Ochsner | LSU Health SHREVEPORT

STROKE CENTER

Stroke Patient Education Handbook: A Guide to Understand Stroke

Learn the associated risk factors, ways to lower your risk of having a stroke and how to BE FAST to save a life in the case of a stroke.

If you suspect a stroke contact 911 immediately.

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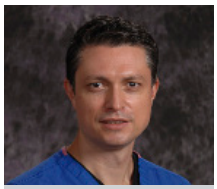

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The Stroke Care Team and Treatments We Provide

Ochsner LSU Health Shreveport is an Academic Medical Center combining medical education and cutting-edge research, to provide the best possible clinical care available. This Academic Medical Center includes Ochsner and LSU Health Shreveport - Louisiana State University's School of Medicine, School of Allied Health Professionals and School of Graduate Studies training the nation's finest healthcare professionals. Our physicians and scientists have participated in many important discoveries, with ongoing research. With physicians, nurses, researchers, and teachers all working in unison, our patients have better access to the latest medical breakthroughs and clinical trials that are not at other hospitals.

Ochsner LSU Health Shreveport is a Certified Stroke Center by The Joint Commission, providing comprehensive treatment for stroke. Comprehensive stroke treatment means we treat all types of stroke using the latest treatment therapies. Treatment within hours of the first symptom of a stroke can help limit disability and permanent damage for some strokes. There are two main types of stroke:

Ischemic (i-skee-mik) Stroke

- Most common
- Caused by clot(s) blocking blood vessel(s) within the brain or that supply the brain
- Blood flow and oxygen is blocked which can cause neurons to die within minutes

Common terms that might be heard include **embolic** and **thrombotic** to describe ischemic stroke. These terms refer to the clot forming processes. Lacunar strokes refer to the blockage of small vessels deep in the brain. As with all strokes the area affected determines the symptoms the patient will have. Ischemic strokes that result from a blockage in one of the major arteries of the brain are known as **Large Vessel Occlusions** (LVOs).
Treatment: Intravenous thrombolysis is commonly given if diagnosed within less than 4.5 hours from symptom onset of stroke and the patient qualifies for this type of therapy. It works by dissolving the clot causing stroke. Mechanical thrombectomy (MT) preceded by intravenous thrombolysis is the gold standard treatment in LVOs. MT is only offered by stroke centers with endovascular capabilities. Ochsner LSU Health Shreveport has endovascular capabilities.

Hemorrhagic (hem-er-ah-jik) Stroke

- Less common and often severe
- Caused by ruptured blood vessels that bleed into and around the brain

Ischemic Strokes can become hemorrhagic. A hemorrhagic stroke occurs when a weakened blood vessel in the brain ruptures (bursts). There are two types of hemorrhagic stroke: intracerebral and subarachnoid. **Intracerebral**: when a ruptured blood vessel bleeds into the tissue deep within the brain. **Subarachnoid**: a blood vessel bursts near the surface of the brain and bleeds into the area between the brain and the skull. There are two types of weakened blood vessels that usually cause hemorrhagic stroke: **aneurysms**, and **arteriovenous malformations** (AVMs).
Treatment: Immediate treatment and management are focused on stopping the bleed and reducing pressure on the brain. Treatment may include a combination of drugs to reduce blood pressure, slow down bleeding, counteract the effects of blood thinners, and surgical interventions to stop bleeding. Surgical clipping is a procedure to close off brain aneurysm. Endovascular coiling is less invasive than surgical clipping for brain aneurysm. Other interventions include artery occlusion and bypass. AVM treatment aims to remove risk of rupture and bleeding.

The Stroke Care Team and Treatments We Provide

The Neuroscience Care Team lead by vascular neurology (stroke), neurology, neurosurgery, neurointerventional, neuroradiology, and stroke center administration provide the most advanced stroke care services needed to achieve your best possible recovery. We have a unique team approach of expert healthcare professionals working together to determine the best treatment plan to meet the individual needs of our stroke patients. Your team includes highly trained doctors, residents, advanced practice providers, nurses, speech language pathologists, occupational and physical therapists, radiologist, lab professionals, dietitians, social workers, case managers, administrators, and other healthcare professionals working in Emergency Medicine, Rapid Response, the Stroke/Neuroscience Acute Care Unit, Neurosurgery Intensive Care Unit, Neuroscience Care Unit, Intensive Care Units, and interventional Radiology.

Ochsner LSU Health has been nationally recognized for the quality of our stroke care. Along with the Neuroscience Care Team, the entire multidisciplinary stroke team cares for more patients who have experienced a stroke than any other provider in our area. In fact, we see patients from East Texas, Mississippi, southern Arkansas, much of Louisiana and beyond.

Not all patients will be candidates for thrombolysis therapy for a stroke. Your physician will determine which treatment is best for your stroke. Our stroke team members provide treatment that is based on guidelines from the American Heart Association/American Stroke Association to ensure the highest quality care.

About Our Guide

This book was created as a guide for patients and caregivers of those who have had a stroke or Transient Ischemic Attack (TIA). Stroke affects patients and their family. Our goal is to provide the highest quality medical care so you can get back to your life as quickly and fully as possible. When you or your loved one has a stroke, there may be feelings of being alone, fear, anxiety, and questions. While this is a difficult time, you are the center of the Ochsner LSU Health Shreveport Stroke Team and Neuroscience Care Team. Use this book as a guide and personal reference and share with family and friends.

In this guide, the words "stroke survivor" may be used instead of "patient" to refer to someone who has had a stroke. This is because people who have had a stroke are patients for only a short time, first in the hospital and then perhaps in a rehabilitation program. For the rest of their lives, they are people who have had a stroke. The word "family" is used to include people who are close to the stroke survivor, whether or not they are relatives. Recovery works best when stroke survivors and their families work together. For this reason, both stroke survivors and family members are encouraged to read all parts of the Ochsner LSU Health Stroke Patient Education Guide.

The Joint Commission®

American Heart Association®

American Stroke Association®

STROKE CERTIFICATION

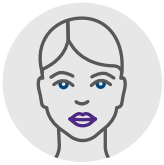
Is It a Stroke? BE FAST.

Balance

Sudden loss of balance or coordination

Eyes

Sudden loss of vision



Face

Sudden numbness or weakness of face

Arms

Sudden numbness or weakness of arm or leg

Speech

Sudden loss of speech or confusion

Time

Time symptoms started and time to call 911

Stroke is a serious medical emergency. Do not wait. Call 911 for any one sign or symptom of stroke.

Warning Signs of a Stroke

- Sudden loss of balance or coordination, dizziness or trouble walking.
- Sudden loss of vision or trouble seeing in one or both eyes.
- Sudden numbness of the face or facial drooping.
- Sudden numbness or weakness of the arm or leg, especially on one side of the body.
- Sudden loss of speech, trouble speaking, confusion or trouble understanding.
- Sudden and severe headache.

Lowering Risk Factors and Possible Stroke Prevention

A stroke can occur at any age, but your risk for a stroke doubles every 10 years after age 55. Gender is another uncontrollable risk factor as men tend to have an increased risk of a stroke over women.

There are certain factors that increase your chances of having a stroke. Some of these factors can be controlled, but others cannot be controlled. In addition to age and gender, some factors that cannot be controlled include having had a previous stroke, race, personal circumstances, and family or medical history.

