, medicines, and side effects
- Review infection risks and prevention

Rehabilitation Therapy:

- Help with mobility, positioning, and adaptive equipment
- Support bowel and bladder management
- Improve strength, balance, and endurance

Rehabilitation Psychology:

- Help you adjust to changes after stroke
- Support communication skills
- Address thinking or communication problems
- Provide couples counseling
- Explore body image concerns

Your healthcare providers can also give you reading materials or other resources that match your learning needs.

Relaxation Techniques

Learn relaxation techniques to reduce stress and anxiety. Try different techniques to find what works best for you. Practice often and your ability to relax will improve over time. Your healthcare team can help you find what works for you.

Listening to music

Listening to music can help you relax. You can play your favorite songs by themselves or while doing another relaxation activity. Try music that feels calm and soothing, such as soft classical music or nature sounds.

Breathing exercise

This exercise helps you relax by taking slow, deep breaths. Set aside 3 to 5 minutes.

1. Breathe in slowly through your nose. Feel your chest and lungs expand.
2. Hold your breath for a count of 3.
3. Breathe out slowly through pursed lips. Let the muscles in your face, jaw, shoulders, and stomach relax.
4. Repeat 5 to 10 times or until you feel calmer.

Note: If you feel light-headed, slow down your breathing.

Aromatherapy

Aromatherapy uses plant oils, called essential oils, to help improve well-being. Some scents may help you feel calm. You can breathe in the scent or use a small amount on your skin after diluting it. Common oils to try:

- **Lavender:** may help with stress, headaches, congestion, or trouble sleeping
- **Peppermint:** may help with nausea or headaches
- **Lemon:** may help freshen the air and ease nausea

Physical exercise

Exercise is a good way to lower stress. It helps release muscle tension and increases endorphins, which are natural chemicals that help you feel good. Even light activity can help your body relax.

Positive thinking

Negative thinking can increase stress. Try replacing them with positive statements. Repeat them to yourself throughout the day. Examples:

- "I am doing the best that I can."
- "I care for my well-being."
- "I will try again."

Guided imagery

Guided imagery helps you relax by imagining a peaceful place or situation. It can lower stress and help you feel safe and calm. It gets easier with practice.

How to do it:

1. Set aside 10 to 15 minutes.
2. Find a quiet, comfortable place where you won't be disturbed.
3. Turn off lights, phones, and other distractions.
4. Sit or lie down in a comfortable position.
5. Listen to a guided imagery recording.

Free guided imagery recordings and other resources are available at wexnermedical.osu.edu/integrative-health/resources.

Leisure as Part of Your Rehabilitation

Doing activities you enjoy can help you heal and feel better. These activities can give you energy, improve your mood, and help you stay active.

Talk with your healthcare team about what you like to do. We can help you build your skills and adjust activities, so they fit your abilities.

What do you like to do?

You may want to:

- ❑ Be active
- ❑ Build relationships or be part of a group
- ❑ Compete with others or with yourself
- ❑ Create something you can see or touch
- ❑ Do something different from work or school
- ❑ Do something meaningful
- ❑ Feel proud of what you do
- ❑ Help others
- ❑ Laugh and have fun
- ❑ Learn more about yourself or a topic
- ❑ Make plans and follow through
- ❑ Make your own choices or be spontaneous
- ❑ Meet new people or make friends
- ❑ Relax and take it easy
- ❑ Spend time in pleasant surroundings
- ❑ Stay busy or try new things
- ❑ Use or improve your skills

Leisure activities

Check the activities you enjoy or want to try. Share this list with your healthcare team, family, or friends. Your community may offer classes or programs through libraries, parks, senior centers, or fitness clubs.

Relaxation Activities

- ❑ Caring for a pet
- ❑ Crossword puzzles
- ❑ Gardening or caring for houseplants
- ❑ Jigsaw puzzles
- ❑ Listening to music
- ❑ Meditating
- ❑ Reading
- ❑ Using a computer or the internet
- ❑ Video games
- ❑ Visiting the library
- ❑ Watching movies
- ❑ Word search puzzles
- ❑ Writing

Creative Activities

- ❑ Acting
- ❑ Baking or cooking
- ❑ Ballet
- ❑ Canning food
- ❑ Church activities
- ❑ Collecting items
- ❑ Community events
- ❑ Concerts
- ❑ Crocheting
- ❑ Drawing
- ❑ Flower arranging
- ❑ Going to art shows
- ❑ Home repair or improvement
- ❑ Knitting
- ❑ Making jewelry
- ❑ Needlepoint
- ❑ Opera
- ❑ Painting
- ❑ Photography
- ❑ Playing musical instruments
- ❑ Plays or musicals
- ❑ Pottery or ceramics
- ❑ Quilting
- ❑ Scrapbooking
- ❑ Sewing
- ❑ Singing
- ❑ Visiting museums
- ❑ Woodworking

