A Patient's Guide to Stroke

St Peter's Health Partners

Cardiac & Vascular

A Patient's Guide to Stroke

Introduction

A diagnosis of stroke can be scary, but it doesn't have to be. This booklet will explain what stroke is and its symptoms along with its effects and treatments. You will also learn how to change your diet and lifestyle to improve your health.

With the information provided, you and your family can work together to meet your goals.

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Stroke: What is it?

A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or bursts (or ruptures). When that happens, part of the brain cannot get the blood (and oxygen) it needs. This causes brain cells to die.

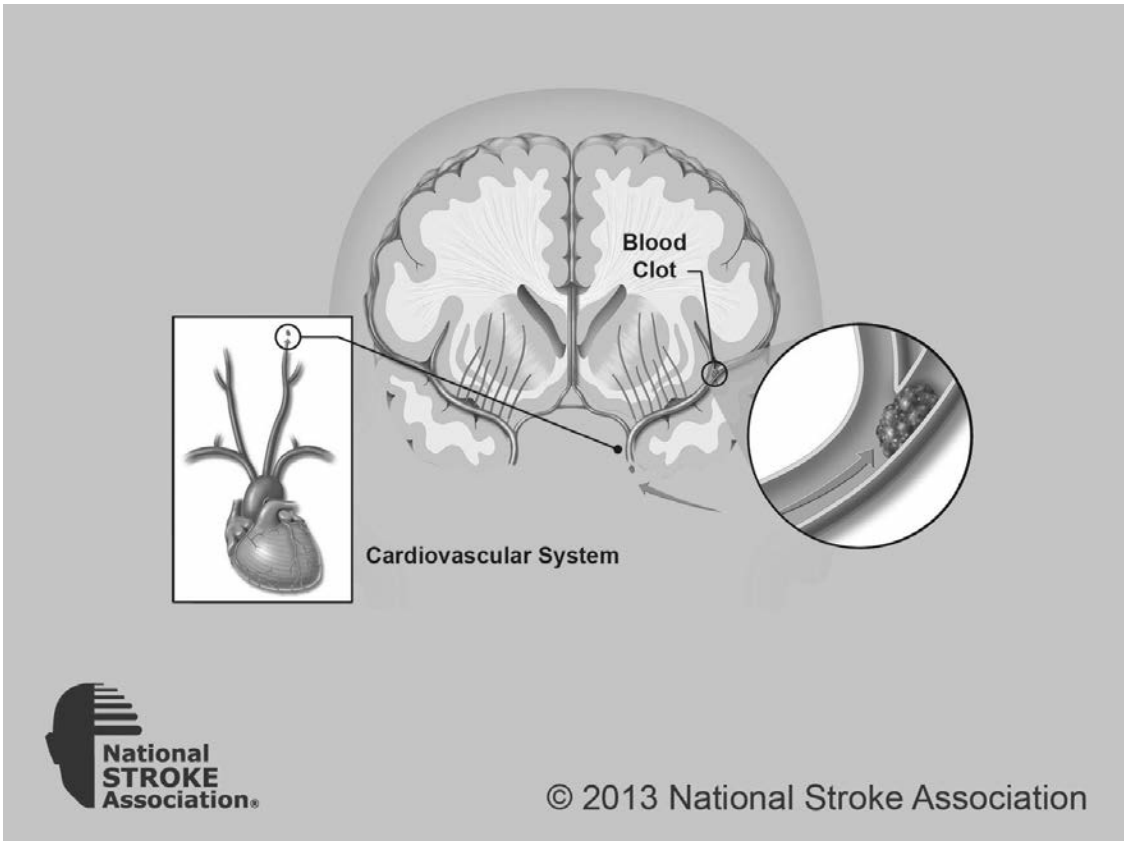
There are two forms of stroke: ischemic and hemorrhagic.

Ischemic Stroke

An ischemic stroke happens when a blood vessel supplying blood to the brain is blocked. This blockage is known as an embolic or thrombotic stroke.

Why Does This Blockage Happen?

Fatty deposits called plaque can line the walls of blood vessels. This is the main reason for this type of stroke. As the inner walls of the blood vessels become lined with plaque (a process called athero-sclerosis), clots can form.



