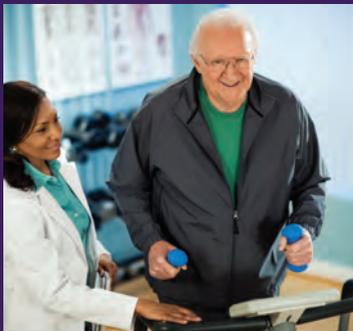


INFORMATION  
REHABILITATION  
PREVENTION  
SELF ADVOCACY  
RECOVERY

# HOPE

A Stroke Recovery Guide



RELATIONSHIPS  
MOVEMENT  
RESOURCES  
RELATIONSHIPS  
EXERCISE

[www.stroke.org](http://www.stroke.org)





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Dear Friend,

Recovery from stroke is a lifelong process. For many people recovery begins with formal rehabilitation. It is important for you and your family to know that no matter where you are in your recovery journey – there is always hope. Learn as much as you can about stroke and recovery, and the resources that are available.

National Stroke Association has designed this publication to provide you with valuable information and help you on your road to recovery.

**HOPE: The Stroke Recovery Guide** is divided into four sections:

**Helpful information:** a collection of important post-stroke issues and suggestions for how to address these concerns.

**Opportunity through self-advocacy:** find out how to be an active participant in your recovery and why it is so important.

**Preventing another stroke:** life-saving information about stroke awareness, symptom recognition, and how to decrease your chances of having another stroke.

**Exercises and recommendations:** two illustrated exercise programs to help you gain strength and range of motion.

National Stroke Association is a leading nonprofit organization focusing 100 percent of its resources and attention to reduce the incidence and impact of stroke. Please contact us at 1-800-STROKES (1-800-787-6537) or visit [www.stroke.org](http://www.stroke.org) on the Internet if you need further information or support. We look forward to helping you in any way we can.

Best wishes,

A handwritten signature in black ink, appearing to read "Jim Baranski". The signature is fluid and cursive, with a long, sweeping underline that extends to the left.

Jim Baranski  
Executive Director/CEO

## ACKNOWLEDGEMENTS

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# CHAPTER ONE

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## Helpful Information

### Beginning the Recovery Process Through Rehabilitation

The goal of stroke rehabilitation is to restore as much independence as possible by improving physical, mental and emotional functions. This must be done in a way that preserves your dignity and motivates you to re-learn basic skills that the stroke may have affected, such as eating, dressing and walking.

Rehabilitation should start in the hospital, as soon as possible after the stroke. If you are medically stable, rehabilitation may begin within one day after the stroke, and should be continued after release from the hospital, if needed. For others, rehabilitation can take place months or years later as your condition improves, or in some cases, worsens.

Stroke rehabilitation options will depend on several factors, including ability to tolerate intensity of rehabilitation (hours/stamina), degree of disability, available funding, insurance coverage, and your geographical area.

**The following chart reviews the main rehabilitation options:**

Programs	Services	Setting	Frequency	Likely Candidates
<b>Acute care (inpatient) and rehab hospitals</b>	24-hour medical care and a full range of rehab services	Hospital or special rehab unit of a hospital	Several hours each day (most demanding)	Survivors who have many medical issues and may develop problems without continued medical treatment
<b>Sub-acute facilities</b>	Provide daily nursing care and a fairly wide range of rehab services	Rehab center, rehab unit of a hospital, skilled nursing facility (short-term nursing care) of skilled nursing home (long-term), skilled nursing unit in a hospital	Less demanding than acute programs, but continue for longer periods of time	Survivors who have serious disabilities but are unable to handle the demands of acute programs in a hospital
<b>Long-term care facilities</b>	One or more treatment areas	Nursing home, skilled nursing facility	2–3 days per week	Survivors who have their medical problems under control but still need 24-hour nursing care
<b>Outpatient facilities</b>	One or more treatment areas	Doctor's office, out patient center of a hospital, other outpatient centers, and some adult day centers	2–3 days per week	Survivors who have their medical problems under control enough to live in their own homes and can travel to get treatment
<b>Home health agencies</b>	Specific rehab services in one or more treatment areas	In the home	As needed	Survivors who live at home but are unable to travel to get their treatment

## Rehabilitation Health Care Team

During all phases of your rehabilitation and recovery, you will most likely work with a team of professionals from different specialties. It's important that you get to know your health care team and feel comfortable addressing any recovery issue with them. See table on following page for detailed descriptions of the rehabilitation team.