Social Activities

- ❑ Bingo
- ❑ Board games
- ❑ Card games
- ❑ Checkers or chess
- ❑ Clubs or organizations
- ❑ Cornhole or bean bag toss
- ❑ Darts
- ❑ Dominoes
- ❑ Eating out
- ❑ Parties
- ❑ Pool or billiards
- ❑ Shopping
- ❑ Spending time with friends
- ❑ Traveling
- ❑ Volunteer work

Physical Activities

- ❑ Aerobics
- ❑ Badminton
- ❑ Basketball
- ❑ Bicycling or spinning
- ❑ Bocce
- ❑ Bowling
- ❑ Football
- ❑ Frisbee
- ❑ Golf
- ❑ Handball, racquetball, or squash
- ❑ Hockey
- ❑ Ice skating
- ❑ Jogging or running
- ❑ Judo or other self defense
- ❑ Shuffleboard
- ❑ Skiing
- ❑ Soccer
- ❑ Softball or baseball
- ❑ Swimming
- ❑ Table tennis
- ❑ Tennis
- ❑ Volleyball
- ❑ Walking
- ❑ Weightlifting
- ❑ Yoga

Outdoor Activities

- ❑ Auto repair
- ❑ Bird watching
- ❑ Boating
- ❑ Camping
- ❑ Canoeing
- ❑ Fishing
- ❑ Gardening
- ❑ Hiking
- ❑ Horseback riding
- ❑ Horseshoes
- ❑ Miniature golf
- ❑ Rollerblading
- ❑ Sailing
- ❑ Yard work

Planning for Discharge from Dodd Rehabilitation Hospital

Your care manager and social worker will work with you and your family to help you get ready to leave the hospital. Your healthcare team will decide when you are medically ready. You and your family are the most important members of the team. Please talk openly with staff about what you need.

Things to consider

- Family and caregivers must take part in training, so they can learn how to care for you at home.
- Therapists provide training on weekdays between 9 a.m. and 3 p.m.
- Nurses may provide training in the evenings.
- Training can also be scheduled by appointment.

Most patients need ongoing therapy, care, and support after leaving the hospital. Your care manager and social worker will help you understand what your insurance may or may not cover. Insurance plans are different, and some services may not be paid for. Some families may need to provide 24-hour supervision.

Service options

Depending on your needs and the help available from family or friends, you may have one of these options:

Home with Outpatient Therapy

- You live at home with support from family.
- You go to therapy appointments outside the home, usually 2 or 3 times a week.

Medical equipment

Your care manager will help you order any medical equipment you need at home. Insurance plans are different. Some may cover items like:

- Bathing equipment
- Commodes
- Raised toilet seats
- A hospital bed

Many insurance plans will pay for **either** a wheelchair **or** a walker, but not both.

Comfort in talking about your needs

It can be hard to talk about your health and the changes you are facing. Your social worker can help you plan how to talk with family, friends, and others about what you need and what has happened.

Contact us

If you have questions or concerns about your discharge plan, please call the social worker/care manager main office phone number at **614-293-8752**.

Home with Home Healthcare

- A nurse or therapist will come to your home 1 to 3 times a week.
- Nurses can help with dressing changes, injections, IV care, and certain therapies.
- A home health aide may help with bathing, grooming, eating, or getting in and out of bed.
- These trained workers provide care and keep track of how you are doing.
- Your insurance may cover a home health aide for personal care, such as bathing or grooming, when this service is available.

Assisted Living

- Assisted living is a type of housing for people who need some help with daily tasks but do not need the level of medical care provided in a nursing home. It is a good option for people who want support but still want to stay as independent as possible.
- In an assisted living facility, staff can help with everyday activities such as bathing, dressing, and taking medicines. Care is personalized to each person's needs.
- Most residents have their own apartment with a small kitchen and a private bathroom. They can also use shared spaces for meals, exercise, and social activities. These communities are designed to be safe, supportive, and comfortable while allowing residents to make their own choices.

Skilled Nursing Facility

- A nursing facility for people who need more medical care or special therapies.

Most services may require a co-payment. Your care manager and social worker will help you understand your options and speak up for your needs.

