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# Recovering From a Stroke

## Introduction

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Approximately 750,000 Americans have a stroke each year. Half of stroke survivors are left with a permanent disability. Recovery from a stroke depends on the extent and location of the stroke, the person's general health, his or her personality and emotional state, the support of family and friends, and the care the person receives.

Although some people recover from a stroke spontaneously, most people need rehabilitation to relearn previous skills and learn new skills. The goal of rehabilitation is to help the person who has had a stroke make the most of his or her physical and mental abilities and adapt to any limitations resulting from the stroke. Also, health care team members work to prevent complications such as stiff joints, bedsores, and pneumonia, which can result when a person has problems moving.

To be successful, a rehabilitation program should be started as soon as possible after having a stroke. This, of course, depends on the ability of someone who has had a stroke to take part in such a program. Discuss appropriate rehabilitation with your healthcare provider.

Some people improve greatly their abilities to move, talk and see soon after having a stroke. Even though regaining these abilities is most rapid during the first year after a stroke, some gains are made more slowly. Some people, with continued effort and support, may notice gains for years after a stroke.

What a person is like before a stroke also may influence how he or she will react afterward. Some people may struggle to overcome a disability, while others may become resigned and need a lot of support from others.

This information discusses recovering from a stroke. You will find information about the following:

- Members of the rehabilitation team
- Different functions of the left and right hemispheres of the brain
- Physical effects of a stroke

- Cognitive effects of a stroke
- Emotional effects of a stroke
- Role of family members in rehabilitation
- Impact of a stroke on family members
- Issues to think about before going home
- Warning signs of a stroke
- Resources available for people recovering from a stroke

As you read, remember that the effects of a stroke vary with each individual. If you have questions about this information or your condition or the condition of your family member, ask a member of your health care team.

Words in bold are explained in a word list at the end of this information.

## Rehabilitation team

Your hospital rehabilitation program involves a team approach. Many people may work with you during your rehabilitation. Members of your health care team may include the following:

- A **physiatrist** (fizz-ZY-ah-trist) is a physician specialized in physical medicine and rehabilitation. Physiatrists work with people to restore the best possible function to muscles, bones and the nervous system. The physiatrist is your primary physician on the rehabilitation unit.
- A **rehabilitation nurse** works with other health care team members to plan your care. The rehabilitation nurse assesses and monitors your physical status and progress and provides your nursing care. A main focus of the rehabilitation nurse is to give you and your family stroke-related education, so that you can regain as much independence as possible.
- A **physical therapist** may help you get back muscle function; help you increase your ability to move — sitting, lying, standing or walking — and show you how to use adaptive equipment. The physical therapist also may help you to get the adaptive equipment you need for your home.
- An **occupational therapist** may help you relearn the skills needed to resume your activities of daily living, such as eating, bathing, dressing and grooming. Other activities, such as preparing meals and cleaning the house also may be addressed. The occupational therapist may show you how to use adaptive equipment for activities of daily living and help you get the adaptive equipment you need for your home.
- A **speech therapist** or **speech pathologist** may work with you if you have lost the ability to speak or understand language (**aphasia**). You may learn new ways to communicate using tools, such as spelling boards and computers.
- A **recreational therapist** may show you and your family how to overcome barriers to taking part in leisure activities.
- A **social worker** may help you and your family adjust to your changed lifestyle by giving you information about resources for financial aid, adaptive equipment, home needs and emotional support. The social worker also may be able to help you and your family arrange for transfer to another agency if continued care is needed.

- A **psychologist** may assess your thinking skills and your ability to cope emotionally with your stroke and any resulting disability. Psychologists provide counseling and support during the rehabilitation process.
- A **chaplain** may be available to listen and give spiritual and emotional support to you and your family.

## Setting goals

An important part of recovering from a stroke is setting goals. Work with your rehabilitation team to set useful goals. You may have both short- and long-term goals. For example, if you are not able to walk after your stroke, walking may be a long-term goal. To reach that goal, you may have a number of short-term goals, such as learning to stand alone, walking with a cane, etc.

