



Neuro Care

Stroke Education: Patient Guide

Expert Stroke Care at Wellstar

Every second counts when it comes to treating strokes. That's why our fellowship-trained, board-certified neuro specialists work fast to provide advanced treatments that aim to prevent death and disability.

At Wellstar, we provide access to world-class stroke care for every patient. As one of the largest accredited stroke networks in Georgia, you have access to the highest level of neuro care from across the system right here in your community. Wellstar hospitals are recognized by the American Stroke Association, The Joint Commission and the state of Georgia as trusted stroke services providers.

As the leading provider of stroke services in Georgia, our neuro team performs one of the highest numbers of thrombectomies in the country.

About this workbook

This workbook has been carefully prepared to give you and your family information about your stroke and what you can do to prevent another stroke.

If any symptoms of stroke occur, immediately call 911! Follow up with your primary care physician as soon as possible after discharge from the hospital.

Use this workbook to help understand the type, location and seriousness of your stroke. It will guide you into recovery and give you tools to help you adapt to changes after your stroke.

We don't expect you to read the whole workbook at once. Use what you need when you need it. It's a resource to help you and your family over time. We invite you to use the workbook as a guide through your recovery. Write in the book and invite your stroke care team to record your progress and goals.

This workbook will help you navigate your changing needs. Take this book with you to follow-up appointments after your discharge and write down any questions you have.

While you are in the hospital our goal is to minimize the permanent effects of the stroke and reduce the risk of complications.

Table of Contents

Spot a Stroke	4
Stroke Risk Score Card.....	5
Initial Evaluation	6
Diagnostic Tests	7
Types of Strokes	8
Ischemic Stroke.....	8 - 9
Mechanical Thrombectomy	10
Hemorrhagic Stroke	11 - 12
Cryptogenic Stroke (Unknown Cause)	13
Central Retinal Artery Occlusion	14
Related Conditions.....	15
Transient Ischemic Attack.....	15
Carotid Artery Disease	16
Stroke Risk Prevention.....	17
Stroke Risk Factors.....	18
Things You Can Change	19 - 21
Stroke is an Emergency	22
Let's See What You've Learned	23
Medications.....	24
How Will the Stroke Affect Me?	25 - 33
Behavioral & Emotional Changes.....	25
Physical Changes.....	26
Aphasia	27
Depression	28
Fatigue	29
Areas of the Brain Affected	30 - 31
Brainstem Strokes	32
Cerebellar Strokes.....	32
Lacunar Strokes	33
Rehabilitation	34
Recovery.....	35
My Self-Care Goals.....	36
Choosing Food.....	37
Caregivers.....	38
Support Groups—In Person	39
Support Groups—Virtual	40
Caregiver/Stroke/Smoking Cessation Resources	41
Notes.....	42

Spotting a Stroke Starts with You

Every second counts when it comes to treating strokes. That's why our network of emergency physicians and neuro specialists work fast to provide care that aims to prevent death and disability.

Learning the warning signs of a stroke may help you save a life—even your own. Remember to BE FAST and get help immediately if you notice the symptoms below.

If any symptoms of stroke occur, immediately call 911!

CALL 911. When you come by ambulance, the hospital will be contacted and a team will be waiting to begin treatment immediately. Be Fast.

B	E	F	A	S	T
BALANCE	EYES	FACE	ARMS	SPEECH	TIME
					
Sudden loss of balance/dizziness	Sudden vision loss/blurred or double vision	Facial drooping	Weakness or numbness in one arm	Trouble talking or understanding	Time to call 911

Score Your Risk

It's time for you to take action to reduce your risk of having a stroke.

Directions:

1. For each risk factor, select the box (higher risk or lower risk) that applies to you. Select only one box per risk factor.
2. Enter a 1 in your selected box.
3. Add up your total for each vertical column.

Stroke Risk Score Card

Risk Factor	Higher Risk	Lower Risk
Is your blood pressure more than 120/80?	<input type="checkbox"/> Yes or Unknown	<input type="checkbox"/> No
Do you have atrial fibrillation?	<input type="checkbox"/> Yes or Unknown	<input type="checkbox"/> No
Is your fasting blood sugar more than 100 mg/dl?	<input type="checkbox"/> Yes or Unknown	<input type="checkbox"/> No
Is your diet high in saturated fat, sweetened beverages, salt, excess calories?	<input type="checkbox"/> Yes or Unknown	<input type="checkbox"/> No
Do you have diabetes?	<input type="checkbox"/> Yes or Unknown	<input type="checkbox"/> No
Are you inactive?	<input type="checkbox"/> Yes or Unknown	<input type="checkbox"/> No
Do you have a family history of stroke?	<input type="checkbox"/> Yes or Unknown	<input type="checkbox"/> No
Do you smoke?	<input type="checkbox"/> Yes or Unknown	<input type="checkbox"/> No
Total Score (add up your points for each column): _____		

What does your score mean?

If you scored higher in the higher risk column or you are unsure of your risk, talk to your healthcare provider about how you can reduce your risk.

Some stroke risk factors cannot be changed such as age, family history, race, gender and prior stroke.

What Happens at the Initial Evaluation

A stroke is a brain injury that happens suddenly when a blood vessel in the brain gets blocked or bursts. This stops blood flow into some areas of the brain. Without blood flow, those areas of the brain stop getting oxygen and they stop working. That means the parts of the body controlled by that part of the brain stop working.

Swallow test

Soon after you get to the hospital, a nurse will check your ability to swallow. If you have trouble, a speech therapist will see you.

Diagnosis & treatment

There are different types of strokes. When you get to the hospital, doctors will diagnose the type of stroke so you get the right treatment. You may need oxygen, an IV, medicine and medical procedures to treat your stroke.

You will have tests to find out how the stroke affected your brain and what caused the stroke.

Finding the cause to prevent stroke in the future

Finding the cause of your stroke is important to help prevent another stroke. Medical problems like high blood pressure, heart problems and diabetes increase your risk of stroke and need to be treated.

Your role in your care

You and your family are the center of the care team. Each day we will partner with you and your family to set goals and plan your care. Other doctors and specialists may be asked to see you while you are here. If we need to be clearer in explaining who is seeing you and why, please ask.

Your care team

In addition to doctors and nurses, there are many people on your care team.

Rehabilitation therapists may visit you to see what kinds of therapies, if any, you will need to help you recover from a stroke.

A care coordinator may also see you to assist with discharge planning.

Diagnostic Tests

The Wellstar Neuro Care network has a dedicated neuroradiology team of physicians. This includes neuroradiologists with advanced training in nervous system conditions and emergency care. Our radiologists and neuroradiologists use a range of advanced imaging technology to accurately diagnose strokes, nervous system tumors and other neurological conditions. Here are some of the tests we may discuss with you:

Head CT	A head CT shows detailed pictures of the brain. It can also tell if a stroke is caused by bleeding. It is usually one of the first tests done when you get to the hospital. You may have more than one head CT while you are in the hospital.
CTA CT angiography	A CTA is a special CT scan that uses an injection of contrast into your IV to focus on the blood vessels leading to and in the brain.
CTP CT perfusion	A CTP will help doctors see if there are areas of the brain that would benefit from mechanically removing a clot that is causing the stroke.
MRI Magnetic resonance imaging	An MRI is a test that uses powerful magnets to make detailed pictures of the brain. It shows more detail than a CT or a CTA. It will show doctors how much damage the brain has from the stroke.
Echo Echocardiogram	Echocardiograms use ultrasound to look for abnormalities in the heart that may have caused the stroke. There are two kinds of echocardiograms: TTE: A transthoracic echo is done by gliding an ultrasound transducer across the chest to get images of the heart through the chest wall. TEE: A transesophageal echo is done when doctors want a closer look at the heart structures. If you need a TEE, a doctor will explain how the test is done.
EKG Electrocardiogram	An EKG is a simple, painless test that records the electrical activity in the heart. It shows heart rate and regularity.
Carotid ultrasound	A carotid ultrasound uses ultrasound to look at your neck vessels to find plaque that can cause a stroke.
TCD Transcranial doppler	A TCD uses ultrasound waves to measure blood flow in the arteries in your brain.
Cerebral Angiography	In cerebral angiography, a thin plastic tube is inserted into an artery in the leg. Using X-ray guidance, the catheter is guided to the area being examined. Once there, contrast material is injected through the tube and images are captured.