Types of Ischemic Stroke

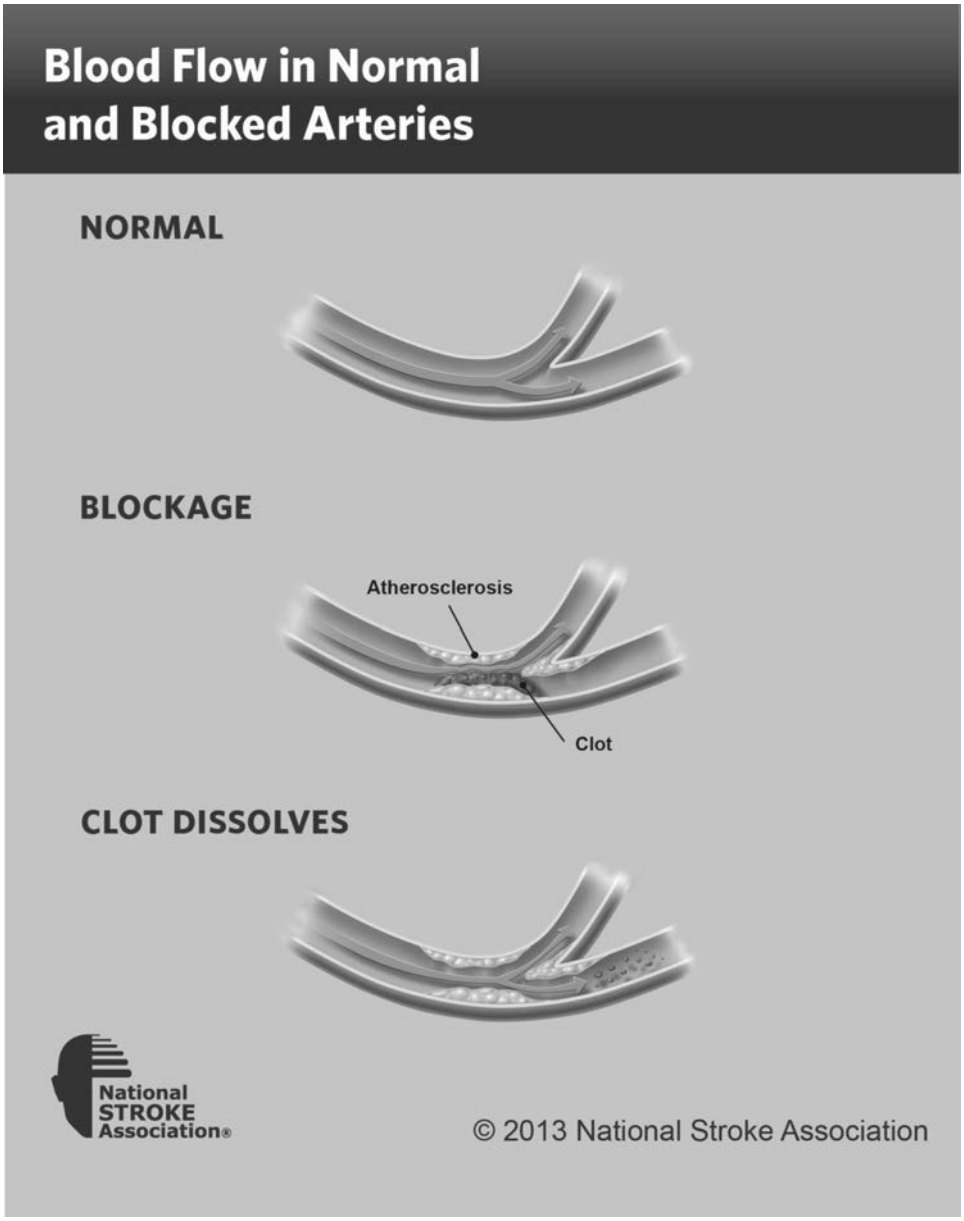
What Occurs in Embolic Stroke?

A blood clot or fatty deposit (plaque) in the heart or a vessel outside the brain travels through the bloodstream to the brain.

What Occurs in Thrombotic Stroke?