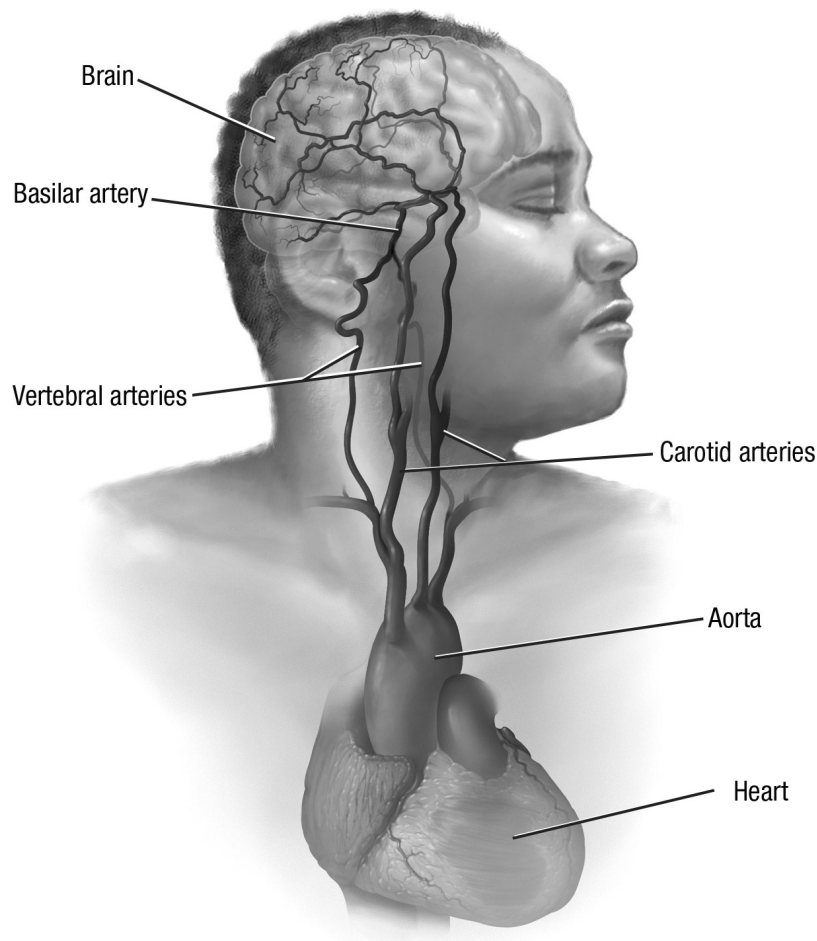
Members of your health care team can help you to create and work toward your goals.

## Structure and Function of the Brain

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### What is a stroke?

A stroke (also called a brain attack) is a form of **cerebrovascular disease** that affects the brain's **arteries**. A stroke occurs when an artery carrying oxygen- and nutrient-rich blood to the brain becomes clogged or ruptures (figure 1).



**Figure 1.** Blood flow to the brain

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There are two main categories of stroke — **ischemic** and **hemorrhagic**. Ischemic strokes are caused by a lack of blood supply to part of the brain. Blood flow to the brain may be obstructed by a buildup of plaque in the arteries or by a blood clot or other material.

A hemorrhagic stroke occurs when an artery in the brain leaks or ruptures, putting pressure on the surrounding brain tissue, causing damage. Brain cells beyond the rupture also are deprived of blood and damaged.

## How the brain works

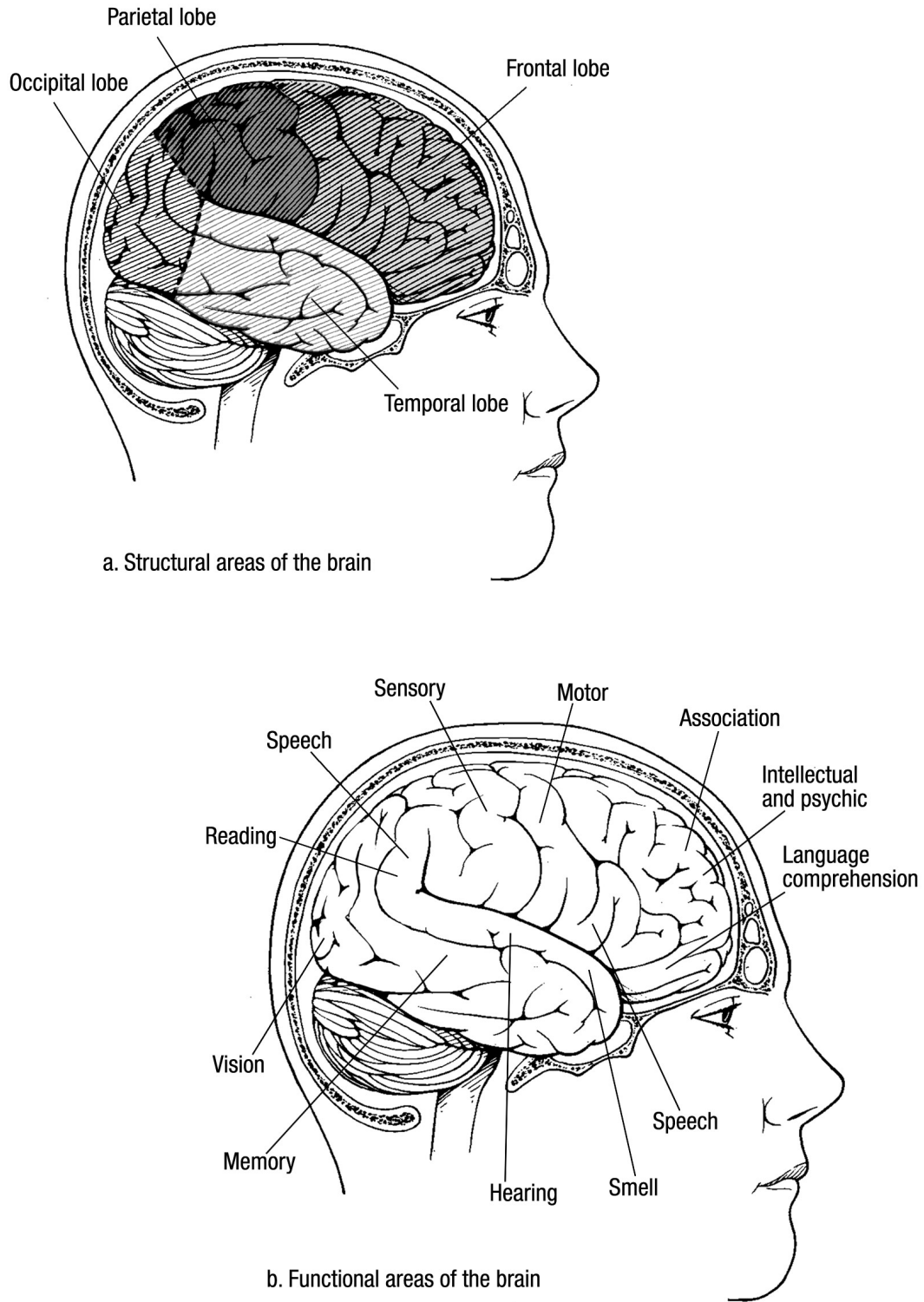
The brain is divided into two halves (cerebral hemispheres) that are further divided into **lobes**. The hemispheres look nearly the same and are connected but are responsible for different functions (figure 2). Each lobe has different functions.