TYPES OF STROKES

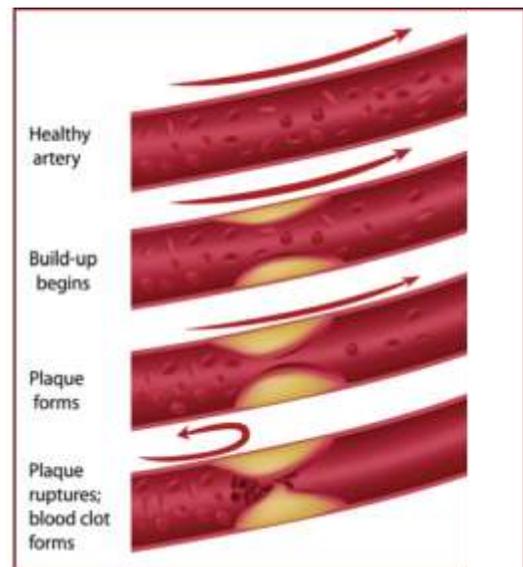
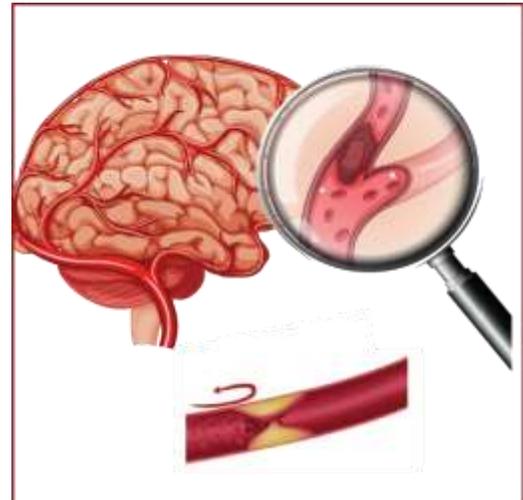
The two main types of strokes are ischemic and hemorrhagic. Most strokes—about 87%—are ischemic.

Ischemic Stroke (Blocked Artery)

An ischemic stroke is caused by a blocked artery in the brain. Blood clots usually cause the blockage. The clot either travels to an artery in the brain or forms in an artery in the brain and blocks blood flow. The clot gets stuck in an artery and blocks blood flow to areas of the brain on the other side of the clot.

Clot development

When LDL, also known as bad cholesterol, is high, it can build up in your arteries. It combines with other things in the blood to form plaque. Plaque buildup is dangerous because pieces can break off. When this happens, a clot forms as an attempt to fix the area where plaque broke off. This clot is what blocks blood flow to the brain and causes an ischemic stroke.



TYPES OF STROKES

Treatment for Ischemic Stroke

The most important aspect for stroke treatment is time. Treatment depends on how much time has passed since the stroke started and when you get to the hospital.

Stroke outcomes are generally worse the longer treatment is delayed. Therefore, it is critically important to call 911 immediately after the first signs of stroke.

Once a stroke starts, treatment options become more limited as time passes. Doctors will do tests to see if these procedures are needed to treat your stroke.

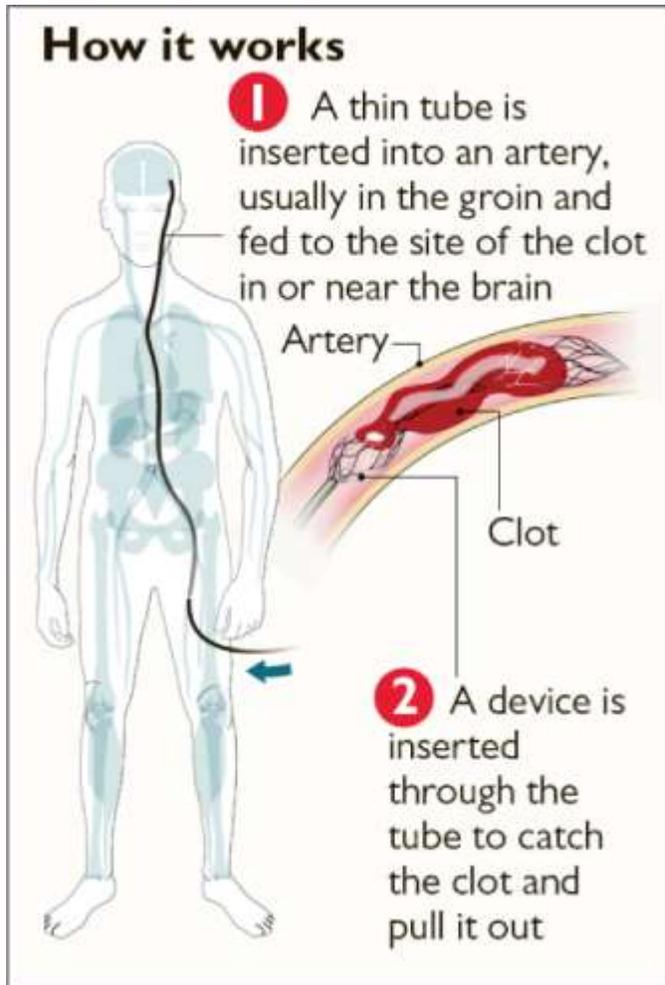
Some ischemic strokes can be treated with a clot-busting drug given intravenously. These drugs can dissolve the blood clot causing the stroke. Examples of clot-busting drugs are alteplase and tenecteplase.

Other strokes may be treated with a procedure called mechanical thrombectomy. A mechanical thrombectomy attempts to restore blood flow to the brain by removing the clot causing the stroke.

Sometimes, both a clot-busting drug and a mechanical thrombectomy are done to treat an ischemic stroke. If too much time has passed since the stroke started, neither a clot-busting drug, nor a mechanical thrombectomy will help.

TYPES OF STROKES

Mechanical Thrombectomy for Ischemic Stroke



TYPES OF STROKES

Hemorrhagic Stroke (Bleeding)

The second type of stroke is a hemorrhagic stroke, or bleeding stroke. This type of stroke happens when an artery in the brain bursts and blood leaks into or around the brain. There are two kinds of hemorrhagic strokes:

- **Intracerebral**
- **Subarachnoid**

Intracerebral hemorrhagic stroke

An intracerebral hemorrhage (ICH) happens when an artery in the brain bursts. This causes pressure in the brain and a lack of blood flow to the brain on the other side of the leak. High blood pressure is the most common cause of ICH.

Treatment for intracerebral hemorrhage

Treatment for intracerebral hemorrhage depends on the cause. Most patients are admitted to the Neuro Intensive Care Unit.