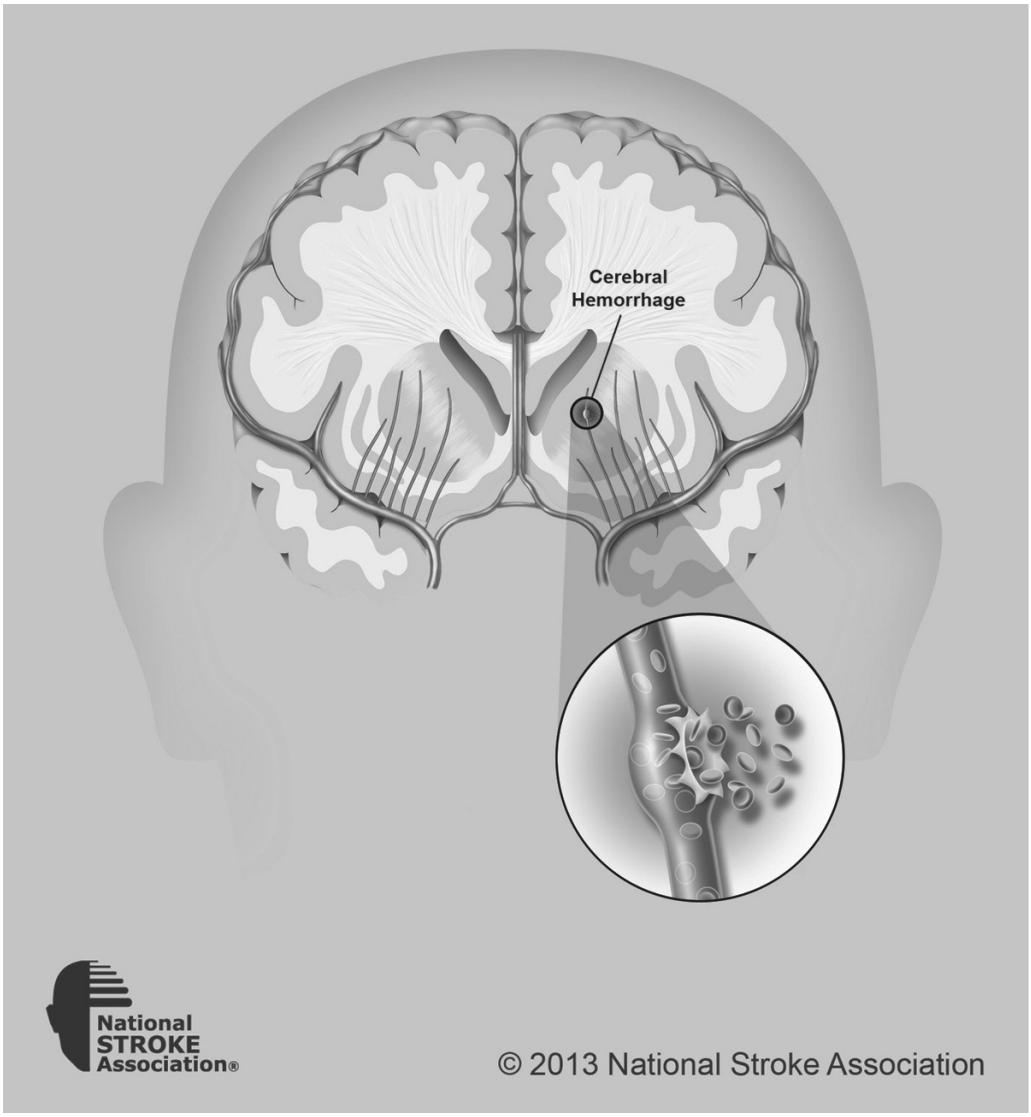
A blood clot develops in one or more vessels within the brain causing a blockage.

In the brain, the clot/plaque stops blood flow and causes a stroke.



Hemorrhagic Stroke

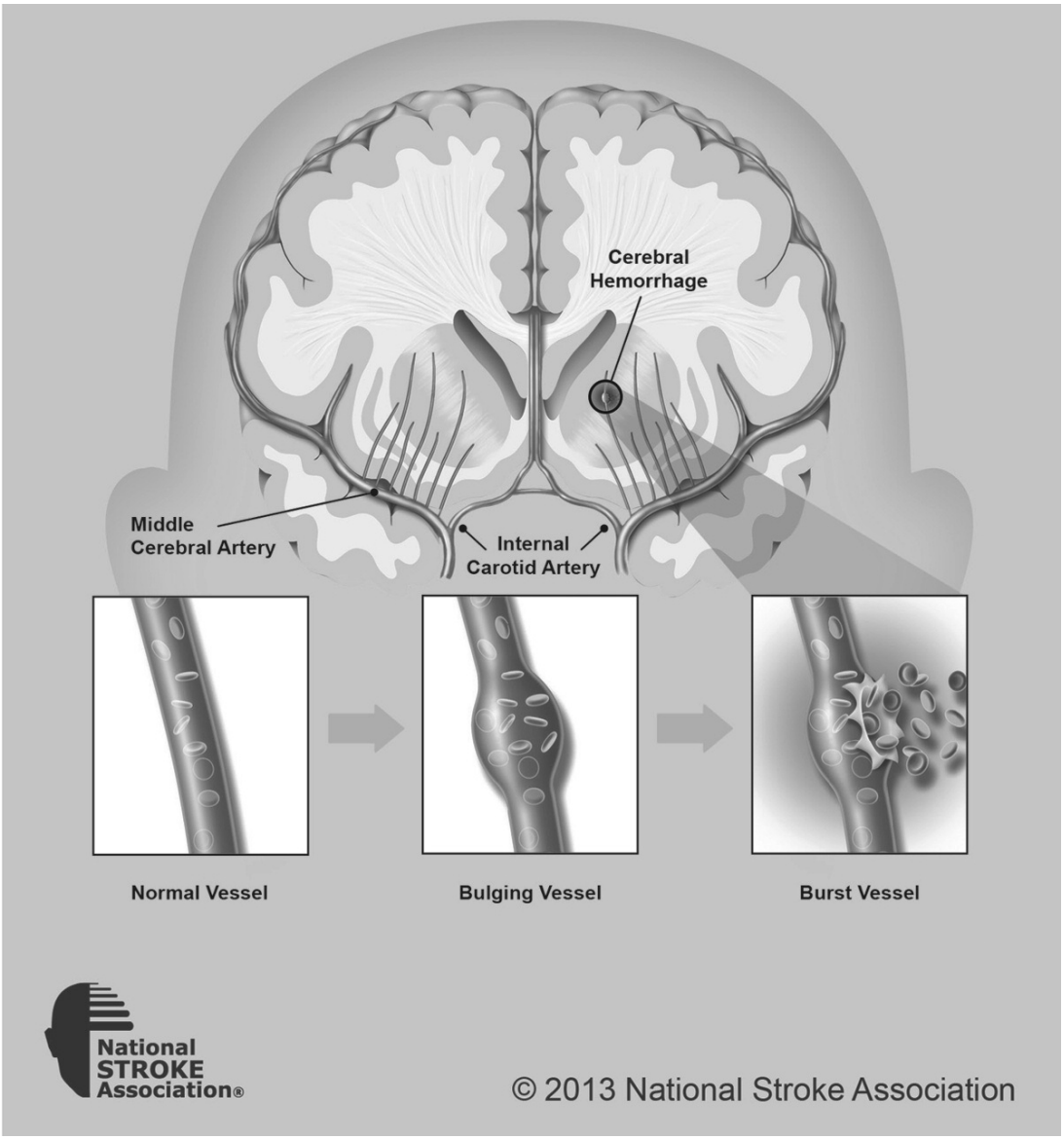
Bleeding in the brain can have many causes including high blood pressure (hypertension). Another cause may be due to weak or thin areas of the blood vessel wall. These are called aneurysms. Over time, aneurysms may rupture or burst which leads to bleeding.