To work properly, the brain needs a constant flow of blood. When a stroke occurs, the blood supply to the brain is disrupted, and brain cells are starved of oxygen, causing cells in the immediate area to die. These cells may die within minutes to a few hours after being deprived of oxygen. This area of dead cells is called an **infarct**.

Brain cells in the surrounding area also may be in danger. As brain cells die they release chemical messengers, setting off a “chain reaction,” which can harm or kill brain cells in the area around the infarct for several hours after the stroke.

For most people, the **left** cerebral hemisphere controls verbal functions, including language, thought and memory involving words. The **right** cerebral hemisphere usually controls nonverbal functions, such as reading maps and enjoying music. The right hemisphere also is involved in expressing and understanding emotions.

Although each hemisphere of the brain has different functions, the two parts work closely together to control the activity of the body. The left hemisphere controls the right side of the body and the right hemisphere controls the left side of the body.



**Figure 2.** The parts of the brain and their functions

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## Treatment for a Stroke

Treatment must begin soon after a stroke is diagnosed to ensure that no further damage to brain cells occurs and to increase the chance for full recovery. Medical and surgical treatment options vary, depending on where in the brain the stroke occurred and whether the stroke is ischemic or hemorrhagic.

## Effects of a Stroke

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A stroke may affect almost every function of your body. A stroke may affect you:

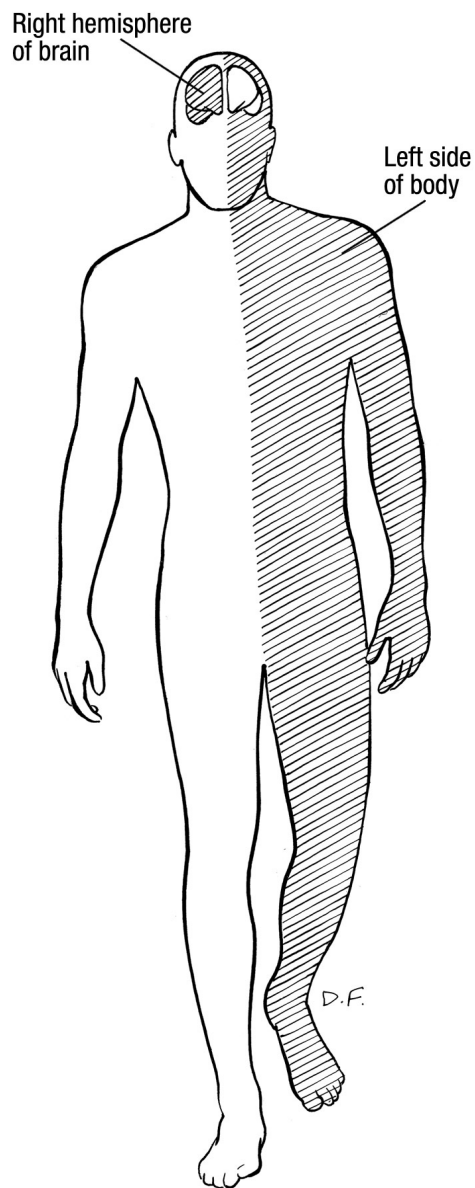
- **Physically** — Paralysis, weakness, loss of feeling or lack of coordination may affect your face, an arm or a leg, or it may affect an entire side of your body. You also may have visual problems or trouble speaking or swallowing.
- **Cognitively** — The way you think, interact with others or interpret everyday events may be affected.
- **Emotionally** — You may feel depressed and irritable, and you may have sensations of distress and grief and be uninterested in things you once enjoyed.