Treatment includes:

- Determining the cause of bleeding
- Controlling blood pressure
- Measuring and controlling pressure within the brain and skull
- Surgery may be recommended to prevent or stop bleeding or reduce pressure in the skull



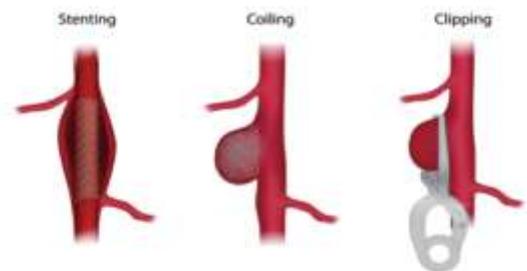
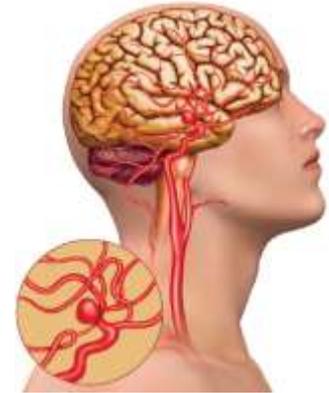
TYPES OF STROKES

Subarachnoid hemorrhagic stroke

A subarachnoid hemorrhage (SAH) happens when an artery on the surface of the brain bursts or leaks. Blood leaks from the artery and surrounds the brain. A ruptured aneurysm is the most common cause of SAH.

Treatment for subarachnoid hemorrhagic stroke

Stopping the bleeding is the primary goal for treating a subarachnoid hemorrhage. You may have a procedure or surgery to repair the burst aneurysm. A drain may be used to measure brain pressure. You may get medicines through an IV line to treat high blood pressure. Even after the bleeding has been stopped after a subarachnoid hemorrhage, you are at risk of a stroke from a blood vessel spasm in the brain for up to 21 days.



What is a brain aneurysm

A brain aneurysm is a weak spot in the wall of a blood vessel in the brain that causes the vessel to balloon outward. It often looks like a berry hanging on a stem. A ruptured aneurysm is life-threatening and needs immediate treatment.

Symptoms of a ruptured aneurysm include:

- Sudden, extremely severe headache
- Nausea and vomiting
- Stiff neck
- Blurred or double vision
- Sensitivity to light
- Confusion
- Loss of consciousness

Treatment for ruptured aneurysm

When an aneurysm in the brain bursts and causes a subarachnoid hemorrhage there are different procedures that can stop the bleeding. Most commonly, the aneurysm is coiled, and a stent is placed in the artery to protect it from ballooning out again. This procedure is done by inserting a catheter into the femoral artery in the groin and advancing it to the ruptured aneurysm.

If coiling is not possible, brain surgery is done to clip the neck of the aneurysm and seal it closed.

TYPES OF STROKES

Cryptogenic Stroke (Unknown Cause)

Because approximately 1 in 4 stroke survivors are likely to have another stroke, finding the cause of your stroke helps your physician develop an individualized plan to prevent another stroke.

When the cause of a stroke cannot be determined, it is called a **cryptogenic stroke**. About 1 in 3 (35%) of ischemic strokes are cryptogenic.

A type of cryptogenic stroke is an **embolic stroke of unknown source (ESUS)**. An embolic stroke is caused by a blood clot that starts somewhere other than the brain. The blood clot breaks loose and travels through the blood to the brain. About half of cryptogenic strokes are ESUS strokes.

During your hospital stay and follow-up care, it is especially important to discuss with your physician the best ways to **prevent another stroke**. These discussions typically include diagnostic testing, blood workups and lifestyle changes. Collaboration by neurologists, cardiologists, electrophysiologists and other team members may reveal the answers to provide treatment focused on preventing recurrent strokes.

Possible hidden causes of stroke are:

- Irregular heartbeat (atrial fibrillation)—patients with atrial fibrillation (AFib) are five times more likely to have a stroke
- Heart structure problems such as patent foramen ovale (PFO)
- Hardening of the arteries (large artery atherosclerosis)
- Blood clotting disorder (thrombophilia)

While the cause of your stroke may not yet be determined, it is important to follow your healthcare team's medical advice and take your medications as prescribed. If you receive a heart monitoring device, follow the physician's instructions for monitoring and follow-up care.

TYPES OF STROKES

Central Retinal Artery Occlusion

A central retinal artery occlusion (CRAO) is a type of ischemic stroke. It is a blockage in the main blood vessel that carries blood to the retina. The retina is the part of your eye that senses light and sends signals to the brain so you can see. CRAO may make you lose some or all your vision. It may result in permanent vision loss in the affected eye.

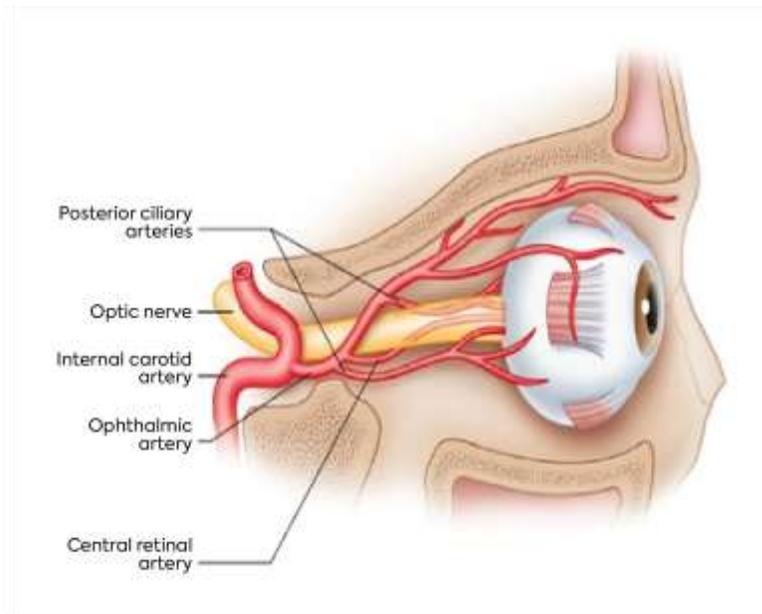
Causes of CRAO include:

- A blood clot that forms in the artery
- A collection of blood or solid material, such as fat that forms somewhere else in the body and travels to the eye artery
- A disease that causes the artery to swell
- An injury to the artery

Treatment of central retinal artery occlusion

CRAO treatment may include:

- Massaging the eye
- Medicines, such as steroids, to treat underlying swelling
- Having fluid removed from the front of your eye
- Using drops to reduce pressure in your eye
- Injecting a clot-busting drug to dissolve the clot



RELATED CONDITIONS

Transient Ischemic Attack

Although a transient ischemic attack (TIA) isn't a stroke, it is a major warning sign that your risk of having a stroke is high. In fact, about 1 in 3 people who have a TIA will go on to have a stroke within one year. To lower your risk of having a stroke after a TIA, find out what your risk factors are and learn how to reduce your risk.

Transient ischemic attacks (TIA) are sometimes called mini strokes. TIAs happen when an artery in the brain is blocked for a short time. Stroke-like symptoms occur, then go away.

**Transient (temporary)
Ischemic (without oxygen)
Attack (sudden)**

TIAs do not cause permanent damage in the brain like strokes, but they are a serious warning sign that you are at very high risk of having a stroke.

According to the American Stroke Association, about one-third of people who have a TIA will suffer a stroke within one year.

To help prevent a stroke, make changes to lower your risk and get immediate treatment for TIA.