To reduce your risk of stroke:

Follow recommendations to control:

- High Blood Pressure
- Atrial Fibrillation
- High Cholesterol
- Diabetes
- Sickle Cell Disease
- Peripheral Artery Disease
- Carotid or other Artery Disease
- Other Heart Diseases
- Obstructive Sleep Apnea (OSA)

If you smoke, stop.
Include exercise in your daily routine.
Enjoy a low sodium (salt), low fat diet.
Limit alcohol/drug intake.

Talk with your healthcare provider regarding appropriate physical activity for you.

What is a Stroke?

Nearly 800,000 Americans suffer a stroke each year. A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain either bursts, ruptures (**hemorrhagic**) or is blocked by a clot (**ischemic**). As a result, the brain cannot get the blood and oxygen it needs
and the affected parts of the brain begin dying.

A **transient ischemic attack** or TIA is a mini-stroke. It's a serious warning sign of a large stroke. TIAs happen when an artery to the brain is temporarily blocked. This blockage will cause symptoms identical to those that happen with a stroke. The only difference is that they last a short period of time, from a few seconds to a few hours. Never ignore any stroke symptoms. Call 911 right away.

Stroke is the leading cause of serious, long-term disability in the United States. Approximately 2000 people in Louisiana die of a stroke each year, with stroke being the number four killer in Louisiana. Despite improvements in stroke treatment in the United States, stroke remains the second leading cause of death worldwide. A stroke occurs every 40 seconds, according the American Stroke Association.

For many people a stroke happens suddenly and without warning. A stroke can affect how you move, speak, think and feel. Although everyone's experience as a stroke survivor is different, some of the effects are more common than others.

Healthcare professionals actively participate in educating stroke survivors and their families to understanding stroke and the care provided. The management of a stroke is interdisciplinary and includes emergency medicine service professionals, emergency medicine physicians, neurologists, radiologists, neurointerventionalists, APPs, nurses, case managers, physical therapists, occupational therapists, speech language pathologists and other health professionals.

Rapid and effective evaluation, identification, diagnosis and treatment of a stroke is vital in decreasing stroke morbidity and mortality.

Understanding My Stroke

Your treatment and recovery may depend on the type of stroke you have experienced. Where in the brain did my stroke happen? What risk factors do you have? Use this stroke worksheet to record this important information.

1. The type of stroke I experienced is:

- ☐ **Ischemic**
  - ___ Thrombotic (clot forming in vessel that feeds the brain)
  - ___ Embolic (clot traveling to brain from another part of the body)
  - ___ Low Blood flow
- ☐ **Hemorrhagic**
- ☐ **Transient ischemic attack (TIA)**

2. The cause of my stroke is: _____

_____

3. The location of my stroke is:

- ___ Right sided
- ___ Left sided
- ___ Brain stem

4. My initial stroke deficits are:

- ___ Right sided
- ___ Left sided
- ___ Other _____

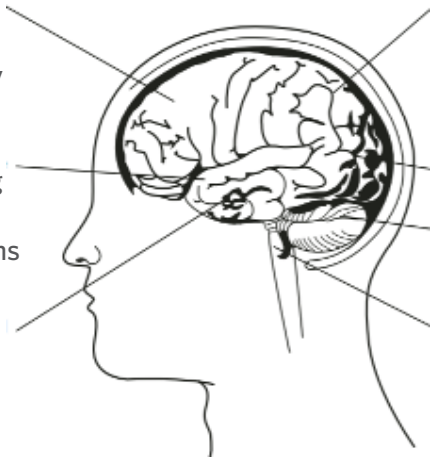
You and Your Brain

The brain is the control center of your entire body. Each part of the brain is responsible for controlling a different function of the body, such as breathing, language or emotions. The diagram below outlines the parts of the brain and functions for which they are responsible.

Frontal Lobe
- Movement
- Intelligence
- Reasoning
- Behavior
- Memory
- Personality

Temporal Lobe
- Speech
- Behavior
- Memory
- Hearing
- Vision
- Emotions

Pituitary Gland
- Hormones
- Growth
- Fertility



Parietal Lobe
- Intelligence
- Reasoning
- Reading
- Language
- Sensation
- Telling right from left

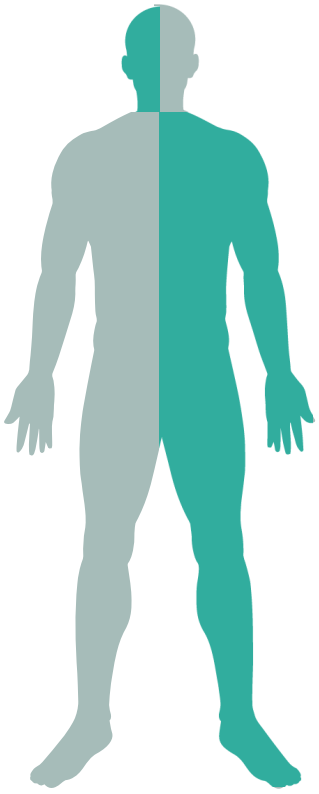
Occipital Lobe
- Vision

Cerebellum
- Balance
- Coordination
- Fine muscle control

Brain Stem
- Breathing
- Blood pressure
- Heartbeat
- Swallowing

Right-Brain vs. Left-Brain Stroke

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



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

Common Effects of a Stroke

As a stroke survivor, you are likely to have some disabilities in the first few weeks after having a stroke. Many stroke survivors will make a good recovery, but some will be left with a long-term disability. The effects of a stroke may vary from person to person. The effects may vary from mild to severe. The changes you see will depend on the location of the stroke, how quickly your received treatment, your health at the time of the stroke and whether you have had any complications. The effects of a stroke are greatest in the first days and weeks after the stroke.

Weakness, loss of movement or sensation

Weakness, clumsiness or paralysis are the most common effects of a stroke. The effect usually happens on one side of your body and is made worse by stiffness (spasticity) of the muscles. You may be very sensitive to heat, cold, light, sound or sharp objects. You may experience unsteadiness or loss of balance affecting one side of your body.

Problems thinking and remembering

You may experience trouble thinking clearly or concentrating. You may become forgetful, or feel like your memory is playing tricks on you.

Trouble communicating

A stroke may cause trouble speaking, reading, writing and understanding what other people are saying. Some stroke survivors have difficulty with language. This is known as aphasia. You may have trouble saying what you are thinking. Some strokes may affect the muscles used in talking and swallowing, causing your speech to be slurred or difficult to understand.

Problems eating or swallowing

"You may have trouble swallowing after a stroke. About 40% of people have trouble with swallowing after a stroke (which is known as dysphagia). Some people recover quickly, for many this can be dangerous if food goes down the wrong way, getting into your windpipe causing infection in your chest like pneumonia.

You may have a swallowing problem, if you:

- Cough or choke when eating or drinking
- Have difficulty managing liquids or chewing foods
- Need extra time or effort to eat
- Develop pneumonia
- Lose weight or become dehydrated

Dental Care Due to the loss of muscle control and sensation, stroke patients are at high risk for dental problems. Risk factors may include food accumulation on affected side, accidental cheek or tongue biting, burns from hot food, dry mouth due to medications, loose or unclean dentures, and poor nutritional status. A thorough dental program may include frequent rinsing with water or use of an irrigating device, testing temperature of food before eating, adjusting and daily cleaning of dentures, and regular check-ups by dental professionals.