Services delivered during rehabilitation may include physical, occupational, speech and language therapies, therapeutic recreation, and specialty medical or psychological services.

### Physical Therapy

Physical therapy (PT) helps restore physical functioning and skills like walking and range of motion, and addresses issues such as partial or one-sided paralysis, faulty balance and foot drop. Read Chapter 4 of this manual for exercise examples.

## Occupational Therapy

Occupational therapy (OT) involves re-learning the skills needed for everyday living including eating, going to the bathroom, dressing and taking care of yourself.

## Speech Therapy

As a result of stroke, you may have problems communicating, thinking or swallowing. Speech and language therapy (SLT or ST) will involve techniques to reduce and compensate for these problems.

Two conditions – dysarthria and aphasia – can cause speech problems among stroke survivors. With dysarthria, a person is no longer able to pronounce speech sound properly because of weakness or trouble controlling the face and mouth muscles. With aphasia (see details in Appendix A), a person thinks clearly but is unable to process language to either talk or understand others. Speech and language therapy can teach you and your family methods for coping with these communication challenges. If your communication difficulties are severe, a therapist may suggest alternative ways of communicating, such as using gestures or pictures.

Speech and language therapists also work with memory loss and other “thinking” problems brought about by the stroke. A therapist can teach you and your family ways to help you with these problems.

Rehabilitation Team	
<b>Physiatrist</b>	Specializes in rehabilitation following injuries, accidents or illness
<b>Neurologist</b>	Specializes in the prevention, diagnosis and treatment of stroke and other diseases of the brain and spinal cord
<b>Rehabilitation Nurse</b>	Specializes in helping people with disabilities; helps survivors manage health problems that affect stroke (eg, diabetes, high blood pressure) and adjust to life after stroke
<b>Physical Therapist (PT)</b>	Helps stroke survivors with problems in moving and balance; suggests exercises to strengthen muscles for walking, standing and other activities
<b>Occupational Therapist (OT)</b>	Helps stroke survivors learn strategies to manage daily activities such as eating, bathing, dressing, writing or cooking
<b>Speech-Language Pathologist (SLP)</b>	Helps stroke survivors re-learn language skills (talking, reading and writing); shares strategies to help with swallowing problems
<b>Dietician</b>	Teaches survivors about healthy eating and special diets (eg, low salt, low fat, low calorie)
<b>Social Worker</b>	Helps survivors make decisions about rehab programs, living arrangements, insurance, and support services in the home
<b>Neuropsychologist</b>	Diagnoses and treats survivors who may be facing changes in thinking, memory, and behavior after stroke
<b>Case Manager</b>	Helps survivors facilitate follow-up to acute care, coordinate care from multiple providers, and link to local services
<b>Recreation Therapist</b>	Helps stroke survivors learn strategies to improve the thinking and movement skills needed to join in recreational activities

For help in locating a private speech and language therapist, you can also contact the American Speech – Language – Hearing Association at 1-800-638-8255 or the social work or speech and hearing department at your local hospital or rehabilitation facility.

## Recreational Therapy

Therapeutic recreation reintroduces leisure and social activities to your life. Activities might include swimming; going to museums, plays and libraries; or taking music and art lessons. An important factor within this therapy is your getting back into the community and developing social skills again. A therapeutic recreation specialist may be available through your hospital, in community-based programs/organizations (eg, YMCA or senior centers), and adult day programs.

## Health Insurance

Rehabilitation programs can be costly. So it is important to know what portion of the bill your health insurance will pay and what you will have to pay “out-of-pocket.” It is also good to know if you can choose any doctor you want. Stroke recovery may require extensive rehabilitation. This may include many services in different settings. Check with your health insurance company to find out what settings you are covered under.