RELATED CONDITIONS

Carotid Artery Disease

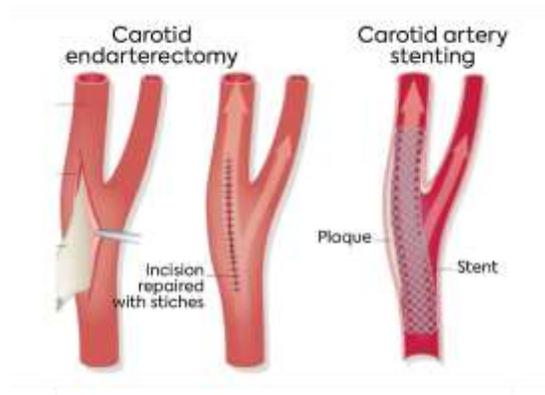
You have two carotid arteries: one on each side of your neck. They supply blood to the brain. Carotid artery disease happens when fatty deposits block those arteries. The blockage increases your risk of having a stroke. Carotid artery disease develops slowly over time. The first sign that you have carotid artery disease may be a stroke or a TIA. Treatment for carotid artery disease includes a combination of lifestyle changes, medication and sometimes a procedure or surgery to remove the blockages.

Treatment for carotid artery disease

In addition to medication and lifestyle changes, you may also have a procedure or surgery to remove the plaque in your carotid arteries.

Carotid stenting is a procedure that can open a narrowed carotid artery. A catheter is inserted into the artery at the groin and advanced to the narrowed neck artery. The catheter may contain a balloon and a stent. When the catheter gets to the narrowed part of the carotid artery, the balloon is inflated to open the area and a stent is placed to keep it open.

Carotid endarterectomy is a surgical procedure that can open a narrowed carotid artery. A small cut is made along the narrowed part of the artery and the fatty deposits are removed.



Stroke Risk Prevention

*Up to 40% of people who have a stroke will have another stroke within 5 years.
The good news is that by combining medicine and lifestyle changes,
you can decrease your risk of another stroke by 80% over 5 years!*

Blood Pressure

High Blood Pressure is the **#1 controllable risk factor** for stroke.

Blood pressure treatment with medicine is associated with a **22% reduction** in stroke recurrence.

Lifestyle changes to lower blood pressure include limiting salt, losing weight, a diet with fresh fruit and vegetables, limited alcohol, and regular physical activity.

Take Your Medicine

Taking your medicine is one of the most important things you can do to reduce your risk of another stroke.

Diabetes

Your risk of having a stroke is **3x higher** if you are diabetic. If you have diabetes, high blood pressure and you are overweight, your risk increases even more.

Smoking

Up to 25% of all strokes are directly related to smoking. After you quit, in 5 years your stroke risk is about the same as if you never smoked.

Cholesterol

People who take statins are less likely to have another stroke and are less likely to die early than people who don't take a statin.

Between 50-70 mg/dL

Recommended LDL cholesterol level after a stroke.

Diet & Exercise

Losing as little as **10 pounds** can lower your blood pressure.

*Be as active as you can. Make your goal 30 minutes of exercise daily. **Doing exercise decreases your stroke risk by 25-30%.***

STROKE RISK FACTORS

Controlling risk factors can dramatically lower your risk of having another stroke. Risk factors are things that increase your risk of having a stroke. There are two kinds of risk factors: ones you can change and ones you can't. The risk factors you can't change are called non-modifiable. Things like your age, race and family history can increase your risk of having a stroke.

You can't change those things, but knowing you have them may help motivate you to control the risk factors you can. Controlling risk factors can dramatically lower your risk of having another stroke.

Risk factors you can't change

Increasing age

The risk of having a stroke increases with age, doubling each 10 years after age 55.

Prior stroke

If you've had a stroke or a TIA in the past, your risk of another is higher than someone who's never had a stroke or TIA.

Race

Black Americans are affected by stroke more than any other race in the U.S. This is partly due to higher rates of high blood pressure and diabetes among Black Americans.

Family history

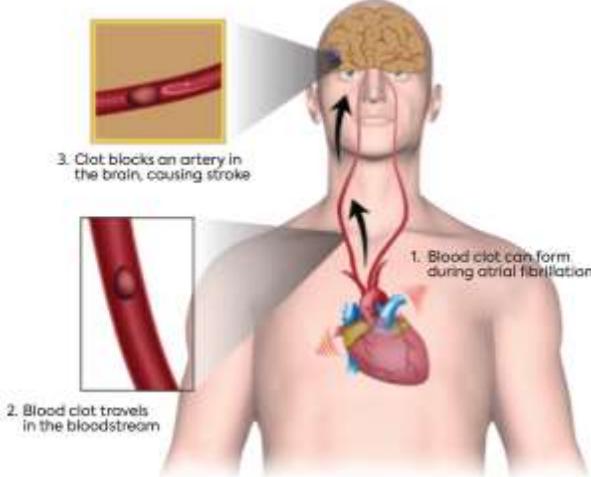
If you have a relative who's had a stroke, your risk is higher than someone who doesn't have a relative who has had a stroke.

TIPS TO LOWER YOUR RISK

Ways to lower your risk of having a stroke

1. Eat a heart healthy diet with plenty of fruits and vegetables.
2. Be physically active on a regular basis.

Things You Can Change

Risk Factor	Goal	My Action Plan
<p>❑ High Blood Pressure</p> <ul style="list-style-type: none"> High blood pressure hardens and weakens blood vessels, causing damage that could lead to a stroke 	<p>Ask your doctor what your blood pressure goal is</p>	<ul style="list-style-type: none"> Take medicine as prescribed Limit salt and processed foods Check your blood pressure daily Lose weight Exercise
<p>❑ High Cholesterol</p> <ul style="list-style-type: none"> LDL cholesterol (plaque) gets stuck in blood vessels and narrows the vessel, raising blood pressure Plaque can rupture causing a clot to form which can lead to a stroke 	<p>Total < 200 HDL (good) > 50 LDL (bad) between 50-70</p>	<ul style="list-style-type: none"> Take medicine as prescribed Eat a low cholesterol/low fat diet Lose weight Exercise
<p>❑ Diabetes</p> <ul style="list-style-type: none"> High blood sugar damages vessel walls and helps plaque build up 	<p>Fasting: 70-140 HbA1C: 4.0-6.0</p>	<ul style="list-style-type: none"> Take medicine as prescribed Follow diet recommendations Lose weight Exercise
<p>❑ Atrial Fibrillation</p> <ul style="list-style-type: none"> Atrial fibrillation is an irregular heartbeat that can result in blood clots forming in the heart and traveling to the brain causing a stroke 	<ul style="list-style-type: none"> Take anticoagulant (blood thinner) medicine as prescribed 	 <p>1. Blood clot can form during atrial fibrillation</p> <p>2. Blood clot travels in the bloodstream</p> <p>3. Clot blocks an artery in the brain, causing stroke</p>