Follow-up care

When you leave the hospital, you will receive written discharge instructions. Ask questions if anything is unclear. You will also have a follow-up visit with your doctor. It is important to keep this appointment. Your doctor will check your progress and may adjust your medicines to help lower your risk of another stroke.

Outpatient therapy

Outpatient therapy may continue for months or even years after a brain injury. The goal is to help you improve your daily skills. There are several types of outpatient programs.

Day Treatment Rehab

- Programs may be full-day or half-day.
- Some programs meet every day; others meet less often.
- You move through different therapy sessions during the day. For example:
  - Mornings may include physical or recreational therapy.
  - Afternoons may include speech or occupational therapy.

- You return home at night.
- These programs are usually not covered by private insurance or Medicare. Medicaid Passport waivers may help with costs.

Neurobehavioral Programs

- These programs may be inpatient or outpatient.
- They focus on behavior changes after a brain injury.
- The goal is to help you manage behavior at home, in social settings, or at work.
- Behavior therapy is often combined with physical or occupational therapy.

Covering the costs

It is normal to worry about the cost of care. Costs depend on your income and insurance. Your discharge team will help you explore what services fit your needs and budget.

Insurance plans vary. Medicare, Medicaid, and private insurance may only cover part of the cost.

Assisted living is usually **not** covered by private insurance or Medicare. Medicaid Passport waivers may help with these costs.

Contact your insurance company before you leave the hospital and before starting any rehab program or moving to a facility. Social workers, care managers, and financial counselors can answer questions and help people with limited or no insurance.

If you have problems or concerns after leaving the hospital, call your doctor or social worker. They can help you manage the emotional and physical challenges of recovery. You will also receive information about community resources in your area.

For more information

- **Social Worker:** 614-814-2408
- **Financial Assistance:** 614-293-0860

Stroke Resources and Support Groups

Stroke resources

- **American Stroke Association:** Visit stroke.org or call the Stroke Family Warmline at 1-888-4-STROKE or 1-888-478-7653.
- **National Institute of Neurological Disorders and Stroke:** Visit ninds.nih.gov or call 1-800-352-9424 (toll free). People with hearing or speech impairments can dial 7-1-1 to access the free relay service.
- **The Stroke Network:** Visit strokenetwork.org.

Stroke support groups

- **American Stroke Association, Stroke Support Group Finder:** Find a stroke support group near you at stroke.org/en/stroke-support-group-finder.
- **Brain Injury Association of Ohio:** Find a stroke support group near you at biaoh.org/support-groups.
- **Central Ohio Aneurysm, AVM and Hemorrhagic Stroke Support Group:** A group intended for patients and loved ones who want to learn more about recovery, learn coping skills, discuss the emotional impacts of stroke, and support others. For more information, contact Marissa.Dejesus@osumc.edu or 614-293-8714.
- **Mount Carmel Stroke Support Group:** Caregivers and survivors learn about the process of stroke recovery. Group meets on the 3rd Tuesday of every month from 6 to 7:30 p.m. at the Mount Carmel Rehabilitation Hospital, 597 Executive Campus Dr., Westerville, OH 43082. For more information, contact Rachael.Bertini@encompasshealth.com or 614-392-3400.
- **Ohio State Aphasia Initiative:** A program for people living with aphasia. 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, visit go.osu.edu/aphasia, call 614-292-6251, or email slh.clinic@osu.edu.
- **Ohio State NeuroNights:** An online workshop that 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 is a workshop focused on a monthly theme, and the second meeting features a survivor sharing their story. Visit go.osu.edu/NeuroNights for more information or to sign up.
- **Ohio State Stroke Support Group:** A group led by a rehabilitation psychologist and a social worker. Stroke survivors, family members, and friends welcome. The group meets at Martha Morehouse Outpatient Care, Pavilion, Suite 2134, 2050 Kenny Road, Columbus, OH 43221 on the 4th Tuesday of the month. For more information, contact Dr. Wanda McEntyre at 614-293-3830 or Wanda.McEntyre@osumc.edu.
- **Stroke Survivor and Caregiver Support Group:** A group for stroke survivors and their caregivers. It meets in person and virtually on the 1st Tuesday of each month from 5 to 6 p.m. at the Dempsey Family Education and Resource Center at OhioHealth Riverside Methodist Hospital, 3535 Olentangy River Road, Columbus, OH 43214. For more information, email DempseyCenter@ohiohealth.com, call 614-788-6115, or visit ohiohealth.com/locations/neuroscience/the-dempsey-center.

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