If you worked prior to your stroke, it is important that you apply for disability benefits shortly after your stroke. These benefits can assist you financially until you are able to go back to work.

There are several types of disability benefits that may apply to you, including private disability insurance or government disability benefits. Private disability insurance benefits are provided by an employer or through a disability insurance plan you purchased on your own. The Social Security Administration (SSA) has two programs that provide money to people who are disabled and unable to work:

- Social Security Disability Insurance (SSDI)
- Supplemental Security Income (SSI)

Because of the time needed to process the paperwork, be sure to contact them as soon as possible. Apply for benefits even if you plan to go back to work. Also, make and keep copies of all the documents you send to them and letters they have sent to you. Keep track of the names of all the people you talked to, dates and what they told you. If you are denied, find out what the appeal process is, and challenge your denial.

You can learn more about Social Security programs on the Web at [www.ssa.gov](http://www.ssa.gov) or by calling (800) 772-1213.

Every health insurance plan has coverage limitations. But you may have options for getting the rehabilitation services you need:

- Try contacting the “exceptions” department of your health plan.
- For more information on your specific private health insurance plan, contact your insurance company or your employer’s benefits administrator.
- Ask to work with a case manager for chronic or catastrophic illness.
- File an appeal if you feel you are being denied payment or a medical service to which you are entitled.
- If you need help talking to your insurance company about your health care and recovery, consider contacting resources in your community, including vocational rehabilitation services, aging agencies, disability law/elder law projects and the Social Security Administration Office of Disability (<http://www.ssa.gov/disability>). Ask the social worker or discharge planner at your rehab hospital for contacts.
- For more information on Medicare coverage for stroke rehab, call (800) MEDICARE or visit [www.medicare.gov](http://www.medicare.gov).
- Trade inpatient rehab days for outpatient days. Some plans have short inpatient coverage but longer home care/outpatient coverage.

## Discharge Planning

Discharge planning is the process of preparing you to live independently in the home. The purpose is to help maintain the benefits of rehabilitation after you have been released from the program. It begins early during rehabilitation and involves you, your family and the stroke rehab team. You should be discharged from rehab soon after your goals have been reached.

### **Discharge planning can include:**

- Making sure you have a safe place to live after discharge.
- Deciding what care, assistance, or special equipment you will need.
- Arranging for more rehab services or for other services in the home.
- Choosing the health care provider who will monitor your health and medical needs.
- Determining the caregivers who will provide daily care, supervision, and assistance at home.
- Determining which community services may be helpful now or after some time. Examples include meal delivery, volunteer rides to the rehab center, visitor programs and caregiver relief programs.

## Social Support

Socializing with family and friends is an important part of stroke recovery. Everyone needs support. And, stroke survivors are no exception. There are many ways to get the support you need.

## Support Group

A support group allows you to interact with other stroke survivors who know what you are going through. People in a support group can:

- Help you find ways to solve problems related to your stroke.
- Share information about products that may help your recovery.
- Encourage you to try new things.
- Listen to your concerns and frustrations.
- Give you a chance to get out of the house.
- Give you a chance to share your story.
- Become your new friends.

## Family and Friends

Friends and family can also provide support. They can:

- Involve you in their activities.
- Encourage you to join community recreation programs or support groups.
- Arrange for you to attend social gatherings and fun activities.
- List all the phone numbers of the people you care most about, allowing you easy access to them when you need it most.
- Help you buy and write cards or letters to send to people.
- Give you rides to social events.

For a group near you, contact National Stroke Association at (800) STROKES or at [www.stroke.org](http://www.stroke.org) and then select the Recovery button at the top of the screen and choose “Stroke Support Groups” from the list of options.

## Going Back Home

After a stroke, you may be apprehensive about being on your own at home. Common fears you may have include:

- a stroke might happen again
- you may realize the extent of your disabilities and be unable to accept them
- you might eventually be placed in a nursing home
- your loved ones may not be prepared to face the major and unexpected responsibility of caring for you
- friends and family will abandon you.