Types of Hemorrhagic Stroke

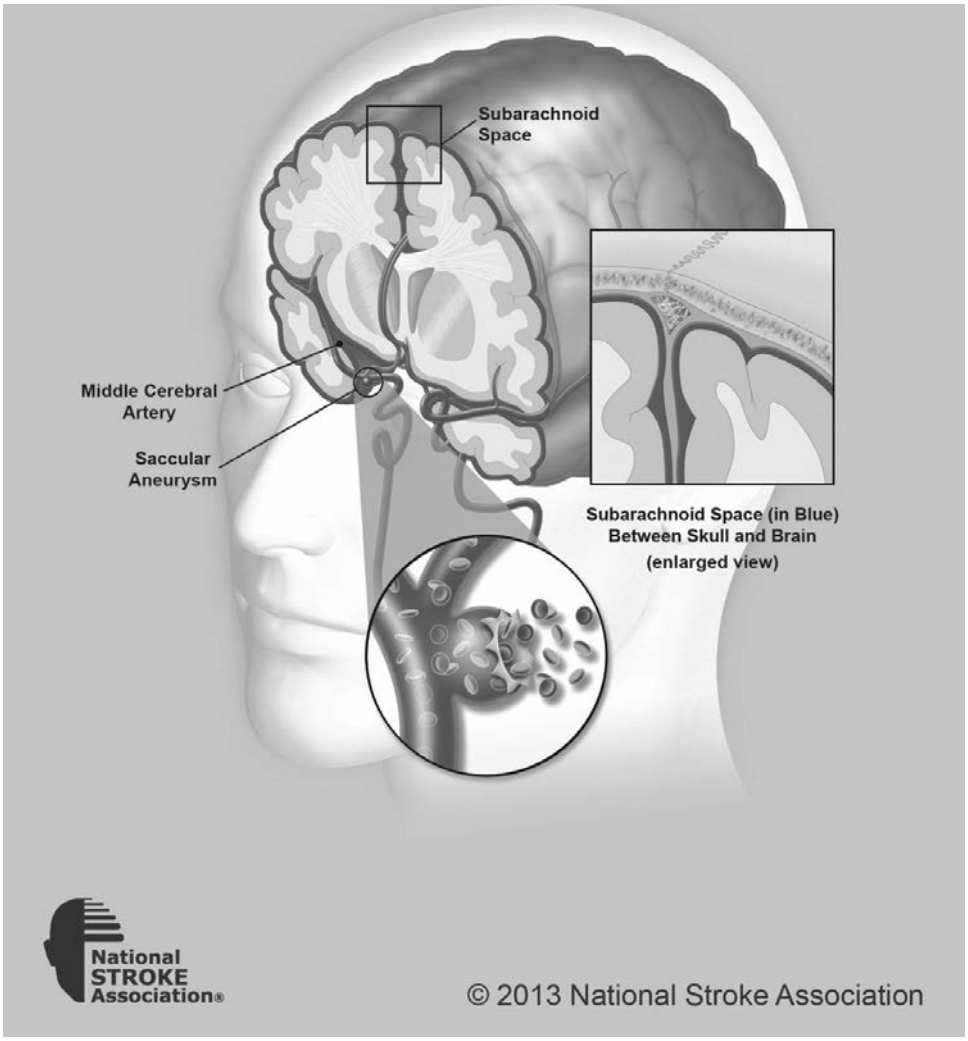
What Occurs in Intracerebral Hemorrhage?

Bleeding occurs from vessels within the brain itself. High blood pressure is the greatest cause of this type of hemorrhage.