The effects of a stroke may be slight or severe, temporary or permanent, depending on:

- The type of stroke
- Which part of the brain is damaged
- How widespread the damage is
- How well the body repairs the blood supply to the brain
- How quickly and completely other areas of the brain take over the work of the damaged cells

Early treatment can minimize damage to the brain and resulting disability. This is one reason to seek emergency medical treatment as soon as stroke symptoms occur.

A stroke usually occurs in a single area in one hemisphere. A stroke in the left hemisphere affects the right side of the body, while a stroke in the right hemisphere affects the left side of the body.



**Figure 3.**

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A stroke on the *right* side of the brain may cause:

- Weakness (**hemiparesis**), paralysis (**hemiplegia**), or lack of coordination of the face, arm or leg on the *left* side of the body (figure 3)
- Lack of feeling and position on the *left* side of the body
- Decreased ability to judge distances, direction and position
- Visual changes
- Inability to think clearly
- Loss of awareness of half the body or forgetting objects on the *left* side (left- sided neglect). The neglect is usually more severe with strokes on the *right* side of the brain.
- Problems finding places or following a map
- Impulsive behavior



A stroke on the *left* side of the brain may cause:

- Weakness (hemiparesis), paralysis (hemiplegia), or lack of coordination of the face, arm or leg on the *right* side of the body
- Lack of feeling and position on the *right* side of the body
- Problems communicating are more common and usually more severe with strokes on the *left* side of the brain
- Behavior changes (slow, cautious and somewhat disorganized)
- Inability to problem solve

## Physical Effects of a Stroke

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The physical effects of a stroke may be noticed the most. Physical effects may include weakness and paralysis of some part of the body, including difficulties walking, talking, swallowing or seeing. Bowel and bladder control also may be affected. Fatigue is another physical effect that many people notice after a stroke.

### Problems with movement and sensation

After a stroke, you may not be able to move your arm or leg on one side of the body. You also may have changes in sensation and perception. For example, you may not be able to feel pain or pressure in your limbs due to loss of sensation. Also, you may not be able to tell where your arm or leg is in relationship to the rest of your body (loss of perception of body parts).

Because of one or more of these problems, the following may occur:

- **Edema** — Swelling that occurs when the body tissue has too much fluid. Hands, arms, feet and legs are most often affected by edema.
- Pressure sores — Reddened areas that persist, blisters or open sores. By changing position frequently while sitting, you can decrease the risk of a pressure sore on the bony area of the buttocks.
- Subluxation — Separation of the bones that make up the shoulder joint. This may occur if the arm affected by the stroke is not supported properly or if someone lifts you under the arms.
- “Frozen” shoulder — Soft tissue around the shoulder becomes tight because of weakness and lack of movement.
- Painful shoulder — Stretching and pulling of the shoulder muscles caused by lack of support for a paralyzed arm.
- **Flaccidity** — Lack of muscle tone. The limbs may appear floppy.
- **Spasticity** — Increased muscle tone with uncontrolled tightening or movement of the muscles. The limbs may seem stiff and may be difficult to move.
- Contractures — Loss of joint movement.

### What the family can do

Specific positioning techniques or exercise can be used to help prevent or limit these problems. Properly positioned pillows can help support joints and provide a soft cushion between bony areas of the limbs. Pillows also can be used to elevate a limb to help prevent or reduce edema.

If you are a caregiver, you may need help with turning and positioning your loved one. To prevent injury to your loved one and to yourself, get help when needed. Often, it may take two people to turn and reposition a person.

For more information about positioning someone who has had a stroke, ask a member of your health-care team about techniques you can use to save energy and reduce stress on your back. Your physician or therapist may recommend assistive devices to help with limb and joint support.