You may display these fears as anger, agitation or tension. Talk openly with your doctor and family to help ease your concerns. With a positive attitude, it will be much easier to find ways to overcome the difficulties.

## Modifications to the Home

### Renovating the structure

The home usually can be modified so that narrow doorways, stairs and bathtubs do not interfere with your ability to manage personal needs. Obviously, the expense involved in remodeling must be considered. Many families cannot afford to pay for extensive alterations or move to more convenient living quarters.

### Renovating the environment

The alternative to costly renovations is to modify your home environment, removing barriers and adding assistive devices such as ramps and grab bars. A local rehabilitation hospital can usually give suggestions on assistive devices as well.

**Safety** is an important consideration when making adaptations to a home. Many areas of the home can be made safer through the removal of throw rugs and furniture that may cause an accident as you move around the house or apartment. It might be helpful to ask for assistance when in the bathroom or kitchen— depending on your strength, ability and judgment.

**Assistive devices** such as grab bars can assist you in using the toilet, tub or shower and can be installed at strategic spots in the bathroom. A raised toilet seat and a tub bench may be helpful. A hand-held shower can be attached to the bath or shower faucet so a shower may be taken while seated. Plastic strips that adhere to the bottom of the tub or shower help guard against falls. Long-handled brushes, washing mitts with pockets for soap or soap-on-a-rope aid in bathing. Electric toothbrushes, razors and hair dryers are also useful.

## Modifications in Daily Living Activities

### Meal Preparation

Meal preparation is easier with the assistance of small electric appliances such as food processors, mixers, blenders, toaster ovens, can openers and juicers. “Lazy Susans” placed on kitchen counter tops and in low cupboards make spices and utensils more accessible. Dishes and pot lids can be stored vertically. If the counter top is too high, substitute workspace can be made by opening a drawer at the desired height and placing a cutting board or breadboard over it, or by using a wheelchair lapboard. To reduce the time you spend on meal preparation, consider using “Meals-on-Wheels,” a program that will deliver one meal daily. Check with your local social services department to find out about this and other programs. Seniors can often get healthy, low-cost meals at senior centers. Check your local newspaper for locations, times and menus.

### Eating & Nutrition

Eating well after a stroke is important to your recovery. Choosing healthy foods can help your energy level for therapy, exercise and favorite activities. Be sure to plan ahead and keep things as simple as possible.

Weight control is also important. Inactive people can easily become overweight from eating more than a sedentary lifestyle requires. Obesity can also make it difficult for someone with a stroke-related disability to move around and exercise.

- Eat the biggest meal early in the day when you have energy; keep the last meal of the day simple.
- Choose pre-washed, pre-cut fruits and vegetables from the grocery store.
- Ask friends or family members to make healthy meals that can be stored in the refrigerator or freezer.

## **Nutrition Resources**

Nutritional charts, recipes, and other suggestions for restricted diets can be obtained from many sources, including your state health department, the local Office on Aging, public libraries or through stroke support groups and other self-help groups. In addition, the consumer affairs departments of many food companies publish free booklets on diet and nutrition.

## **Special Utensils**

Special utensils can help if your arms and hands are impaired. These include flatware with built-up handles, which are easier to grasp, rocker knives for cutting food with one hand, and attachable rings that keep food from being pushed off the plate accidentally. Rubberized pads under the plate help keep it from sliding. These devices are available through medical supply houses.

## **Swallowing**

If you have trouble swallowing, you may need to be observed while eating so that you do not choke. Choose soft foods. Tougher foods should be cut into small pieces or pureed. Your beverages may need to be thickened to keep them from going down the wrong way. Natural thickeners include tapioca, flour, instant potato flakes, oats and matzo meal. Consult with a speech and language therapist for additional help with swallowing problems. If you are unable to obtain adequate nutrition by mouth, a dietician can suggest dietary supplements or alternative means of food preparation and eating.