What Occurs in Subarachnoid Hemorrhage?

A weakened vessel (or aneurysm) ruptures and bleeds into the area surrounding the brain. This bleeding may increase pressure in the brain, damaging brain cells.



Other Types of Strokes

A TIA (transient ischemic attack), or "mini stroke," is caused by a temporary clot. Mini strokes can cause symptoms of a stroke; however, the signs only last for a short time. This is due to the clot moving. TIAs are strong warnings of stroke.

Silent cerebral infarction (SCI), or "silent strokes," are found by a brain scan. Symptoms include only slight memory or movement problems. SCI is also a risk factor for strokes.

Signs and Symptoms of Stroke

F.A.S.T. is an easy way to remember the sudden signs of stroke. When you can spot the signs, you'll know that you need to call 9-1-1 for help right away.

F.A.S.T. is:

- **Face Drooping** – Does one side of the face droop or is it numb? Ask the person to smile. Is the person's smile uneven?
- **Arm Weakness** – Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?
- **Speech Difficulty** – Is speech slurred? Is the person unable to speak or hard to understand? Ask the person to repeat a simple sentence, like "The sky is blue." Is the sentence repeated correctly?
- **Time to call 9-1-1** – If someone shows any of these symptoms, even if the symptoms go away, call 9-1-1 and get the person to the hospital by ambulance immediately.

Check the time so you'll know when the first symptoms appeared.

Warning Signs of Stroke

The symptoms of a stroke also include:

- Sudden numbness or weakness, especially on one side of the body
- Sudden confusion or trouble speaking or understanding speech
- Sudden trouble seeing in one or both eyes
- Sudden trouble with walking, dizziness, or loss of balance or coordination
- Sudden severe headache with no known cause

If someone shows any of these symptoms, immediately call 9-1-1 or emergency medical services. Quick treatment may lessen the long-term effects of a stroke and prevent death.

Brain Functions and the Effects of Stroke

The brain is an organ that controls body functions. The effects of a stroke are generally based on where the damaged brain tissue is found. Because one side of the brain controls the opposite side of the body, a stroke affecting one side will result in problems on the other side of the body.

Right Brain

If the stroke occurs in your brain's right side, the left side of your body (and face) will be affected, which could produce any or all of the following:

- Loss of skills on the left side of the body
- Vision problems
- Repeated movements and answers
- Unable to focus attention for long periods of time
- Memory loss

Left Brain

If the stroke occurs in the left side of your brain, the right side of your body will be affected, producing some or all of the following:

- Loss of skills on the right side of the body
- Speech/language problems
- Slow, cautious behavioral style
- Memory loss