Common Effects of a Stroke

Control of bladder and bowels

Difficulty controlling your bladder and bowels (incontinence) is common for stroke survivors. Most people get control back after a few weeks.

Pain

You might experience muscle tightness (spasticity) or pain.

Vision

You may experience different types of vision problems such as double vision, or part of your vision may be lost (where you can see everything on one side but not on the other), known as hemianopia. You may not be able to read or have difficulty getting dressed.

Changes in emotions, behavior and perception

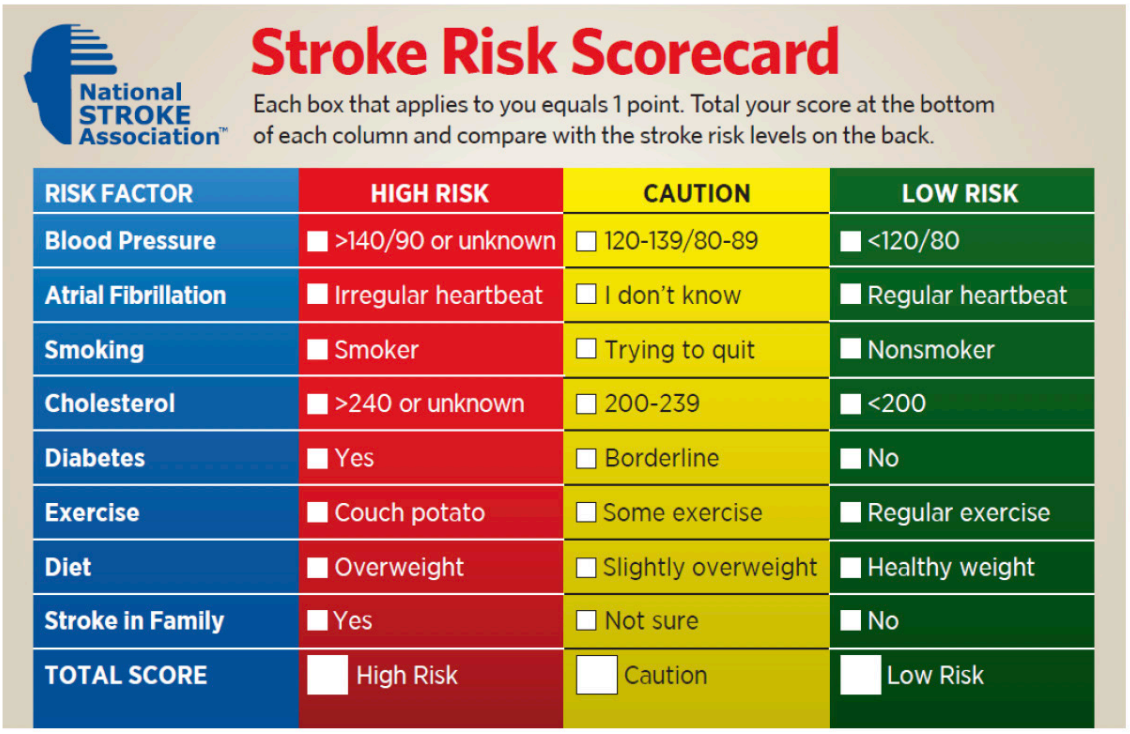
Emotional changes may occur if the stroke damages parts of the brain that controls behavior. These changes may also be caused by the body's reaction to the stroke. It is advisable to discuss with a doctor if emotional changes become severe or if they don't go away. It is not unusual for symptoms of depression to be treated for 6 months to a year while learning to cope with the changes associated with a stroke. Re-evaluation by your healthcare providers may determine when medication can be discontinued.
Emotional changes that may occur include:

- Anxiety: Feeling uneasy or anxious for no reason.
- Depression: It is normal to feel sad after a stroke. Being dependent on others may cause frustration. This may lead to feelings of helplessness, hopelessness and poor self-esteem. Depression may be caused by chemical imbalances in the brain. But there is a deeper sadness that may show up right after a stroke, or many weeks later. Clinical depression is defined as a disorder characterized by inability to concentrate, insomnia, loss of appetite, anhedonia, feelings of extreme sadness, guilt, helplessness, and thoughts of death.
- Emotional ability (limited control over feelings and reactions): Laughing, crying, or becoming upset more easily, or at the wrong times.
- Loss of inhibition: Temper outbursts (verbal or physical) may be the only way to express frustration at being unable to do simple, familiar things.
- Mood swings: Fluctuating between feeling happy, sad or angry without warning. Family members will need to be understanding and patient. Mood swings may improve during the recovery process.
- Self-centeredness: Focusing on individual needs and inattention to caregiver or family."

Sleep and tiredness

You might suffer from extreme tiredness (fatigue) during the first few weeks after a stroke. You may also have difficulty sleeping, which can make you even more tired. This fatigue can continue for many months. Being constantly tired may also be a sign of depression or a side effect of medication you are taking. Talk to your physician for advice.

Stroke Risk Scorecard

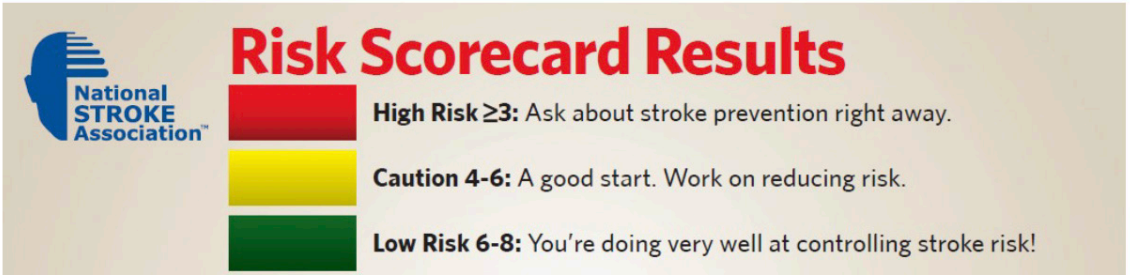


National STROKE Association™

Stroke Risk Scorecard

Each box that applies to you equals 1 point. Total your score at the bottom of each column and compare with the stroke risk levels on the back.

RISK FACTOR	HIGH RISK	CAUTION	LOW RISK
Blood Pressure	☐ >140/90 or unknown	☐ 120-139/80-89	☐ <120/80
Atrial Fibrillation	☐ Irregular heartbeat	☐ I don't know	☐ Regular heartbeat
Smoking	☐ Smoker	☐ Trying to quit	☐ Nonsmoker
Cholesterol	☐ >240 or unknown	☐ 200-239	☐ <200
Diabetes	☐ Yes	☐ Borderline	☐ No
Exercise	☐ Couch potato	☐ Some exercise	☐ Regular exercise
Diet	☐ Overweight	☐ Slightly overweight	☐ Healthy weight
Stroke in Family	☐ Yes	☐ Not sure	☐ No
TOTAL SCORE	☐ High Risk	☐ Caution	☐ Low Risk



National STROKE Association™

Risk Scorecard Results

High Risk ≥3: Ask about stroke prevention right away.