### ***Exercise***

If you cannot move your arms or legs after a stroke, your circulation may be affected — especially the circulation in your legs. Exercise may help to avoid the following problems:

- Muscle cramping
- Spasticity
- Painful or “frozen” joints
- Blood clots

### ***Problems communicating***

If a stroke affects the part of the brain that controls language, **aphasia** (loss of ability to speak or understand speech) may result. People with aphasia may have different problems:

- Trouble speaking
- Trouble understanding others
- Saying the wrong words or using words out of context
- Inventing words
- Trouble reading, writing, doing math

Sometimes after a stroke a person cannot control the muscles in the face and mouth. This may result in **dysarthria** — a speech problem in which someone knows what words to use but cannot make the right sounds because of lack of muscle control. People with dysarthria may speak slowly or their speech may sound slurred, muffled or hoarse.

If you or your loved one has aphasia or dysarthria after a stroke, a speech therapist will work with you. People with aphasia may learn ways to communicate by working around lost language skills. People with dysarthria may work to control and strengthen muscles in the face and mouth.

### **What the family can do**

- Try to keep the social environment as normal as possible.
- Talk about familiar names, places, interests and experiences. Use photos of family and friends and familiar objects to reinforce what you are talking about.
- Talk about everyday events at home and at work.
- Provide a calendar and a clock to help your loved one keep track of time.
- Avoid too much stimulation. Limit the number of visitors at one time. Turn off the TV or radio if people are visiting.
- Play familiar TV or radio programs for a short length of time.
- Use short, simple sentences. Present one idea at a time and give the person enough time to respond.
- Include the person in the conversation. Speak in a normal tone of voice and remember that the inability to find a word does not mean that a person has lost his or her intelligence.
- Support and encourage speech efforts. Allow the person to search for the word he or she wants. However, give the person the right word before he or she becomes frustrated.

If you have questions about communicating with a loved one after a stroke, talk with a member of your health care team.

### ***Swallowing difficulties***

Problems swallowing (dysphagia) may occur after a stroke. Eating and drinking is harder, and choking is more likely when someone has a swallowing problem.

Various problems may cause swallowing difficulties after a stroke, including:

- Poor head or upper body control
- Decreased lip and tongue strength
- Impaired memory or concentration

Any or all of these problems may cause **aspiration** (inhaling food or liquid into the lungs).

If a person has trouble swallowing, a swallowing evaluation may be done by an occupational therapist or speech therapist. This evaluation includes a physical exam and some tests. After the evaluation, decisions about eating and treatment of the swallowing problem can be made.

An occupational or speech therapist may recommend specific exercises, treatment techniques and positioning to help with swallowing.

A feeding tube may be needed if trouble swallowing does not allow for proper nutrition. A **nasogastric** or **gastrostomy tube** (feeding tube in the nose or stomach) may be placed to ensure proper nutrition. How long the tube is in depends on your ability to eat enough food.

### **Bladder and bowel control**

After a stroke, you may have a hard time knowing when to empty your bladder, or have a bowel movement. If you have problems walking, you may not be able to get to the bathroom alone. Also, if you have difficulty speaking, you may not be able to tell someone when you have to go to the bathroom.

Each person is different, so treatment plans for bladder and bowel control depend on the individual's specific problems.

If bowel or bladder control is a problem for you, members of your health care team will work with you on a program of bowel and bladder management.

## Fatigue

After a stroke, feeling tired is common. Generally, people start to feel less tired after a few months, although some people may feel tired for years after a stroke.

Try to figure out what makes you tired. When you know what makes you tired, you can plan how to save your energy.

Some reasons you may feel tired after a stroke include:

- Everyday activities, such as walking, talking and dressing, may take more energy than they did before the stroke.
- You may have less energy because of trouble sleeping or medications you are taking.
- After a stroke you may feel frustrated, anxious, angry or depressed, and emotions can be as draining as physical activity.

### Tips for saving energy

- Work at a moderate pace. Working fast on some jobs may require much more energy per minute than doing the task at a moderate pace.
- Organize tasks to get rid of wasted steps and extra movements. Break large jobs into smaller ones to allow for rest periods and keep frequently used items within easy reach.
- Avoid working with your hands over your head.
- Avoid isometric work in which your muscles are always tensed. Isometric work involves straining or contracting your muscles without movement of the muscles (holding a briefcase or gripping tools).
- Avoid lifting or moving heavy objects.
- Sit, don't stand, while doing tasks.
- Avoid hot weather, direct sunlight and increased humidity because it may increase fatigue.
- Schedule a rest period after all meals.

If the work you are doing makes you short of breath and causes fatigue, you are either working too fast or the work is too hard. If feelings of fatigue persist, talk to your health care provider.

## Cognitive Effects of a Stroke

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### Perceptual changes after a stroke

After a stroke, you may have temporary or permanent changes in perception. Perception is the brain's ability to give meaning to information from the world around us. Perceptual changes may make it hard for you to understand what you feel, see or hear, even though your senses are fine. The ability to judge distance, size, position and speed of movement may be influenced by perceptual changes.