Risk Factor	Goal	My Action Plan
<p>❑ Sleep Apnea</p> <ul style="list-style-type: none"> • When breathing stops, oxygen levels drop and blood pressure goes up. This cycle can increase the risk of having a stroke. 	<p>Diagnosis and treatment</p>	<ul style="list-style-type: none"> • Weight loss • Wear CPAP at night
<p>❑ Inactivity</p> <ul style="list-style-type: none"> • Exercise can help prevent many stroke complications • Exercise can help both the body and the mind after a stroke • Exercise can help lower blood pressure and LDL cholesterol 	<p>Your stroke team will help you set exercise goals.</p>	<ul style="list-style-type: none"> • Set goals • Schedule time to exercise and rest • Invite family members to join you • Track your progress
<p>❑ Overweight</p> <ul style="list-style-type: none"> • Being overweight more than doubles your risk of having a stroke • Being overweight increases blood pressure 	<p>Lose 5-10% of body weight BMI between 18.5- 24.9</p>	<ul style="list-style-type: none"> • Plan meals and eat on a schedule • Reduce processed foods • Avoid soda and sugary juices • Exercise
<p>❑ Smoking</p> <ul style="list-style-type: none"> • Cigarette chemicals increase plaque buildup which can cause blood clots to form and cause a stroke • Smoking damages vessel walls which can cause clots and make blood vessel walls weaker and more likely to burst • Smoking increases your blood pressure, which increases your risk of having a stroke 	<p>Quit smoking</p>	<ul style="list-style-type: none"> • Take medicine if prescribed • Call the National Smoking Cessation Hotline at 1-800-784-8669 • Ask family and friends to support your goal to quit • Quit4Good.com • Smokefree.gov

Risk Factor	Goal	My Action Plan
<p>☐ Excessive Alcohol</p> <ul style="list-style-type: none"> Alcohol increases blood pressure which increases stroke risk 	<p>No more than 1 drink daily for women and 2 drinks daily for men</p>	<p>For help with alcohol and/or drug dependence:</p> <ul style="list-style-type: none"> Attend support groups Ask your family and friends to support your goal Tell your doctor if you have trouble cutting down on your drinking Call the National Council on Alcoholism and Drug Dependence (NCADD) 800-NCA-CALL (622-2255) for help
<p>☐ Recreational Drugs</p> <ul style="list-style-type: none"> Cocaine, amphetamines, heroin and marijuana all increase the risk of having a stroke Injecting drugs can cause heart infections that lead to stroke 	<p>Do not use recreational drugs</p>	

☐ Carotid Artery Disease

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> Carotid artery disease is when the arteries in the neck that supply blood to the brain get narrowed by plaque About one in three of strokes may be caused by carotid artery disease Treatment for carotid artery disease includes lifestyle changes and medication to reduce LDL cholesterol and/or procedures to reduce the plaque buildup in the carotid arteries | <p>Treat narrowed carotid arteries schedule</p> | <ul style="list-style-type: none"> Discuss your treatment plan with your doctor. It may include medication and lifestyle changes alone, or in combination with a procedure to remove plaque buildup |
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High blood pressure and high cholesterol usually don't have symptoms. Attending your follow-up doctor's appointments is the smartest way to manage those conditions.

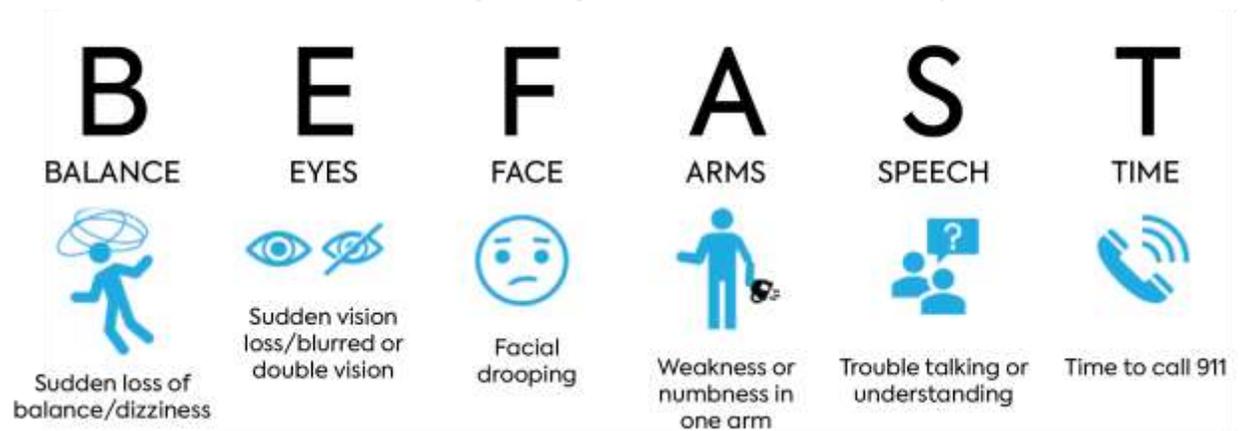
Stroke is an Emergency!

Call 911 immediately when symptoms happen. Even if the symptoms go away, you need immediate medical attention.

Symptoms can include:

- Sudden balance loss, inability to walk straight, dizziness
- Sudden trouble seeing out of one or both eyes
- Facial drooping on one side of the face or uneven smile
- Sudden numbness or weakness on one side of your body or face
- Sudden trouble talking or understanding
- Sudden severe headache with no known cause

CALL 911. When you come by ambulance, the hospital will be contacted and a team will be waiting to begin treatment immediately. Be Fast.



Let's See What You've Learned

	YES	NO	Comments
Do I know what kind of stroke I had?			
Do I know what caused my stroke?			
Do I know the symptoms of a stroke?			
Do I know what to do if I have symptoms of a stroke?			
Do I have a plan in place for an emergency?			
Do I know my stroke risk factors and how to reduce them?			
Do I know my plan for follow-up care when I leave the hospital?			

I am concerned about:

HOW WILL THE STROKE AFFECT ME?

Behavioral & Emotional Changes

Everyone is affected differently by a stroke, and it's nearly impossible to predict the effects you will experience. The lasting effects of a stroke depend on many things, including the size and location of the stroke, the type of stroke and the medical treatment for the stroke. Some emotional and behavioral changes may happen no matter what part of the brain had a stroke.

Invisible impairment

Invisible impairments are changes that aren't immediately noticed by others after you've had a stroke. Things like personality changes, trouble remembering things and difficulty talking or performing tasks may not be noticed by others.

These hidden changes might mean that friends and family expect you to be the same as you were before the stroke. This can lead to embarrassment, frustration or social withdrawal.

Emotional changes

Stroke survivors can have sharp emotional swings that include the inability to control crying or laughing. This is a result of the stroke affecting emotional centers in the brain. Doctors can evaluate your emotional changes and prescribe medicine to help if needed.

Trouble thinking clearly

Planning and doing simple things can be hard for stroke survivors. Survivors may have trouble starting a task, confuse steps in a task or forget to complete tasks.

Judgment

Judgment can also be affected. You may be more impulsive and not be able to reason as well as you did before.

TIPS TO MOVE FORWARD

It helps to be honest with others and to ask for help when you need it.

- Set realistic expectations and goals and get additional support when needed.
- Stay emotionally connected and find activities that you enjoy.
- Have a safe outlet for problem behaviors and changing routines.
- Share your success and progress—no matter how small.
- Attend a support group. Support groups can help ease anxiety and isolation after a stroke.

HOW WILL THE STROKE AFFECT ME?

Physical Changes

Aphasia

Aphasia is a language disorder that affects the ability to talk, read, write and understand. Treatment for aphasia includes speech-language therapy and lots of practice.

Falls

Your balance may be affected. It may be hard to sit, stand or walk.

Swallowing

Sometimes swallowing is affected, making it hard for you to eat or drink. Sometimes choking occurs. Your speech therapist can teach you tips to help you eat and drink safely.

HOW WILL THE STROKE AFFECT ME?

Aphasia

Aphasia is a language disorder that affects the ability to talk, read, write and understand. Treatment for aphasia includes speech-language therapy and lots of practice.