## **Diet Concern for Diabetic Stroke Survivors**

Usually diabetic stroke survivors have had diabetes prior to their stroke and are used to taking the disease into account when planning meals. However, sometimes a stroke changes the severity of your diabetes or eating problems interfere with your previous diabetic diet. If you require insulin treatment for your diabetes, it is particularly important that you consult with a registered dietician. Also, some diabetic stroke survivors who previously gave themselves daily injections of insulin will need training by a nurse or occupational therapist in how to do this with one hand. This training should be done before leaving the hospital. For more information, contact the American Diabetes Association, 1701 N. Beauregard Street, Alexandria, VA 22311 or 1-800-DIABETES (1-800-342-2383).

## Dressing/Grooming

Dressing yourself is a basic form of independence. The added value of being neatly and attractively dressed enhances your self-image. You should always try to change from nightclothes and robes into comfortable day wear.

### **There are many ways to minimize the difficulties of getting dressed:**

- Avoid tight-fitting sleeves, arm holes, pant legs and waistlines; as well as clothes that must be put on over the head.
- Wear clothes that fasten in front.
- Replace buttons and zippers with Velcro fasteners.
- Substitute a cape for a coat and Velcro closures on shoes for laces.
- Avoid shoes that stick to the floor (eg, crepe-soled shoes); they could possibly cause a fall.

Certain devices can aid in dressing and grooming, including a mirror that hangs around your neck, a long-handled shoehorn or a device to help pull on stockings. These and similar items can be found in medical supply houses.

Having a systematic approach can make it easier to get dressed. Clothing for the day should be laid out before beginning to dress. You should be safely seated and permitted to dress yourself to the extent possible. Enough time should be allowed for dressing.

It may be possible for an occupational therapist to visit your home and recommend adaptations.

## Oral Hygiene

Regular oral hygiene care is important for maintaining good health and for reducing the risk of serious illnesses such as pneumonia. Make sure that your mouth is kept thoroughly clean, including the tongue, roof of the mouth and dentures. Clean your mouth after every meal. A dry mouth can lead to increased concentration of harmful oral bacteria. If your mouth is dry, you can moisten it every few hours using a damp swab or a small amount of water mist sprayed from an atomizer. If you have decayed teeth, see your dentist.

## Loss of Bowel or Bladder Control

You are not alone when it comes to incontinence. This common condition for stroke survivors can be distressing. You are encouraged to address this issue or issues of frequency and urgency with caregivers and your doctor. Having trouble urinating may also be a problem. You may need to use a small flexible tube called a catheter to urinate. It's important to rule out urinary tract infections. There are many medicines available that may be able to prevent these conditions. A consultation with a urologist may be necessary.

Constipation and involuntary release of stool can also be a problem. These may result from:

- Reduced fluid intake
- What you eat
- Not moving around enough
- Side effects from prescription drugs
- Being unaware that you need to use the bathroom
- Weakness in the muscle that holds stool until you reach a bathroom
- Being unable or reluctant to ask for help.

The following suggestions might help to make these conditions easier to manage:

- Set up a regular toileting schedule, perhaps every two hours throughout the day. Also try to use the bathroom immediately after meals. This system can often improve bowel and bladder function.
- In the bathroom, use a raised toilet seat.
- Install grab bars in the bathroom to make it easier to get on and off the toilet.
- Stool softeners, mild laxatives, suppositories or small enemas (available in drug stores), as well as diet, can aid in bowel function and help to avoid constipation or impaction.
- Have a ready supply of disposable or washable bed pads and underclothing, which are commonly available in drug stores and medical supply houses.

If getting to the bathroom during the night is a problem, it may be helpful to:

- Avoid fluids for two or three hours before bedtime.
- Use a bedside commode or urinal if you have difficulty getting out of bed.
- Place your walker or cane near the bed for easy access.
- Leave a light on at night.
- Place a bell on the night table that can be used to waken a caregiver if needed.