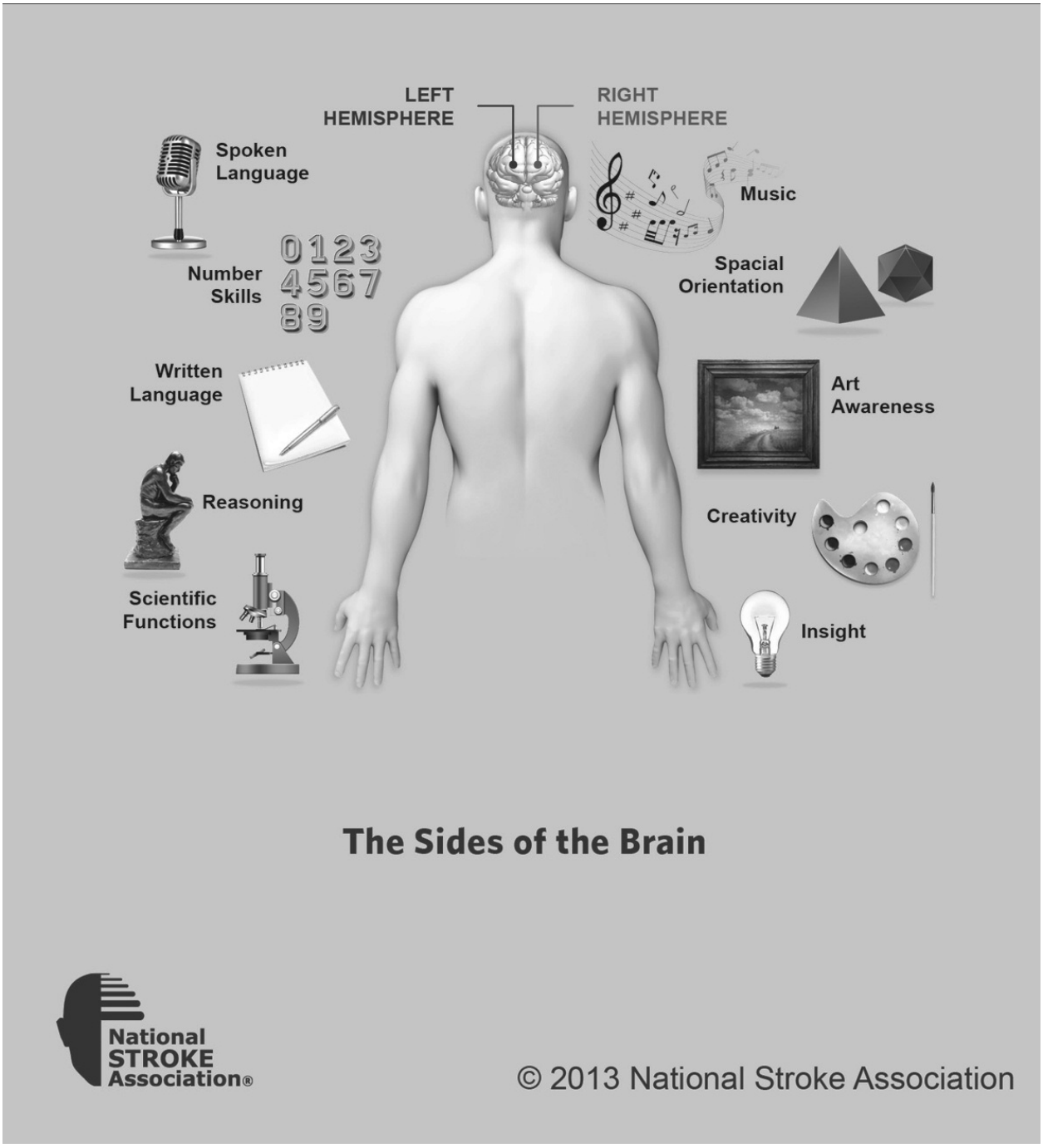
Brain Stem

Depending on the severity of the injury, a stroke in the brain stem can affect both sides of the body. Severe damage may leave someone in a "locked-in" state. When this happens, the patient is generally unable to speak or move below the neck. Hearing is not affected.

Early Recovery

Much about how the brain adjusts for the damage caused by stroke is still unknown. Some brain cells may be damaged for a short time and may function again. In some cases, a healthy region of the brain can "take over" for the damaged area. Stroke survivors sometimes experience remarkable and unexpected recoveries that can't be explained.

How a Stroke Affects You



Medication and Treatment Options

Medical advances have greatly improved survival rates from stroke treatments during the last decade. The chances of survival are even better if the stroke is found and quickly treated. Generally there are three treatment stages for stroke: prevention, therapy immediately after the stroke and post-stroke rehabilitation.

Stroke Prevention and Treatment

More than half of all strokes are caused by uncontrolled high blood pressure, making it the most important risk factor to control. Medication or drug therapy is the most common treatment for stroke. The most popular drugs used to prevent or treat stroke are as follows:

- Blood Thinners (Anticoagulants) – These drugs (such as warfarin, heparin and Lovenox®) lessen the ability to make clots.
- High Blood Pressure Medications (Antihypertensives) – These drugs can lower blood pressure by opening the blood vessels, decreasing blood volume or lowering the rate and/or force of heart pumping.

When your vessels show plaque buildup or blockage, medical procedures may be needed such as:

- Carotid Endarterectomy – Blood vessel blockage (plaque) is surgically removed from the carotid artery. This is also called carotid artery surgery.
- Angioplasty with Stents – This procedure uses balloon technology and steel screens called stents to help open up the blocked vessel.
- Thrombolytics – A catheter is used to inject medication into the blood vessel or directly into the clot. This medication breaks apart the clot.

Take comfort in knowing that most strokes are preventable. If you manage key risk factors, including high blood pressure, cigarette smoking, atrial fibrillation and physical inactivity, you are headed in the right direction.

Acute Stroke Treatment Options

Stroke medical treatments work to either open the blockage or treat the rupture. Acute stroke therapies try to stop a stroke while it is happening by quickly dissolving the blood clot causing an ischemic stroke or by stopping the bleeding of a hemorrhagic stroke.

Type of Stroke	Treatment	What is Involved?
Ischemic Stroke	Tissue Plasminogen Activator (tPA, the Gold Standard)	tPA works by dissolving the clot and improving blood flow to the part of the brain without blood flow. If used within three hours, tPA (also called IV tPA) may improve the chances of recovering from a stroke.
Ischemic Stroke	Endovascular Procedures	Specially-trained doctors try removing the blood clot by sending a catheter to the site of the blocked blood vessel in the brain. Sometimes these procedures involve tPA being used in the catheter to dissolve the blockage.
Hemorrhagic Stroke	Endovascular Procedures	Specially-trained doctors send a catheter to the site with a coil to prevent rupture.
Hemorrhagic Stroke	Surgery	For strokes caused by a bleed within the brain or by an abnormal tangle of blood vessels (arteriovenous malformation), surgery may be done to stop the bleeding. If the bleed is caused by a ruptured aneurysm (swelling of the vessel that breaks), a metal clip may be placed surgically at the base of the aneurysm to secure it.