When you have aphasia

- Take your time. Remember it may take a while to get the words out.
- Getting frustrated is OK. Don't blame yourself if you get stuck or stumble on your words.
- Use assistive devices like photos, diagrams, pen and paper.
- Let people know what works best for you. If you get stuck, admit you're struggling. Decide whether to come back to it later.

When you're with someone who has aphasia

- Remember that speech is affected, not intelligence.
- Remove distractions like TV, other people talking, etc.
- Involve the person in family decision-making as much as possible.
- Use yes/no questions.
- Confirm what you think was said.
- Give the person time to talk.
- Speak in short, simple sentences.
- Communicate through touch.

The Benefits of Singing

Research has shown that some types of aphasia can be improved by singing, which involves both melodic and verbal repetition.

Singing can:

- Reduce feelings of frustration and loneliness
- Promote self-expression
- Divert negative thoughts
- Help with predicting and retrieving words

HOW WILL THE STROKE AFFECT ME?

Depression

Depression is common after a stroke. Dealing with life after a stroke involves major adjustments. As you or a loved one learns to deal with changes from the stroke, you may have feelings of sadness, anxiety, frustration or anger.

Depression can begin soon after a stroke or later and can range from mild to something more severe. The physical damage to the brain caused by the stroke can trigger feelings of depression by breaking the connections that control emotions and perceptions.

It's important to know that depression is an illness, not a weakness, and it can negatively impact recovery.

How to Manage Depression

- Professional counseling
- Antidepressant medicine
- Structure time and set goals
- Be physically active every day
- Attend a support group

Signs of depression

- Increased frustration and irritability
- Loss of interest and pleasure in things you used to enjoy
- Feeling sad, blue, empty, down in the dumps
- Crying more than usual
- Feeling worthless
- Problems concentrating
- Withdrawing from family and friends
- Unable to sleep or sleeping too much
- Changes in appetite

HOW WILL THE STROKE AFFECT ME?

Fatigue

After a stroke, almost everyone feels very tired or has some type of fatigue at some point. You are most likely to feel fatigue shortly after your stroke.

Many people say fatigue is the most difficult and upsetting problem they have after a stroke. You may not feel able to engage in rehabilitation because you feel so tired. It can affect your ability to regain your independence and it can be difficult to return to work or to socialize again and enjoy everyday activities.

It's important to pinpoint what's causing you to be tired. That way, you can take action to manage it. Ask your doctor to rule out any medical conditions that may be causing you to feel fatigue.

Tiredness may be caused by the following:

- **Increased energy demands** because stroke recovery uses a lot of energy. Activities like dressing, talking and walking are harder due to the stroke's effects. Thinking, planning and concentration cause you to stay on alert all the time.
- **Emotional changes** cause people recovering from stroke to feel tired. Coping with anger, frustration, sadness or grief is exhausting.
- **Poor sleeping, lack of exercise, poor nutrition, depression or the side effects of some medicine** can also cause you to have less energy than before.

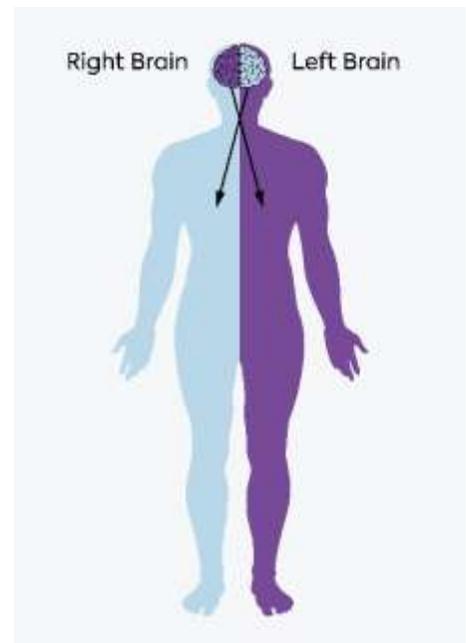
What to do about fatigue

- Give yourself plenty of time. It can take many months before post-stroke fatigue starts to lift. The more you push yourself the worse you are likely to feel. Accepting that it takes time to improve can help you cope better.
- Keep a written or video diary to remind yourself of the progress you've made.
- Don't overdo it on a good day. Although tempting, overdoing it may leave you exhausted the next day.
- Pace yourself by including regular breaks in your daily routines.
- Follow a bedtime routine that includes a slow wind down during the evening.
- Remind yourself that doing everyday tasks takes a lot more energy than before. Think of a toddler learning new things every day. Toddlers need naps in the day and go to bed early.
- If you feel yourself getting frustrated or angry, consider taking a rest to regain energy.
- Schedule challenging tasks soon after waking when you have the most energy.

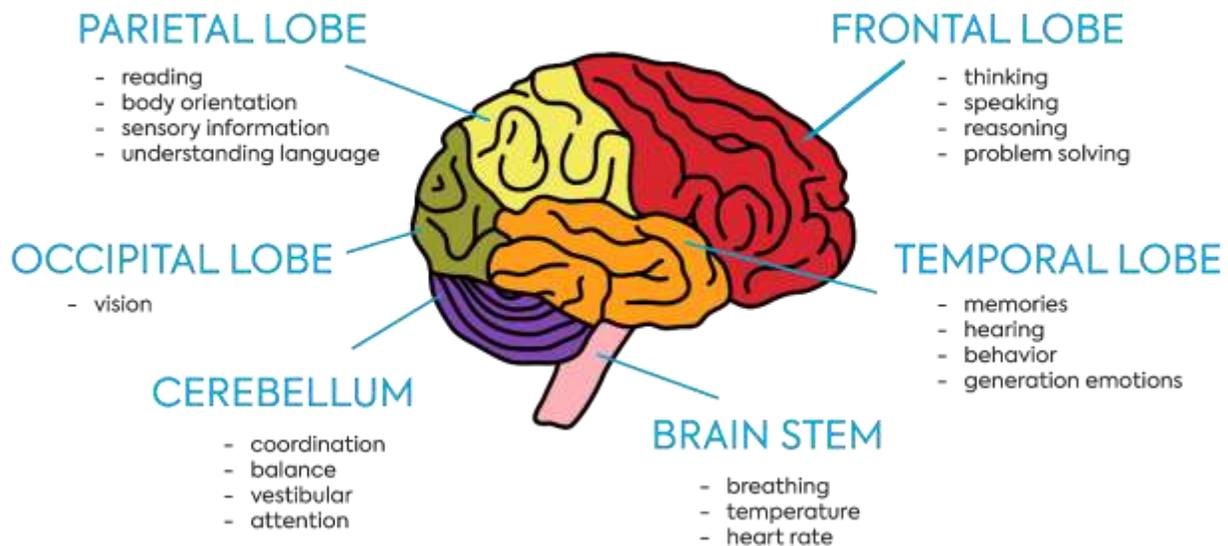
HOW WILL THE STROKE AFFECT ME?

How Areas of the Brain are Affected

In general, the right side of the brain controls the left side of the body, so a stroke in the right brain means the left side of the body will be affected. A stroke in the left brain means the right side of the body is affected.



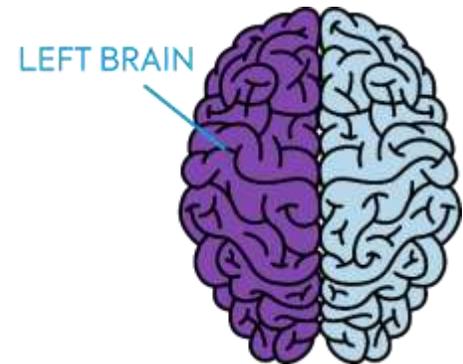
FUNCTIONAL AREAS OF THE BRAIN



HOW WILL THE STROKE AFFECT ME?