Some problems that may occur with perceptual changes include:

- Lack of awareness of half the body or half of the surrounding environment (neglect). If you have neglect, you may bump into or ignore objects on the affected side.
- Field cut or **homonymous hemianopsia**. Each eye sees only half or a part of its visual field (field cut). If you have field cut, you may bump into things on the affected side or complain that objects suddenly appear or disappear. Reading may be hard if you have field cut; you may lose your place on the page or cut words in half while reading.
- Problems doing familiar movements when asked (**apraxia**). If you have apraxia, you may use common objects inappropriately (e.g., use a toothbrush to comb hair), be unable to follow commands, or put clothes on backwards or inside out.
- Problems judging depth and distance (e.g., space between other objects and oneself). If you have spatial-perception difficulties, you may overreach or under reach for objects or may have trouble walking up or down stairs. Other problems with everyday activities may include trouble getting food off the plate or pouring liquids into a glass.

If you have perceptual changes after a stroke, you may need activity restrictions to keep you safe. For example, you may not be able to drive or use power tools. Some activities may be resumed later.

### Memory, thinking and behavior problems

After a stroke, you may have problems with memory, thinking and behavior. A stroke may cause problems in the following areas:

- Alertness and concentration. After a stroke, you may have a shorter attention span and be easily distracted. You may not be able to do more than one thing at a time.
- Self-awareness. After a stroke, you may not be aware of problems caused by the stroke. This may lead to unsafe situations. For example, you may feel that you can drive, while in fact you have perception problems that make driving unsafe. The lack of self-awareness also can lead to social behavior that is out of place, such as acting or speaking without thinking about the consequences or ignoring social boundaries.

- Memory and learning. If the stroke affected your memory, you may have a hard time remembering things like your daily schedule, and you may not remember new things that you learn.
- Reasoning, planning and problem-solving. After a stroke, you may appear disorganized. This may be caused by confusion of past and present events. Also, if your memory is affected by the stroke, you may have problems planning the order of events and following through. Ability to reason may be affected, too, causing poor problem-solving or delays in making decisions.

Family members can help a loved one adapt to cognitive changes. Ask a member of your health care team for ways to help your loved one.

## Emotional Effects of a Stroke

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You may have emotional changes after your stroke. You may feel sad or anxious or angry. There may be days when you feel fine, followed by days when you feel very sad. After a stroke, some people may have depression that requires treatment.

### Grief

When abilities are lost after a stroke — such as the use of an arm or leg or the ability to talk or work on hobbies — you can feel real grief. This is just like the grief one feels after the death of a loved one. Symptoms of grief may include tearfulness, restless sleep and a change in appetite. The support of family and friends can help.

#### What the family can do

Let your loved one know that it is all right to grieve — that grief is a normal human response. Explain that it takes time to get over the loss and offer whatever support you can.

If language problems and other disabilities, such as memory and attention lapses, get in the way of your efforts to support a loved one who has had a stroke, discuss the problem with a member of your health care team.

### Intermittent distress

After a stroke, you may cry, be irritable and have some “bad days.” Outbursts of temper may occur. This intermittent distress (that is, it comes and goes) is common. As long as you are able to feel that things are getting better, you probably will do well in the long term.

#### What the family can do

Be a good listener and offer support. Give the person who had the stroke a chance to voice negative feelings. If you have not had a stroke yourself, do not say that you understand. Instead, say that you want to understand. It usually does not help to try to cheer up your loved one. Be careful not to give the message that he or she should not feel bad. Encourage your loved one to do things that helped with stress in the past. For example:

- Spending time outdoors
- Visiting with family and friends
- Taking a warm shower or bath
- Reading a book or watching a movie

## Major depression

Sometimes depression does not come or go but lasts a long time. After a stroke, you may think you will not get better. This may signal a more serious type of depression. Some signs may include a change in appetite, changes in sleep patterns, loss of energy and loss of interest in activities and people.

Depression may be a response to disabilities related to your stroke. The stroke also can affect areas of the brain that control emotions, causing depression.

### What the family can do

Major depression needs treatment. If the cause of the depression is the direct effect of the stroke on brain function, people may need professional help. Encourage the person to get help. Assure your loved one that being depressed is not a sign of weakness, and it is no one's fault.

Treatment for depression may involve medication (antidepressants) or cognitive therapy (type of counseling). Sometimes, medication and cognitive therapy are used together.

## Other Effects of a Stroke

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### Poorly controlled crying and/or laughing

After a stroke you may find that you cry (or laugh) more easily than before the stroke. This may happen even when the crying (or laughing) doesn't fit your mood. You may cry or laugh in reaction to any emotion or to a physical effort, such as trying to speak or rise from a chair. These emotional displays can seem inappropriate and may be embarrassing.