Rehabilitation

Rehabilitation helps to lessen the effects of any problems after your stroke, allowing you to live as independently as possible. Stroke rehabilitation works best when the patient, family and the rehabilitation staff work together as a team. The program will focus on helping you to re-learn skills and new ways to perform tasks, as well as teaching your family ways they can best support your recovery.

Stroke rehabilitation uses a personal approach to help you to improve your ability to function at home, in the community, and at work. Research shows that individuals have the best chance at recovery when rehabilitation services begin as early as possible.

Rehabilitation services often begin as soon as you are medically stable. Your rehabilitation may include one or more of the following:

- Physical therapy
- Occupational therapy
- Speech and hearing therapy

Depending on the severity of your stroke, rehabilitation may continue in a variety of different settings including:

- A rehabilitation unit in the hospital
- An acute rehabilitation hospital with a specialized stroke rehabilitation program
- A long-term care facility that provides therapy and skilled nursing care
- In the home with home health agencies
- Outpatient therapy

The outlook for recovery from a stroke is more promising than ever due to on-going advances in stroke treatment and rehabilitation.

Risk Factors

There are many risk factors that can lead to stroke. Some, like age or congenital heart defects, cannot be changed. Others can be managed by the lifestyle choices you make.

Factors that Cannot be Changed or Managed

- Age: The risk doubles for each decade of life after age 55.
- Heredity (family history): Risk is greater if a parent, grandparent, sister or brother has had a stroke.
- Race: Black Americans have a much higher death rate from a stroke than White Americans. This is partly because of higher rates of high blood pressure, diabetes and obesity.

- Sex: Stroke happens more in men than in women. More women than men die of stroke. Use of birth control pills and pregnancy play a role in women.
- Prior stroke, TIA or heart attack
- Sickle cell disease (also called sickle cell anemia): This genetic disorder mainly affects Black American and Hispanic children. "Sickled" red blood cells are less able to carry oxygen through the body. These cells also tend to stick to blood vessel walls, which can block arteries to the brain.

Factors that Can be Changed or Managed

Your health care team will help you understand how to manage these factors.

- High blood pressure: The leading cause of stroke and the most important controllable risk factor.
- Atrial fibrillation: With this heart rhythm the heart beat is irregular. The heart's upper chambers quiver. This can cause blood to pool and form clots. The clots can enter the bloodstream and travel to the brain.
- Diabetes mellitus: If you have diabetes you may also have high blood pressure. You may also be overweight. Both of these conditions put you at risk.
- Carotid or other artery disease: The blood vessels in your neck supply blood to your brain. Narrowed blood vessels can limit oxygen-rich blood to your heart. This can result in a blood clot.
- Peripheral artery disease
- Other heart disease: If you have heart disease you are at risk for a stroke. This includes defects you were born with, an enlarged heart or a valve disorder.
- High blood cholesterol
- Cigarette smoking: Cigarette smoke can damage your body. Using birth control pills and smoking greatly increases your risk.
- Poor diet: Diets high in saturated fat, trans fat, cholesterol, sodium (salt) and excess calories can contribute to the risk of stroke.
- Lack of exercise and obesity: Being inactive, obese or both can increase your risk of high blood pressure, high blood cholesterol, diabetes, heart disease and stroke.

Life After Stroke

After you have had a stroke, the chance of having another is increased. However, when you take the appropriate action, you can help to reduce your chance for another stroke.

Nutrition

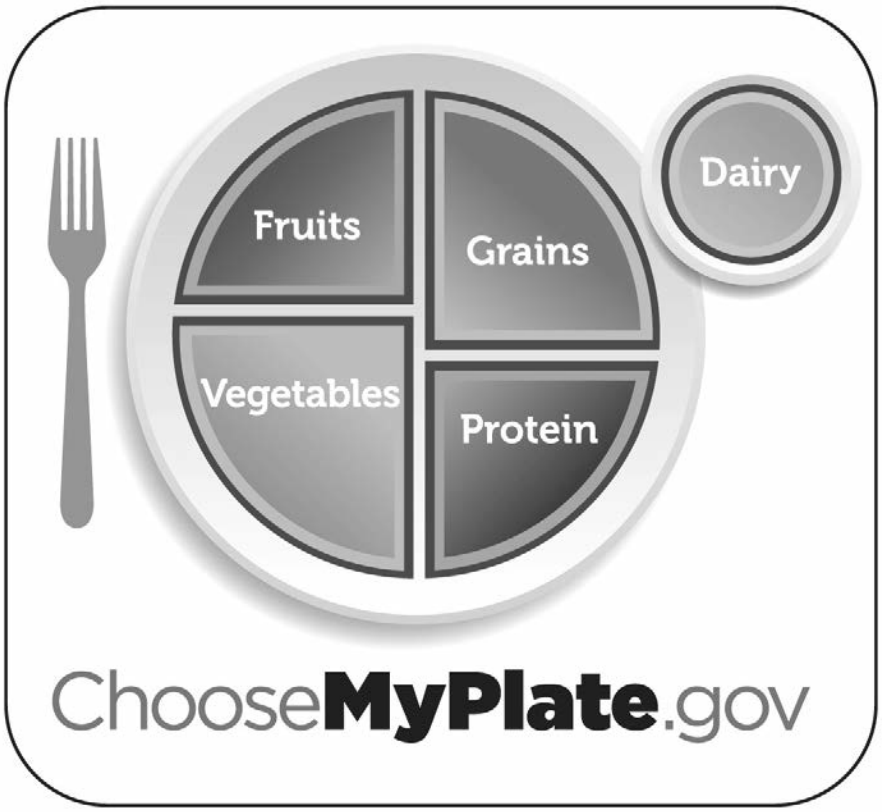
Healthy food habits can help you reduce three risk factors for stroke — poor cholesterol levels, high blood pressure and excess weight. Diets high in saturated fat, trans fat and cholesterol can raise blood cholesterol levels. Diets high in salt can contribute to increased blood pressure, and high-calorie diets can contribute to obesity.