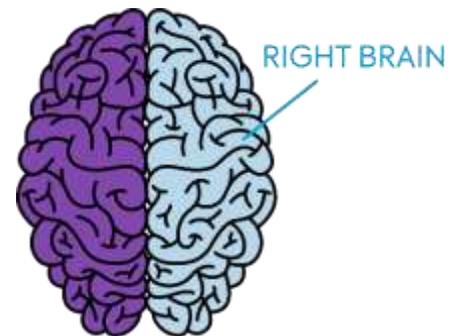
Left brain stroke

- Right sided paralysis or weakness
- Emotional changes
- Chewing or swallowing problems
- Difficulty communicating (aphasia)
- Trouble focusing
- Trouble seeing things on the right side
- Lack of feeling and position on the right
- Short-term memory problems
- Trouble with problem solving
- Slow, cautious behavior



Right brain stroke

- Left sided paralysis or weakness
- Trouble expressing emotion
- Trouble reading body language
- Trouble reading tone of voice
- Trouble seeing things on the left side
- Inability to recognize left sided body parts
- Lack of awareness of injuries
- Impulsive behavior
- Trouble with depth perception



HOW WILL THE STROKE AFFECT ME?

Brainstem Strokes

Brainstem strokes can be very harmful because the brainstem controls things we don't think about, like eye movements, breathing, hearing and swallowing.

When a stroke occurs in the brain stem it can affect both sides of the body and may leave someone with locked-in syndrome.

When locked-in syndrome occurs, the person is generally unable to talk or move below the neck.

Brainstem strokes can cause:

- Weakness or paralysis on both sides of the body
- Sensory loss
- Breathing problems
- Swallowing problems
- Problems with consciousness
- Double vision
- Trouble coordinating muscle movement

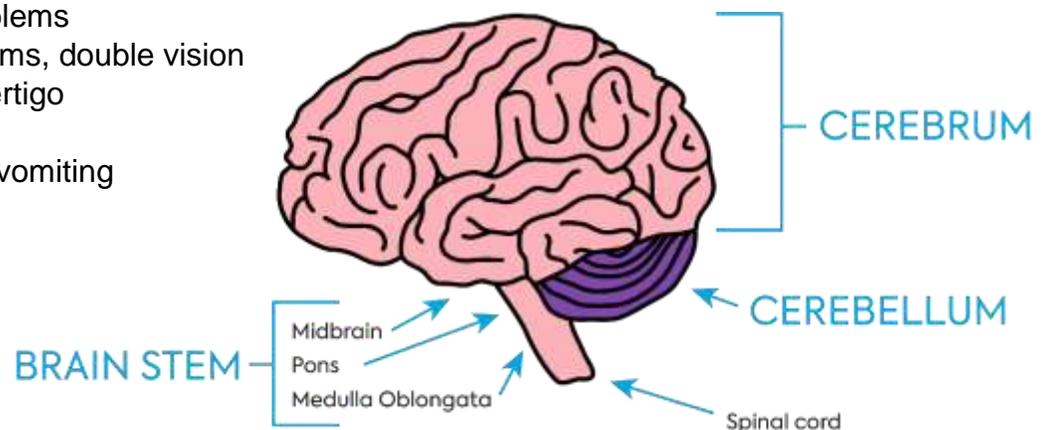
Cerebellar Strokes

The cerebellum is located at the back of the brain, it has a right and left side. The cerebellum controls many of our reflexes, our balance and our coordination.

Strokes that affect the cerebellum may also affect the vision area in the back of the brain.

Strokes in the cerebellum can cause:

- Abnormal reflexes
- Balance problems
- Vision problems, double vision
- Dizziness, vertigo
- Headaches
- Nausea and vomiting



HOW WILL THE STROKE AFFECT ME?

Lacunar Strokes

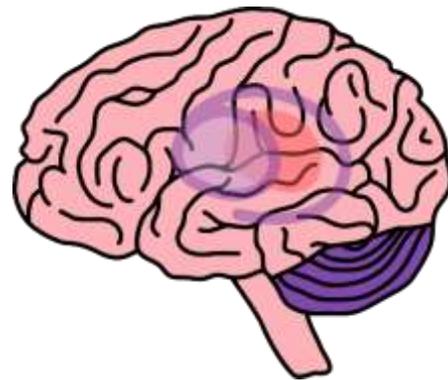
Sometimes a stroke happens in the small arteries deep in the brain. These strokes are usually small and deep within the brain. They are called lacunar strokes and are usually related to high blood pressure over a long period of time.

Lacunar strokes affect the messengers in the middle of the brain. Movement, vision, judgement and motivation may be affected.

People often begin to recover within hours or days of a lacunar stroke. Lacunar strokes have a better rate of recovery than other strokes that involve larger blood vessels.

Lacunar strokes may cause:

- Weakness on one side of the face
- Sudden numbness
- Clumsiness of a hand or arm
- Muscle weakness



Rehabilitation

While you are in the hospital, the therapy team will evaluate you to see if you need any therapy to help you recover.

Therapy can assist you with improving physical, mental and emotional functions to restore your independence as much as possible.

The therapy team has three branches:

- Physical therapy
- Occupational therapy
- Speech therapy

They will set goals with you and recommend a plan to meet those goals.

Most stroke rehab programs last several weeks to months after you leave the hospital.

Physical therapy

- Coordination
- Strength
- Endurance
- Mobility

Occupational therapy

- Eat
- Dress
- Bathe
- Adapt

Speech therapy

- Speech
- Language
- Swallowing

Recovery

Stroke recovery is a life-long process. Each survivor's outcomes may be different, even if they had a stroke in the same area of the brain.

The effects of a stroke depend on many things, including the location in the brain and how much brain tissue was damaged.

There is still a lot we don't know about how the brain makes up for damage caused by a stroke. Sometimes, affected brain cells are only temporarily damaged and can resume functioning.

Other times, an undamaged part of the brain can take over for an area damaged by the stroke and allow some function to return.

The greatest improvement in functional outcome occurs in the first three months after a stroke. After that, recovery slows down, but function may continue to improve up to and sometimes beyond one year after a stroke.

Many stroke survivors lead fulfilling lives and will be able to return to work, driving, hobbies and meaningful activities. There may, however, be some barriers that need to be addressed.

Problems with thinking, concentration, emotions and memory may be invisible and not recognized by those around you. Be honest—let others know that you're recovering from a stroke. Tell people that you may need reminders and more time to complete tasks that used to be second nature.

An important part of recovering from a stroke is setting goals. Work with your rehabilitation team to set realistic goals. To reach a goal, you may have to reach a number of short term goals, such as learning to stand alone, walking with a cane, etc.

Here are some tips that are proven to help your recovery after a stroke:

1. **Set goals:** Goal setting increases motivation, shows your progress and lets you know when you have achieved success.
2. **Practice and repeat:** Building new circuits in the brain takes lots of repetitive and focused practice. Keep at it and you'll see results.
3. **Make social connections:** People with lots of social connections have a faster and more extensive recovery after stroke than socially isolated people. Take advantage of the support groups listed in this booklet to cultivate connections.

My Self Care Goals

	YES	NO	Comments
Do I know what kind of stroke I had?			
Do I know what caused my stroke?			
Do I know the symptoms of a stroke?			
Do I know what to do if I have symptoms of a stroke?			
Do I have a plan in place for an emergency?			
Do I know my stroke risk factors and how to reduce them?			
Do I know my plan for follow-up care when I leave the hospital?			