### **What the family can do**

Let your loved one know that you understand that the crying or laughing is not something that he or she can control. Do not overreact. Poorly controlled crying or laughing can get worse if the person tries too hard to control it. When the crying or laughing gets out of control, coach your loved one to relax or use the distraction of another activity to end the behavior.

Although there is no cure for reflex crying or laughing, some medications may help. Talk to your health care provider about whether medications would be helpful.

### **Disturbed sleep or appetite**

A stroke may affect the brain centers that control sleep and appetite. Disturbed sleep and appetite can include both overeating or sleeping and under eating or sleeping.

The areas of the brain that control sleep and appetite are very close to the ones that control both mood and pain. Medications (antidepressants) that are used to improve mood often can help with sleep, appetite, and some kinds of pain.

### **Sexuality concerns**

The physical effects of a stroke may make you feel uncomfortable with your body. *Sexuality* involves your personality and your feelings about yourself. Your view of yourself as a man or woman and your body image will affect how you communicate with and respond sexually to other people.

Your sex life need not end after a stroke. It is common for people to fear rejection or be unsure about their ability to perform sexually, but your sex drive does not just go away after a stroke. The effects of a stroke on sexual function may vary. Sexual activities, whether intercourse, manual stimulation, oral stimulation or kissing, can be as varied for you as for the able-bodied person.

As you go through rehabilitation, you may have questions about how a stroke will affect your sexuality. Discuss your concerns with any member of the health care team with whom you feel comfortable.

### **What the family can do**

If you notice that the person recovering from a stroke is not eating or sleeping well, contact the health care provider. A number of medical problems can interfere with sleep or appetite.



## Impact on Family Members and Friends

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Family members are important in the rehabilitation process after a stroke. Adjustment to changes after a stroke can cause stress on the entire family. Family roles and activities may need to change. One possible change may be that someone becomes a caregiver.

A caregiver is someone who takes responsibility for the primary care of someone else, either permanently or temporarily. After a stroke, besides physical care, companionship and emotional support also may be needed. Family members who become caregivers may have many responsibilities, such as working outside the home and caring for a home and children. Being a caregiver can be a challenge.

Caregivers need to take care of themselves in order to have something to give others. They should set limits, care for their own health and ask for help when they need it.

Ask a member of your health care team for more information about the needs of the caregiver.

## Returning Home

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After a stroke, many people will need treatment or nursing care after leaving the hospital. Planning ahead may help make the return home easier. Talk with members of your health care team to plan leaving the hospital after a stroke.

As you plan to go home, think about the following issues:

- **Personal safety** — Your personal well-being is important. For safety reasons, you may need ongoing supervision. Changes in movement, sensation, thinking, judgment and memory may put you at risk for harm if you are left alone.
- **Home health care** — Talk with a member of your health care team about the type of care needed and resources available for getting that help.
- **Making the home safe** — Assistive devices are available for the home. To make the home safer, keep hallways well lit, remove throw rugs, etc. Talk with a member of your health-care team about your needs.
- **Maintaining a healthy lifestyle** — After a stroke, you may have to take several medications. Medications must be taken as prescribed. Also, risk factors for stroke may still exist. If you had a stroke, you are at increased risk of having another stroke. Although you cannot change some of your risk factors, you may be able to change others to lessen the chance of having another stroke (quit smoking, lose weight, eat a healthy diet, exercise).
- **Returning to normal activities** — Resume normal activities as soon as you feel able.

## Driving after a stroke

Being able to drive may be an important part of your life because it gives you independence and helps you return to your normal daily activities. However, after a stroke you may not be able to drive.

After a stroke, you may have physical, thinking or vision problems that make driving unsafe. For this reason, the privilege of driving may be denied. Some states require that physicians notify the Department of Public Safety if it is unsafe for a person to drive after a stroke. Other states rely on the physician to help people who had a stroke decide whether to drive. If your license is taken away, you must pass the written and behind-the-wheel driving tests, and a physician must give you medical clearance before your new license is issued.

The same problems that make driving unsafe also can make other activities unsafe, such as operating motorcycles, personal watercraft, power boats and power equipment.

To determine whether you can drive after a stroke, your health care provider may do some testing. If your physician is concerned about your safety as a driver, he or she may recommend to the state that you be retested by the Department of Public Safety. It is in your best interest to take the advice of your physician. If necessary, driving lessons can be arranged.

## Stroke Prevention

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Preventing a stroke must be a way of life. Learn about the risk factors you can control, and incorporate necessary changes into your lifestyle. Likewise, become familiar with the warning signs for a stroke and transient ischemic attack (TIA).

A TIA is a temporary interruption of blood flow to part of the brain. The symptoms for a TIA are the same as for a stroke, but they appear for a shorter period of time.