Caution 4-6: A good start. Work on reducing risk.

Low Risk 6-8: You're doing very well at controlling stroke risk!

Factors You Cannot Control

Age

The older you are, the higher your risk of stroke for both males and females. Even though stroke can occur at any age, a stroke is more common among the elderly. Even babies and children can have a stroke.

Gender

Women have more strokes than men and strokes kill more women than men. Women tend to live longer than men and are older when they have a stroke. Factors that may increase stroke risks for women include pregnancy, history of preeclampsia/eclampsia or gestational diabetes, oral contraceptive use (especially when combined with smoking) and post-menopausal hormone therapy. Be sure to discuss your risks with your doctor.

Family and Medical History

If your parent, grandparent, sister or brother has had a stroke (especially before reaching age 65) you may be at greater risk. Sometimes strokes are caused by genetic disorders like CADASIL, which can block blood flow in the brain.

Race of Heritage

African Americans have a much higher risk of death from a stroke than Caucasians do. This is partly because of the higher risks of high blood pressure, diabetes and obesity. Compared to Caucasians, Hispanics have a 50% higher risk of a stroke.

Prior Stroke, TIA, or Heart Attack

A person who has had a prior stroke has a much higher risk of having another stroke than a person who has never had one. A person who has had one or more transient ischemic attacks (TIAs) is almost 10 times more likely to have a stroke than someone of the same age and sex who hasn't. TIAs are smaller, temporary blockages in the brain that can produce milder forms of stroke-like symptoms but may not leave lasting damage. A TIA is a medical emergency. Follow up immediately with a healthcare professional.

If you've had a heart attack, you're at higher risk of having a stroke. A heart attack is caused by plaque buildup that blocks blood vessels to the heart. Similarly, most strokes are caused by a buildup of plaque that cause blockages in the brain.

Personal Circumstances

Being inactive, obese or both can increase your risk of high blood pressure, high blood cholesterol, diabetes, heart disease and stroke. You should try to go on a brisk walk, take the stairs and do whatever you can to make your life more active. Try to get a total of at least 30 minutes of activity on most or all days.

Factors You Can Control

High Blood Pressure (Hypertension)	High Blood Pressure (HBP) is the number 1 cause of a stroke and the most important controllable risk factor for a stroke. People who are overweight or obese, over age 35, have a family history of HBP, African Americans, pregnant women, those who are physically inactive, those that eat too much salt or drink too much alcohol are at higher risk for HBP.
High Cholesterol	It also appears that low high-density lipoprotein (HDL) ("good") cholesterol is a risk factor for a stroke in men, but more data is needed to verify its effect in women.
Diabetes	Many people with diabetes also have high blood pressure, high blood cholesterol and are overweight. This increases their risk even more. Though diabetes is treatable, the presence of the disease still increases your risk of a stroke.
Smoking	The nicotine and carbon monoxide in cigarette smoke damages the cardiovascular system in many ways. The use of oral contraceptives combined with cigarette smoking greatly increases stroke risk.
Excess Weight and/or Not Exercising	Being inactive, obese or both can increase your risk of high blood pressure, high blood cholesterol, diabetes, heart disease and stroke. You should try to go on a brisk walk, take the stairs and do whatever you can to make your life more active. Try to get a total of at least 30 minutes of activity on most or all days.
Alcohol/Drug Abuse	If you drink alcohol, limit your intake (no more than one drink per day for women and two drinks per day for men).
Sickle Cell Disease	This genetic disorder mainly affects African American and Hispanic children. "Sickled" red blood cells are less able to carry oxygen to tissues and organs. These cells also tend to stick to blood vessel walls, which can cause a stroke.

Factors You Can Control

Peripheral Artery Disease

This is the narrowing of blood vessels carrying blood to leg and arm muscles. It's caused by fatty buildups of plaque in artery walls. People with peripheral artery disease have a higher risk of carotid artery disease, which raises their risk of a stroke.

Carotid or other Artery Disease

The carotid arteries in your neck supply blood to your brain. A carotid artery narrowed by fatty deposits from atherosclerosis may become blocked by a blood clot. Carotid artery disease is also called carotid artery stenosis.

Irregular Heart Rhythm

This is when the heart's upper chambers quiver instead of beating effectively, which can let the blood pool and clot. If a clot breaks off, enters the bloodstream and lodges in an artery leading to the brain, a stroke results.

Other Heart Diseases

People with coronary heart disease or heart failure have a higher risk of a stroke than those with hearts that work normally. Dilated cardiomyopathy (an enlarged heart), heart valve disease and some types of congenital heart defects also raise the risk of a stroke.

Obstructive Sleep Apnea (OSA)

A person is considered at risk for OSA if two or more of the following occurs:

- Witnessed apneas or pauses in breathing during sleep
- Obesity, defined as BMI > 35
- Neck circumference > 15 3/4 inches
- Male gender
- Age > 50
- Excessive daytime sleepiness
- Snoring loudly

The more items you identify with, the higher the risk.
According to the National Stroke Association, sleep apnea can be an after effect of stroke or the cause of a first-time or recurrent stroke. OSA causes low oxygen levels and high blood pressure, both of which can increase the risk of stroke. Your doctor can refer you to a sleep specialist to determine if you have OSA

Poor Diet

Diets high in saturated fat, trans fat and cholesterol can raise blood cholesterol levels. Diets high in sodium (salt) can contribute to increased blood pressure.

Hypertension

Hypertension, commonly called high blood pressure, is known as the “silent killer”. This is because high blood pressure typically does not cause any symptoms. Many individuals don’t know that they have high blood pressure until other problems develop. The good news is that high blood pressure can be managed.

What Can You Do?

If your blood pressure is too high, communicate with your physician to develop a plan for lowering it.

1. **Choose heart healthy foods.** Eating healthier meals helps you control your blood pressure. Healthy meals involve eating plenty of fruits and vegetables, low-fat or non-fat dairy, whole grains and foods high in fiber and low in fat.

2. **Reduce your sodium intake.** Reducing your sodium intake in your every day eating decreases fluid retention within your body. Fluid retention increases blood volume which increases your blood pressure.

3. **Maintain a healthy weight.** By eating heart healthy foods and exercising regularly.

4. **Stop smoking and limit alcohol intake.** Men should have no more than two drinks per day and women should have no more than one drink per day.

5. **Control stress.** Feeling normal does not mean that your blood pressure is under control. Be sure to check your blood pressure regularly. Prescription blood pressure medications need to be taken every day as prescribed by your healthcare provider. Stopping medications suddenly may cause a dangerous increase in blood pressure.

High Cholesterol

Cholesterol is a waxy substance that travels in your blood through your blood vessels. When you have high cholesterol, it builds up in the walls of your blood vessels making the vessels narrower and decreases blood flow throughout your body. High cholesterol places you at a greater risk for having a heart attack or stroke. You may hear your physicians discuss good and bad cholesterol. Bad cholesterol also known as low-density lipoprotein (LDL) delivers cholesterol to your cells allowing it to build up in your artery walls increasing your risk for heart disease and stroke. Good cholesterol also known as high-density lipoprotein (HDL), collects excess cholesterol that LDL has left behind on the walls of your blood vessels. High levels of HDL can decrease your risk of heart disease and stroke.

What Can You Do?