I am concerned about:

Choosing Food

Eating after a stroke

After a stroke, you may have:

- Problems using your arm or hand, making it harder to eat and drink
- Problems with memory and thinking, which might make you forget to eat
- Loss of appetite—you may not feel hungry
- Swallowing problems
- Speech and occupational therapists can help you adapt to these challenges after a stroke

Food choices

What you eat and drink has an enormous impact on your risk of having another stroke. Following the food recommendations on this page can help reduce your stroke risk by:

- Lowering blood pressure
- Lowering LDL cholesterol
- Raising HDL cholesterol
- Losing weight
- Helping to lower blood sugar

Most of the Time	Moderation	Rarely	NO! NO! NO!
 <ul style="list-style-type: none"> <input type="checkbox"/> Fruit <input type="checkbox"/> Vegetables <input type="checkbox"/> Nuts <input type="checkbox"/> Legumes <input type="checkbox"/> Whole grains <input type="checkbox"/> Fish <input type="checkbox"/> Herbs <input type="checkbox"/> Extra virgin olive oil 	 <ul style="list-style-type: none"> <input type="checkbox"/> Poultry <input type="checkbox"/> Eggs <input type="checkbox"/> Cheese <input type="checkbox"/> Milk <input type="checkbox"/> Yogurt 	 <ul style="list-style-type: none"> <input type="checkbox"/> Red meat 	 <ul style="list-style-type: none"> <input type="checkbox"/> Sugar-sweetened drinks <input type="checkbox"/> Processed meat <input type="checkbox"/> Packaged crackers, chips and cookies <input type="checkbox"/> Refined grains <input type="checkbox"/> Trans fatty acids <input type="checkbox"/> Fast food

RAINBOW APPROACH

- When shopping for groceries, go for the outside aisles where fresh produce lives.
- Choose an assortment of dark red, deep green, blue and purple colors to get the most nutrients.
- Aim for 5 or more servings of fruits and vegetables every day.

AVOID SODA & SUGARY JUICES

A recent study found a higher risk of stroke in people who drank more than one soda per day. Even diet soda increased the risk.

EAT FISH AT LEAST TWICE A WEEK

- Especially fish with omega-3 fatty acids like salmon, trout and tuna.
- How fish is cooked is as important as choosing fish to eat. Avoid fried, processed frozen or breaded fish.
- Choose broiled, grilled, sauteed fish instead.

Caregivers

Strokes are a sudden, unplanned event. Family members and friends may be pulled into a caregiver role without previous experience or training. Caregivers are essential to the recovery of a person affected by stroke. However, the caregiver must be sure to balance the demands of their role with their personal needs. When someone in the family has a stroke, roles may change that alter the familiar family dynamic.

The needs of the stroke survivor may change over the course of their recovery, as will the role and needs of the caregiver. Keep open communication with one another to ensure the ever-changing needs of both people are being addressed.

Tips for caregivers

- Educate yourself on stroke and deficits specific to your loved one.
- Seek support and guidance from others.
- Monitor for signs of caregiver burnout.
- Research resources and facilities to determine how their services align with the stroke survivor and your needs.
- Research funding for care. Check with your insurance. Determine if your state provides waivers to offset the cost. Options can be found through the federal government's Administration on Aging (aoa.gov) and/or your state's agency on aging (n4a.org) to identify your options.

Caregiver assistance

- **Respite care:** Short-term, temporary relief to those who are caring for family members who might require permanent placement in a facility outside the home. Caregivers providing unpaid care are eligible for respite care under the 2006 Federal Lifespan and Respite Care Act.
- **Adult day care:** Professional supervision of adults in a social setting during the day.
- **Home health aide:** In-home personal healthcare assistance.
- **Family and friends:** Get assistance from family and friends to give you time to do required tasks or engage in leisure pursuits.

Support Groups—In Person

To search for support groups/activities by zip code, visit:

- **American Stroke Association** at stroke.org
- **Brain Injury Association of Georgia** at braininjurygeorgia.org

Aphasia Conversation Group	Third Thursday of the month 4 PM	Kennestone Outpatient Rehabilitation Center 100 Lacy St., Building 220 Marietta, GA 30060 <i>*Contact Alexandra Arversen at (770) 793-7600</i>
Living with Stroke Monthly Support Group	Last Tuesday of the month 2 PM	HealthSouth Rehabilitation Hospital 2101 E. Newnan Crossing Blvd. Newnan, GA 30265 <i>*Contact Marsha Morgan at (678) 552-6253 or marsha.morgan@healthsouth.com</i>
Miracles Happen Brain Injury Support Group	Second Tuesday of the month 7 PM	Southern Regional Medical Center 11 Upper Riverdale Road Education building, lower level, room A or B Riverdale, GA 30272 <i>*Contact Pat Buice at (678) 773-4930</i>
Unlimited Possibilities	Every Friday 10 AM	First Step PT 965 Piedmont Road, Suite 200 Marietta, GA 30066
Young and Restless of Atlanta / Young Stroke Support Group	Third Thursday of the month 6 PM	FYZICAL Therapy and Balance 4920 Roswell Rd. NE #36 Atlanta, GA 30342 <i>*Contact Dr. Shilpa Krishnan, PT at (412) 759-7424</i>
Wellstar North Fulton Medical Center Stroke Support Group	Last Wednesday of the month 6:30 PM	Wellstar North Fulton Medical Center 3000 Hospital Blvd. Alpharetta/Milton classrooms Roswell, GA 30076 <i>*Contact Virginia Cunningham at (770) 751-2649 or virginia.cunningham@wellstar.org</i>

Support Groups—Virtual

To search for support groups/activities by zip code, visit:

- **American Stroke Association** at stroke.org
- **Brain Injury Association of Georgia** at braininjurygeorgia.org

SM Clark for Seniors	First Monday of the month 7 PM	<i>*Contact 904-885-4426 or smclarkforseniors@gmail.com</i>
Wellstar North Fulton Medical Center Stroke Support Group	Last Wednesday of the month 6:30 PM	<i>*Contact Virginia Cunningham at (770) 751-2649 or virginia.cunningham@wellstar.org</i>
Young and Restless of Atlanta / Young Stroke Support Group	Third Thursday of the month 6 PM	Zoom link: @ynratlanta.com <i>*Contact Dr. Shilpa Krishnan, PT at (412) 759-7424</i>

Caregiver Resources

Family Caregiver Alliance	caregiver.org
National Institute of Neurologic Disorders and Stroke	ninds.nih.gov/health-information/patient-caregiver-education
Stroke Family Warmline —The Stroke Family Warmline connects stroke survivors and their families with an American Stroke Association team member who can provide support, helpful information or a listening ear.	1 (888) 4-STROKE 1 (888) 478-7653 stroke.org/en/help-and-support/support-you-are-not-alone/stroke-familywarmline

Stroke Resources

American Stroke Association	stroke.org
American Heart Association Support Network	supportnetwork.heart.org
Brain Aneurysm Foundation	bafound.org
Center for Disease Control and Prevention	cdc.gov/stroke
Joe Niekro Foundation	joeniekrofoundation.com
National Aphasia Association	aphasia.org
National Institute of Neurologic Disorders and Stroke (NINDS)	ninds.NIH.gov
Stroke Connection	stroke.org/stroke-connection

Smoking Cession Resources

Georgia Tobacco Quit Line	1 (877) 270-STOP (7867)
EX	becomeanex.org



wellstar.org