## Warning Signs

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Strokes and TIAs usually strike *suddenly*, often without warning. A TIA is a serious sign that a stroke may follow. Although symptoms are sometimes subtle and often painless, strokes and TIAs are medical emergencies and require immediate medical attention. If you notice one or more of the following signs in yourself or someone else, call 911 or your designated emergency number immediately. Then call your health care provider.

### **The most common warning signs of a stroke are:**

- Sudden numbness, weakness, or paralysis of the face, arm, or leg, usually on one side of the body
- Difficulty speaking or trouble understanding others
- Sudden blurred or decreased vision or sudden double vision
- Dizziness, loss of balance or loss of coordination
- Sudden, severe headache with no apparent cause
- Difficulty swallowing

The warning signs may be temporary, lasting from a few minutes to 24 hours. Even symptoms lasting only a short time may be signs of a stroke, so treat them seriously.

Every minute counts. The longer a stroke goes untreated, the greater the damage. The success of most stroke treatments depends on how quickly a person is seen by a health care provider after symptoms begin. Seek emergency medical care for a stroke immediately.

## Community Resources

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Most communities have stroke support groups in which caregivers and people who have had a stroke share experiences and advice. Ask your social worker for more information about these groups, or look in the Yellow Pages under “Social and Human Services.” Your local library is also a good source of information about stroke and stroke rehabilitation.

For more information about strokes, see: [www.healthfinder.gov](http://www.healthfinder.gov)

## Review Questions

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After reading this information, you should be able to answer the following questions.

- Which of the following are warning signs for a stroke? You may circle more than one.
  - Sudden weakness on one side of the body
  - Difficulty speaking
  - Sudden severe headache
  - Chest pain
  - Sudden blurred or decreased vision
  - Sudden loss of appetite
  
- Name five members of the rehabilitation team.
- What is the function of the left hemisphere of the brain?
- What is the function of the right hemisphere of the brain?
- What are two possible problems with movement you might have after a stroke?
- What are two problems with perception that you might have after a stroke?
- What are two possible cognitive changes after a stroke?
- How might a person’s emotions change after a stroke?
- What is the role of family members and friends after a loved one has a stroke?
- What are three safety issues to think about before returning home?
- True or false. Treatment for a stroke should begin as soon as possible after a stroke is diagnosed
- Identify one source for information related to strokes.

## Word List

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**Aphasia** — Loss of ability to speak or understand speech.

**Apraxia** — Loss of ability to efficiently carry out voluntary muscle movements. This may include the muscles used to move arms and legs or produce speech.

**Arteries** — Blood vessels that carry blood from the heart to other areas of the body.

**Aspiration** — Inhaling fluid, body secretions or small particles into the lungs.

**Cerebral** — Pertaining to the brain.

**Cerebrovascular** — Pertaining to the blood vessels in the brain.

**Dysarthria** — Speech impairment caused by loss of speed, strength, precision or coordination of the muscles that control speech.

**Dysphagia** — Difficulty swallowing or inability to swallow.

**Edema** — Swelling that occurs when the body tissue has more fluid than normal.

**Flaccidity** — Softness or weakness of the muscles.

**Gastrostomy tube** — Feeding tube placed through the abdomen and into the stomach.

**Hemianopsia** — Loss of vision of one-half of the visual field of one or both eyes.

**Hemiparesis** — Muscle weakness of one side of the body.

**Hemiplegia** — Paralysis of one side of the body.

**Hemisphere** — Half of any spherical (round) or roughly spherical structure, as the cerebral hemisphere.

**Hemorrhagic** — Pertaining to profuse bleeding (internal or external) caused by damage to a blood vessel.

**Homonymous** — Pertaining to the corresponding vertical halves of the visual fields in both eyes (e.g., the inner part of the field of the right eye and the outer part of the field of the left eye).

**Infarct** — Area of tissue that is damaged or dies because of a blocked blood supply.

**Ischemic** — Refers to lack of blood in some part of the body. Often refers to the situation in which an artery is narrowed or blocked by atherosclerosis (hardening of the arteries) and cannot deliver enough blood to the organ it supplies.

**Lobe** — More or less well-defined part of any organ.

**Nasogastric (NG) tube** — Tube placed through the nose into the stomach.

**Paralysis** — Complete or partial impairment of the ability to move a part of the body.

**Physiatrist** — Physician specialized in physical medicine and rehabilitation.

**Spasticity** — Uncontrolled tightening or movement of muscles.

**Transient ischemic attack (TIA)** — Temporary interruption of blood flow to part of the brain. The symptoms for a TIA are the same as for a stroke, but they appear for a shorter period of time (several minutes to 24 hours) and then disappear.

*This material is for your education and information only. This content does not replace medical advice, diagnosis or treatment. New medical research may change this information. If you have questions about a medical condition, always talk with your health care provider.*

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