1. **Eat less unhealthy fat such as saturated fats and trans fats.** Select lean cuts of meat, low fat dairy, and using oils instead of solid fats for cooking. Limit processed meats and fried foods. Most fish contain omega 3 fatty acids so eating about two servings of fish per week will help lower blood cholesterol levels. Also, eating more whole grains and soluble fiber lowers cholesterol levels.

2. **Get active and appropriately manage weight.** Diet changes and a healthy increase in physical activity can help lower cholesterol levels.

3. **Quit smoking.** Quitting not only improves your cholesterol numbers, it also lowers your risk for heart disease and stroke.

4. **Take your medication as directed by your healthcare provider.** Medication is not a substitute for a healthy diet and exercise.

Diabetes

Diabetes commonly called high blood sugar, puts you at risk for having a stroke. If diabetes is not properly controlled, it causes damage to blood vessels throughout your body. Prolonged uncontrolled diabetes impacts your organs, blood vessels and nerves. As a result, there is an increased risk of damage to the heart, kidneys, eyes and limbs. Over time, people with uncontrolled diabetes have an increased risk of dying or being severely disabled by a heart attack or stroke.

What Can You Do?

1. **Make sure you follow your doctors recommendations** when taking your diabetes medications or insulin.

2. **Be mindful of the timing and consistency of taking your medications**. This is important for your medications to work properly. Be sure to report any side effects that you experience to your healthcare provider.

3. **Keep a record of your blood sugar**s and bring it to every doctor's visit.

4. **Always check your blood sugar before exercise** because exercising can lower your blood sugar, also known as hypoglycemia.

5. **Carbohydrates and fats should be eaten in moderation.**

6. **Use a smaller plate** when eating to avoid overeating.

7. **Space meals four to five hours apart** because the timing of meals can control your blood sugar.

8. **Use small healthy snacks** if meals are delayed and avoid skipping meals.

9. **If you are sick, always take your insulin or any prescribed diabetes medications.** Check your blood sugar often and try to follow your meal plan. Drink plenty of water and other sugar free fluids to stay hydrated.

Atrial Fibrillation

Atrial Fibrillation commonly called (A Fib) is a common abnormal heart rhythm that causes the atria of the heart to quiver instead of pumping normally. Blood then pools in the heart instead of moving in and out as usual causing blood clots to form inside the heart. A clot can then travel to the brain and cause a stroke. A stroke can cause brain damage very quickly.
Your healthcare provider may prescribe medications known as blood thinners to help prevent clots. While blood thinners are beneficial in clot prevention there are risks associated with taking the medication and ways in which you can protect yourself from injury and stay healthy.

What Can You Do?

1. **Take the right dose.** Be sure to take the medication as directed by your healthcare provider. If you miss a dose, call your provider right away. Never take a double dose because this can cause bleeding on the outside of your body that you can see as well as bleeding on the inside of your body that you cannot see.

2. **Some foods and drinks can affect how your blood thinners work.** Many foods contain vitamin K. Vitamin K is a substance that helps your blood clot. Foods high in vitamin K are asparagus, avocado, broccoli, cabbage, kale and spinach along with other leafy green vegetables. Oils high in vitamin K are soybean, canola and olive oil. You do not need to avoid these items but do keep as steady as possible the amount you eat from day to day.

3. Grapefruit and grapefruit juice, cranberries and cranberry juice, fish oil, garlic, ginger, licorice, turmeric, herbs used in herbal teas or supplements and alcohol can impact how blood thinners work in your body. If any of these items are a part of your diet (with the exception of alcohol) continue to use them regularly. **Do not make any drastic changes to your diet without first talking with your healthcare provider.**

4. Blood thinners cause you to bleed more and easier than people who do not take them. Protect yourself from cuts and scrapes by always wearing shoes, not trimming corns or calluses yourself, using an electric razor instead of a manual one and using a soft bristle toothbrush and waxed floss. **Seek medical attention right away if you fall, hit your head or have any other kind of injury.**

Smoking Cessation

Cigarette smoking is a risk factor for stroke. The nicotine and carbon monoxide in cigarette smoke damage the cardiovascular system and pave the way for stroke to occur. Since e-cigarettes also contain nicotine – some contain as much as a pack of cigarettes – it is a concern that vaping or using e-cigarettes can also be a risk factor for stroke. Talk to your healthcare provider about prescription medicines and nicotine replacement products that help stop the urge to smoke. Join a support group or quit smoking program. Talking with others about the challenges of quitting can help you get through them. Ask other smokers in your household to quit with you. Look for the cues in your life that you associate with smoking and avoid them.

Tips for your stop smoking plan:

- Talk to your healthcare provider about prescription medicines and nicotine replacement products that help stop the urge to smoke.
- Join a support group or quit smoking program. Talking with others about the challenges of quitting can help you get through them.
- Ask other smokers in your household to quit with you.
- Look for the cues in your life that you associate with smoking and avoid them.

Track your triggers to smoke. What gives you that "I-need-a-cigarette" feeling? List all the situations that make you want a cigarette. Then think of other ways to deal with these situations. Here are some examples:

Situation:	How i'll handle it:
Finishing a meal	Get up from the table and take a walk.
Having an argument	Find a quiet place and breathe deeply.
Feeling lonely or bored	Call a friend to talk.

Tips for quitting successfully

- List the benefits of quitting such as reducing heart risks and saving money. Keep this list and review it whenever you feel like smoking.
- Get support. Let your friends know you may call them to chat when you have an urge to smoke.
- If you've tried to quit before without success, this time avoid the triggers that may cause the relapse.
- Make the most of slip-ups. Try to learn from them, and then get back on track.
- Be accountable to your friends and your calendar so that you stay on track.

Carotid Artery Disease

The carotid arteries are large blood vessels that carry blood to the brain. When these arteries are healthy, the brain gets all the oxygen and nutrients it needs to function well. If the carotid arteries are damaged, however, it can greatly increase your chances of stroke. This is a sudden loss of brain function caused by a lack of blood flow and oxygen. Small pieces of a blood clot called emboli break off and can enter the bloodstream and travel to the brain. Brain tissue is damaged when emboli block arteries in the brain.

Carotid Dissection

A carotid dissection is a tear in the inner layer of an artery in the neck. You have one carotid artery on each side of your neck. These arteries send blood to your brain. A carotid dissection can happen at any age. It tends to happen more often in younger adults than in older adults. It is a common cause of stroke in people under age 50. An injury to the neck can cause carotid dissection. The injury may be caused by something like a car crash. A carotid dissection can also happen with no known cause. Or it may happen after a normal activity such as:

- Swimming
- Dancing
- Yoga
- Scuba diving
- Skating
- Having sex
- Jumping on a trampoline
- Sneezing or coughing
- Giving birth
- Play sports such as tennis, basketball, or volleyball
- Riding a roller coaster or other ride
- Getting chiropractic treatment