A diet with five or more servings of fruits and vegetables per day may reduce the risk of stroke. The American Heart Association/American Stroke Association offers these recommendations for a healthy diet:

- Eat a diet rich in vegetables and fruits.
- Choose whole-grain, high-fiber foods.
- Reduce the meat in your meal by filling at least half of your plate with fruits and vegetables; fill one-fourth of your plate with a fiber-rich whole grain. (See the MyPlate illustration.)
- Eat fish at least twice a week. Choose omega-3-rich fish, like salmon or tuna.

- Limit cholesterol, saturated fat and transfat. Avoiding partially-hydrogenated oils will reduce trans fats.
- Choose lean meats and poultry, and prepare them without using saturated or trans fats.
- Select fat-free, 1% or low-fat dairy products.
- Avoid drinks and foods with added sugars.
- Choose and prepare foods with spices and salt-free seasoning mixes and avoid salt (sodium).
- If you drink alcohol, do so in moderation. Limit yourself to no more than one drink per day if you are a woman or two drinks if you are a man.
- Prepare healthy recipes at home.
- Learn to read food labels. This will help you to choose items that have less than 140 mg of sodium per serving. (Call your grocery store and ask to meet with a registered dietitian. This nutrition expert will meet you at the store to help you find heart-healthy products. Most stores offer this service at no charge.)

MyPlate illustrates the five food groups that are the building blocks for a healthy diet using a familiar image – a place setting for a meal. Before you eat, think about what goes on your plate or in your cup or bowl.



Eating Complications

You may have a loss of appetite as a result of your stroke. You may also find eating to be difficult due to swallowing problems or limited hand or arm movement. In any case, talk to your doctor to make sure you're getting the nutrition you need. To make eating a little easier again, try these steps:

- Choose healthy foods with stronger flavors, such as broiled fish and citrus fruits. Spices also add flavor to food and serve as a good substitute for salt.
- Choose colorful, visually appealing foods, such as salmon, carrots and dark green vegetables. Cut foods into small pieces to make them easier to chew.
- Pick softer, easier-to-chew foods, such as yogurt, bananas, whole-grain hot cereals and soups.
- If you have trouble swallowing, talk to your speech therapist or doctor. This condition can be treated.
- If weakness in arms or hands is a problem, you might try special eating utensils. Some types of flatware have thicker handles that are easier to hold. "Rocker knives" make it possible to cut food using one hand.

Cooking Tips

The following cooking tips will help you, and your family, prepare tasty, heart-healthy meals – this can help decrease your risk of heart disease and stroke.

- Reduce saturated fat in meat and poultry by choosing skinless, boneless lean cuts.
- Cook fresh vegetables with healthy oils like olive and canola or a low-fat margarine.
- Add herbs and spices to make vegetables even tastier.
- Use liquid vegetable oils such as canola, safflower, sunflower, soybean, and olive in place of solid fats such as butter, lard or shortening.
- Substitute egg whites for whole eggs.
- Use pureed fruits and vegetables (such as applesauce) for baking — for many recipes, you just use the pureed fruit or vegetables instead of oil.
- Use lower dairy fats such as low-fat (1%) or fat-free (skim) milk, and low-fat, low-salt cheeses.
- Remove hardened fat from sauces and gravies, or use a fat separator to leave fat behind.
- Increase fiber and whole grains.
- Reduce sodium. Be aware of all your sources of sodium and aim to eat less than 2,000 mg of sodium per day.

Notes

Albany Memorial Hospital
600 Northern Blvd.
Albany, NY 12204

St. Mary's Hospital
1300 Massachusetts Ave.
Troy, NY 12180

St. Peter's Hospital
315 South Manning Blvd.
Albany, NY 12208

Samaritan Hospital
2215 Burdett Ave.
Troy, NY 12180

Sunnyview Rehabilitation Hospital
1270 Belmont Ave.
Schenectady, NY 12308

Eddy Visiting Nurse Association
433 River St.
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