Atherosclerosis

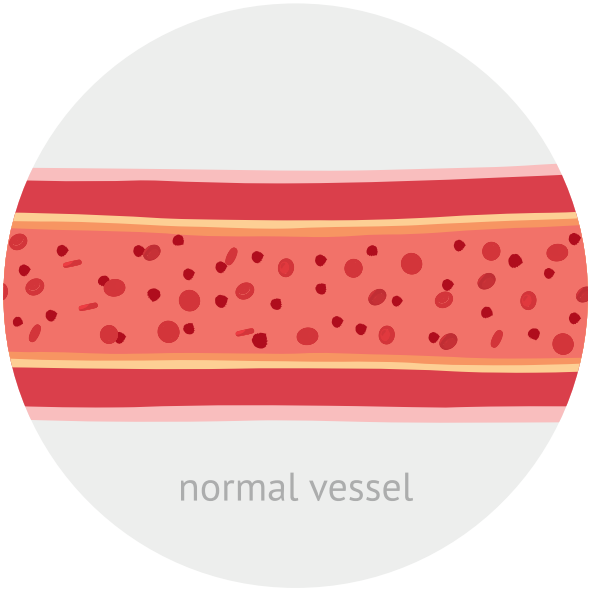
A fatty material (plaque) can build up in your arteries. This makes it harder for blood to flow through them. A blood clot can then form on the plaque. This may block the artery, cutting off blood flow. This can cause conditions such as coronary artery disease (CAD) and peripheral arterial disease (PAD):

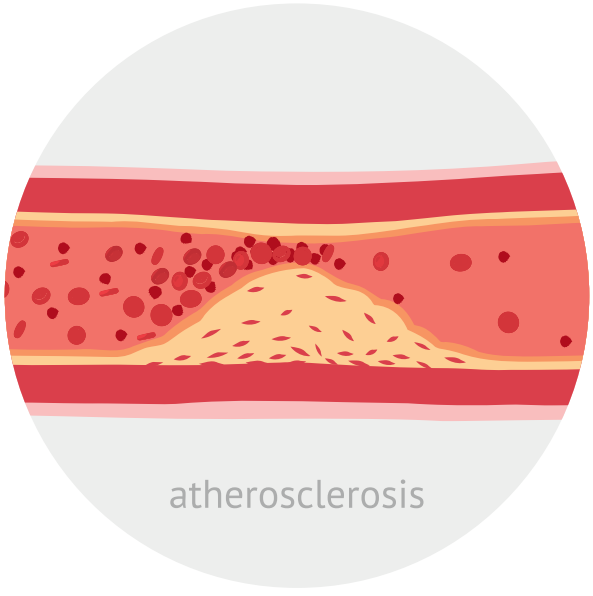
- CAD occurs when plaque builds up in the coronary artery. This artery supplies the heart with oxygen-rich blood.
- PAD occurs when plaque forms in leg arteries.

The same things that cause CAD and PAD can also cause plaque to form in other arteries in your body, such as those in the brain. When plaque occurs in any of these arteries, it raises your risk of heart attack or stroke.

What Can You Do?

Follow your recommended/prescribed management therapy, including taking aspirin. Aspirin is a blood thinner (antiplatelet medication) and it helps keep blood clots from forming.





Procedures

Angiogram
Carotid angiography is a type of X-ray test used to view the carotid arteries. These are the large blood vessels that supply your brain with blood. During the test, a thin, flexible tube called a catheter is passed into an artery leading to the carotids. Contrast fluid is then injected through the catheter. The fluid makes it easier to see the carotids on the X-rays.

Thrombectomy
In the case of a stroke, a cerebral thrombectomy removes the clot from an artery in the brain. To remove the clot, surgeon inserts a catheter (a flexible tube) through an artery in the groin or arm up to the artery in the brain that's blocked.

Carotid Artery Stenting
Procedures that open clogged arteries to restore blood flow to the brain. They're often performed to treat or prevent strokes. The carotid arteries are located on each side of your neck. These are the main arteries supplying blood to your brain. They can be clogged with fatty deposits (plaque) that slow or block blood flow to the brain — a condition known as carotid artery disease — which can lead to a stroke.

Carotid Artery Surgery
Carotid artery surgery is done to restore proper blood flow to the brain.

Embolization for Brain Aneurysm
Embolization is a procedure used to treat a brain aneurysm. A brain aneurysm is a balloon-like sac or bulge in the wall of a brain artery. If the aneurysm bursts (ruptures) and bleeds, nearby brain tissue may be damaged. This can cause a stroke, which can be fatal. Embolization may be done before an aneurysm bursts, to prevent these problems. It can also be done after an aneurysm has burst. The procedure involves putting a substance (metal coils, or specialized particles or liquid) inside the aneurysm. This helps to seal the aneurysm and stop it from bleeding or rupturing.

Aneurysm Clipping
Surgery for an aneurysm is done as soon as possible if it just bled. It is usually not urgent if the aneurysm has not bled. One of 2 types of surgery is generally used. In open surgery, a portion of your skull is removed. In an endovascular procedure, your surgeon goes through the blood vessel leading toward your aneurysm. Treatment may not reverse any damage already done if the aneurysm has ruptured. The goal is to prevent the aneurysm from bleeding.

Occlusion and bypass
Artery occlusion and bypass is a two-part procedure combining open microsurgery and endovascular coiling. The purpose of this procedure is to coil the entire diseased portion of the blood vessel and then bypass the blood flow to the specific location in the brain.

Hemicraniectomy
A craniectomy is a surgery to remove a piece of your skull. It's done to help relieve pressure in the skull when fluid builds up and presses on the brain. This buildup of fluid is dangerous. It can lead to brain damage or even death if not treated.

Stroke Recovery

The first hours after a stroke can be very scary, fast paced and a blur. Your stroke care team will be working quickly to figure out the type of stroke you experienced to determine the best treatment plan needed for the best recovery.

During the first few days after your stroke, you might be very tired and need to recover from the initial event. There are three goals for the first hours after a stroke:

- To stabilize you by managing breathing, heart function blood pressure, bleeding, swallowing and other symptoms.
- To make a diagnosis to determine the type and location of your stroke. This is usually by a CT (computed tomography) scan. Blood tests and other tests may be a part of your assessment.
- To provide early treatment by determining the best therapy including placing you in a special stroke unit in the hospital.

Depending on what type of stroke you had, your stroke care team treatment involves one or more of the following:

- Medication to dissolve clots (ischemic strokes).
- Medication to prevent blood clots (ischemic strokes).
- Tests to look for damage from the stroke.
- Procedures to stop bleeding (hemorrhagic strokes).
- Procedures to remove clots (ischemic strokes).

The goal of the first steps in stroke treatment is to minimize damage from the stroke. Some of the damage from a stroke can never be undone, but some of it can. When a stroke occurs, it kills some brain cells. Your body clears away these dead brain cells, but they cannot be replaced. The function those dead brain cells affect may be permanently lost.
After the first several hours, treatment turns to your recovery and on preventing future strokes. A variety of treatments exist for ischemic and hemorrhagic strokes. Your physician will review with you the recommend medications and therapies.

Next you will be admitted to the hospital where you will go to either the Critical Care Unit or the Stroke Unit. Once there, your care will focus on assessing the injury to the brain, preventing complications and monitoring and treating symptoms.

The Care You May Require While in the Hospital

- Medication given through a vein (IV), by mouth or by other methods.
- Monitoring of your vital signs (blood pressure, heart rate, temperature, etc).
- Monitoring of your neurological status for changes.
- Daily blood draws for laboratory tests.
- Imaging tests such as additional CT scans, MRIs, X-ray or echocardiogram ("echo").
- Bed rest, with limited bedside and self care activities as directed by your medical team.
- Other equipment, monitoring or support—for example, extra oxygen or a ventilator (breathing machine).

Stroke Medications

Know the medications you take and why you take them. Your medications can help you feel better so you can do more things you enjoy. They keep your blood from clotting, which helps to prevent stroke. Many types of medications can help prevent stroke. You may be prescribed one or more of the following:

- Anticoagulant ("blood thinning") medications help prevent blood clots from forming. If you take a blood thinner, you may need regular blood tests.
- Antiplatelets, such as aspirin, are prescribed for many stroke patients. They make blood clots less likely to form.
- Blood pressure medications help lower high blood pressure. In most cases, you'll need to take several types of medications.
- Cholesterol-lowering drugs make plaque less likely to build up in your artery walls.
- Heart medications can treat certain heart problems that increase your risk of stroke.
- Diabetes medications adjust blood sugar levels. This can prevent problems that lead to stroke.

Keep in mind that most medications need to be taken every day—even when you feel fine. Ask your doctor if you need to avoid certain foods or alcohol.

Family and friends can provide support by helping stroke survivors know how the medications work and when to take them. Check often to ensure medications are taken as directed. Know whether any medication reacts with certain foods or alcohol and watch for side effects. Call the doctor if any medication causes excess bruising, nosebleeds, dizziness, or blurred vision.

Here are some tips for taking medication.

- Have a routine. Take medication at the same time each day. Use reminders to help stay on track.
- Take ALL your medications. Some medications work best when used with others. Don't take one type and skip another.
- Plan ahead. Refill prescriptions before they run out. Be sure to take medications along if you travel.
- Never change your dosage or stop taking medication on your own. And if you miss a pill, don't take two the next time.
- Tell your doctor if any medication causes side effects. Your doctor may change your dose or prescribe a new medication.
- Carry a list of your medications. Bring the list to appointments with healthcare providers.

Write down the medications you take so you know why each is needed.

To keep my blood from clotting, I take: _____

To keep my blood pressure lower, I take: _____

To keep my blood sugar within a normal range, I take: _____

To keep my cholesterol down, I take: _____

My blood pressure range: _____

My blood sugar range: _____

Stroke Rehabilitation

Setting realistic rehab goals is necessary for achieving goals. Realistic rehab goals may include being able to:

- Take care of yourself with some special equipment, such as tools to help with feeding, grooming, bathing and dressing.
- Walk with a walker or a cane or using a self-propelling wheelchair.
- Drive a car (for some stroke survivors).
- Interact with others.

You may work with a number of new people in the days and weeks to come. As you begin stroke rehab, your care team may now grow to include doctors specializing in vascular neurology, internal medicine, physical rehabilitation and mental health. Nurses who have special training to help stroke survivors will be involved in your rehab.

They can teach you about strokes, risk factors and healthy living after a stroke. They may also help you relearn basic skills such as using the toilet and bathing. Physical, occupational and speech therapists will help you gain the skills you need for greater independence and a more satisfying life after a stroke. Which of these therapists you see depends on your condition and your goals. Physical therapists (PT) work with patients who have had a stroke to help them relearn motor activities such as walking, sitting, standing, lying down and the process of switching from one type of movement to another. Occupational therapists (OT) help patients who have had a stroke to improve their sensory and motor abilities during the post-stroke recovery period so patients can relearn valuable skills that impact their daily roles and routines (ie: grooming, dressing, bathing, care giving). Speech-language pathologist (SLP) assess, diagnose and treat disorders concerning speech, language, cognitive communication, voice, swallowing ability and other related issues. Ultimately, the goal of the speech therapy in stroke rehab is to assist in the implementation of safest diet consistencies and help the patient attain the highest level of language and communication as possible. Finally, social workers will help you make adjustments for life at home or at work and dieticians will help make sure you have a healthy diet during rehab. They also educate the family about proper diet after the stroke survivor is discharged.

The family is the most important source of long-term support during the recovery of a stroke patient. The multidisciplinary healthcare team needs your help to accomplish the most effective treatment plan for your loved one. Family members are a significant part of the treatment plan and the healthcare team invites you to share your observations and feelings with us. We are here to answer your questions and to help you and your loved one through the acute hospital phase by developing the best discharge plan possible. Our goal is to assist the patient in regaining as much independence as possible, within his or her limitations.

Your stroke rehabilitation program will start when your doctor decides that your condition is stable and that you can benefit from rehabilitation. Your rehab goals will depend on the effects of your stroke, what you were able to do before your stroke and your wishes. A joint effort by you, your family and our stroke team will be required for you to set your rehab goals.

Secondary Stroke Prevention

Has the patient had a stroke?	The risk of a recurrent stroke is 6% at one year, 16% at five years, and 25% at 10 years post stroke.
Has the patient had a TIA?	Approximately 12% of all strokes are preceded by a TIA.
Has the underlying cause of the stroke been identified?	If the etiology of the stroke has not been determined, consider collaborating with colleagues to further evaluate the cause.
Is this an ischemic stroke patient who should be on an aspirin regimen?	Guidelines recommend that aspirin (50–325 mg/d) monotherapy or the combination of aspirin 25 mg and extended-release dipyridamole 200 mg twice daily is indicated as initial therapy after TIA or ischemic stroke for prevention of future stroke.
Does the patient have uncontrolled high blood pressure?	Treatment of hypertension is possibly the most important intervention for secondary prevention of ischemic stroke. Target blood pressure for secondary stroke prevention should be less than 130/80 mm Hg.
Does the patient have diabetes mellitus (DM)?	DM is an independent risk factor for stroke recurrence. After a TIA or ischemic stroke, all patients should be screened for DM.
Does the patient's cholesterol level need to be lowered?	Statin therapy with intensive lipid-lowering effects is recommended to reduce the risk of another ASCVD event. The first goal is to achieve a 50% or greater reduction in LDL-C levels, but if LDL-C levels remains 70 mg/dL or greater on maximally tolerated statin therapy, adding ezetimibe may be reasonable.
Is the patient physically inactive?	Physical activity improves stroke risk factors, may reduce stroke risk itself and aid recovery. For patients who are capable of engaging in regular physical activity, at least three to four sessions per week of 40 minutes of moderate to vigorous intensity aerobic physical exercise are reasonable to reduce stroke risk factors.
Does the patient smoke, or are they exposed to secondhand smoke?	Current smokers have a two to four times increased risk of a stroke compared with nonsmokers. Talk to your patient about programs, nicotine replacements and other medications that can help them quit.

Secondary Stroke Prevention

Does the patient need to make dietary changes?	It is reasonable to do a nutritional assessment of your patient. Patients should be counseled to follow a diet that emphasizes vegetables, fruits, whole grains, low-fat dairy products, fish, legumes and nuts and limits sodium, sweets and red meats.
Does the patient drink large amounts of alcohol?	Patient who are heavy drinkers should be counseled to eliminate or reduce their consumption of alcohol. Light to moderate amounts of alcohol consumption (up to two drinks per day for men and up to one drink per day for non-pregnant women) may be reasonable.
Does the patient have sleep apnea?	A sleep study might be considered for patients with an ischemic stroke or TIA. Treatment with CPAP might be considered for patients with ischemic stroke or TIA and sleep apnea.
Has the patient been diagnosed with atrial fibrillation (AFib)?	AFib is a powerful risk factor for ischemic stroke, increasing the risk of a stroke by five times. It is reasonable to consider a combination of oral anticoagulation therapy and antiplatelet therapy in patients that have CAD, ACS or stent placement.

Life After Stroke

Glossary

ADL
Activities of daily living, including dressing, bathing, grooming, eating and homemaking.

Ambulate
To walk.

Angiogram
A procedure done to visualize the blood vessels in the brain.

Aphasia
A language problem that involves difficulty in understanding, talking, reading and writing.

Apraxia
Difficulty performing planned movements or sequences of movement (including muscular control of the tongue), which are not the result of paralysis, incoordination, or loss of sensation or comprehension.

Aspiration
Food or liquid that has gone into the lungs rather than the stomach.

Assistive Device
A device used to assist in ambulation or to improve activities of daily living (i.e. cane, walker).

Ataxia
Inability to coordinate muscle groups for smooth movement.

Atrial Fibrillation
Rapid, irregular contraction of the atria of the heart that produces an irregular and often rapid ventricular rate.

Attention
The ability to concentrate on information.

Carotid Artery
A major artery in the neck that supplies blood to the head and brain.

Cognition
The activities involved in thinking, reasoning and problem solving.

CT Scan
CAT Scan (Computerized Axial Tomography) – A series of X-rays taken and analyzed with a computer to determine the level and type o damage to the whole body and/or specific area.

CVA
Cerebral Vascular Accident. See "Ischemic Stroke."

Glossary

Denial
Inability to understand the nature and extent of the patient's cognitive, behavioral and functional deficits. This difficulty often is due to both cognitive and psychological factors.

Disorientation
Confusion about one's identity, location, or the current date.

Dysarthria
Unclear, slurred speech resulting from weakness and/or incoordination of the muscles used to produce speech and voice.

Dysphagia
A disorder of swallowing due to neurological injury, structural abnormality or surgical alteration of the muscles of swallowing.

Edema
A condition in which the body tissues contain an excessive amount of fluid. This may be a localized problem, such as in brain or extremity swelling.

Fine Motor Activities
Activities that include hand coordination, such as writing and buttoning.

Flaccid
Total lack of muscle tone or activity in a muscle or muscle group.

Hemianopsia
Defective vision or blindness in half of the visual field of one or both eyes.

Hemiparesis
Muscular weakness or partial paralysis of one side of the body.

Hemorrhagic Stroke
A stroke caused by a bursting blood vessel in the brain that spills blood into the brain

Incontinence
Lack of control over excretory functions (urination, bowels).

Ischemic Stroke
A stroke caused by insufficient supply of blood and oxygen to a part of the brain. Also referred to as CVA.

Magnetic Resonance Imaging (MRI)
A technique used to obtain images of the brain and blood flow to the brain using a magnetic field.

Glossary

Nasogastric Tube (NG Tube)
A tube that is inserted through the nostrils and passed into the stomach, through which food and liquids are given.

Neglect
A condition in which the individual is unable to sense some part of his or her world, usually on either the right or left side of the brain.

NPO
Nothing by mouth, a diet restriction sometimes ordered by the physician.

Orientation
Accurate awareness of one's identity, location and the current date.

Occupational Therapy (O.T.)
Therapy that assists the patient in managing activities of daily living.

Paralysis
Inability to move a muscle or a group of muscles voluntarily.

Paresis
Weakness of a muscle or a group of muscles.

Patent
Term used to describe a small hole in the heart between the left and right atrium.

PEG
A feeding tube inserted through the skin into the stomach.

Perseverance
Uncontrolled, involuntary repetition of speech or of an activity.

Physical Therapy (P.T.)
Therapy that helps patients regain the ability to be mobile.

Prognosis
Prediction of the course and outcome of a disability or disease.

Range of Motion (ROM)
The amount of movement possible in a joint, measured in degrees.

Sensation
Information received by the brain through the senses of sight, touch, smell, taste, hearing and movement.

Spasm
An involuntary muscular contraction.

Glossary

Spasticity
Increased resistance or contraction in the muscle, usually caused by damage to a part of the brain that controls movement.

Stenosis
Reduction in size of a vessel or other opening.

Stroke
See “Ischemic Stroke” and “Hemorrhagic stroke”.

Thrombectomy
A procedure to physically remove a blood clot from a large blood vessel in the brain, causing a stroke.

Transfers
Methods of getting into and out of a wheelchair or a chair, or moving from standing to a bed, toilet, car, tub, shower or floor and back again.

Thrombolytics
Thrombolytic (fibrinolytic) drugs help reestablish cerebral circulation by dissolving (lysing) the clots that obstruct blood flow. Most thrombolytics are plasminogen activators - they activate the factors in the blood that ultimately break up a blood clot. To be effective, thrombolytic therapy should be administered as quickly as possible after the onset of stroke symptoms.

Stroke Resources

Stroke Healthy Living Resource

1-800-232-4636
www.cdc.gov/stroke/healthy_living.htm

Help with Substance Abuse

1-800-662-4357
www.samhsa.gov/find-help/national-helpline

Help with Quitting Smoking

1-800-784-8669 or 1-800-332-8615 (for hearing Impaired)
www.quitassist.com/helpful-resources.htm?

If you think you or a loved one are having a stroke call 911.

My Numbers

Date	Weight	Morning BP Top :Systolic Bottom: Diastolic	Blood Sugar before I eat	Blood Sugar two hours after I eat (post prandial)	Notes

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STROKE CENTER

Calling All Stroke Survivors and Caregivers

How do I Sign Up?

A health care provider will offer the program and an enrollment form will be completed at discharge, or contact us at the information below.

LaQuesha Bloomer, RN
Clinical Educator, Stroke Program
Laquesha.Bloomer@ochsnerlsuhs.org
318-626-1863

Wandria Dallas, APRN
Clinical Nurse Specialist, Stroke Program
Wandria.Dallas@ochsnerlsuhs.org
318-626-1855

You are invited to the Stroke Survivor 2 Survivor Support (SS2S) Program. Participating is as easy as 1, 2, 3...

What is the SS2S program?

- A telephone peer support program for stroke survivors and caregivers.
- SS2S is supported by American Stroke Association volunteers who have received special training and are overseen by a hospital program coordinator.
- You will receive phone calls twice a month for the first two months after your discharge.
- Calls will consist of following up and asking if you have any questions, concerns or need additional information or resources in your area.
- You can withdraw from the program at any time.

Enjoy and learn from your calls!

Remember, the ASA volunteers are survivors and caregivers just like you. They know this journey can be challenging and they are here for you — you don't have to go through it alone!

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STROKE CENTER

1541 Kings Hwy
Shreveport, LA 71103

Appointment line:
318-626-0526

General Information:
318-626-0000

Every second counts when you or a loved one has experienced a stroke. Getting advanced help right away from a team that offers the latest stroke treatment options can make the difference between a successful recovery, disability or even death.

Don't wait to get help even if the person says they don't need medical attention. Delays in emergency stroke care can lead to serious and life-threatening complications. CALL 911.

Source: Some of the information included in this handbook came from the American Heart Association (www.heart.org) and the American Stoke Association (www.stroke.org).