## Medicines

You, your family and your doctor need to work as a team to ensure that medicines produce the desired benefits, particularly if drugs are taken for more than one condition. For example, medicines may be prescribed for high blood pressure, diabetes and heart disease as well as stroke. In combination, these can counteract each other or may produce undesirable side effects. If several doctors have been consulted, select one with whom you can discuss all of the drugs you are currently taking.

Make a list of every medicine you are now taking or place all the bottles in a plastic bag and take them to the appointment. Be sure to include all of your prescriptions (even those from the dentist), over-the-counter drugs such as aspirin, laxatives, cough medicines and weight control pills. Also be sure to include any herbal remedies you may be taking, as these might interact with other medicines. If you regularly drink wine, beer or liquor, the doctor needs to know that, too.

**Interactions** between medicines may cause confusion, memory loss, insomnia, nervousness and hallucinations or can contribute to depression. If medicines are causing problems, the doctor can often alter dosage or substitute other drugs.

Medicines should be taken in the **prescribed dose** at the scheduled time, including weekends and holidays. If there are instructions to take a drug over a period of time, the prescription should be followed.

Medicine should not be stopped because you are “feeling better,” nor should you ever take more than has been prescribed, believing that “if so much is good, more will be better.”

To help keep track of the medicine schedule, you can use a commercial medicine dispenser. You might also consider asking a relative or close friend to give you a daily reminder call regarding your medicines. Ask your doctor for other suggestions and be sure to communicate any problems you experience.

If you take medicines for chronic illness, it's wise to carry some form of medical identification with you in case of an accident or other emergency. This makes any doctors who treat you aware of your current illness and prescriptions. A wallet-sized card designed for this purpose can usually be obtained from your local pharmacy. Drug stores and medical supply houses carry identification bracelets and necklaces that serve the same purpose.

## Pain Management

### Common Causes of Pain

Pain may be caused by many factors including weakness of the muscles that support the shoulder, inflammation, or improperly fitted braces, slings or special shoes. Often the source of pain can be traced to nerve damage, bedsores or an immobilized joint. Lying or sitting in one position for too long causes the body and joints to stiffen and ache.

Sometimes stroke damage to the brain can make even normal touch feel painful. You may experience one type of pain or several kinds. The key is to figure out what is causing the pain so that you can treat it.

### Types of Pain

Pain after stroke can be:

- Mild, moderate or severe
- Constant or on-and-off
- On part or all of the side of your body affected by the stroke
- Felt in your face, arm, leg or torso (trunk)
- Aching, burning, sharp, stabbing or itching.

## Ways to Manage Pain

Pain should always be reported to your doctor so that the cause can be determined and steps taken to ease it. Here are a few simple pain solutions you can try at home:

- Weakened or paralyzed arms or legs can be positioned or splinted to reduce discomfort.
- Heat packs or simple exercises may also help relieve pain.
- Pain in the shoulder resulting from the weight of a paralyzed arm can be alleviated by providing support for the arm on a lapboard or an elevating armrest, or with a pillow while lying in bed.

Ask your doctor about pain relievers compatible with your current drug program.

## Driving Again

Most people consider the ability to drive an essential activity of daily life. Driving provides us with an easy way to get around, independence and self-assurance. It is not an activity that anyone could give up easily.

Driving is a very complicated activity, requiring multiple levels of information processing and mobility. In many cases, it is possible to regain the ability to drive a car safely after a stroke. About 80 percent of stroke survivors who learn to drive again make it back onto the road safely and successfully. However, this does not apply to everyone. People with perceptual problems are much less likely to regain safe driving skills.

The key to finding out if you're ready and able to drive again is to participate in driver evaluation and specialized training. It is critical that you have an individualized, comprehensive driving evaluation by a health care practitioner with expertise in driver training. This person has knowledge and understanding of the physical and cognitive issues brought on by stroke, as well as the ability to tell the difference between temporary changes in driving ability and a permanent inability to drive.

### Driver's Evaluation

A driver's evaluation will usually include:

- Assessment of functional ability
- Reaction time testing
- Visual testing
- Perceptual testing
- In-car testing.

Training is the hands-on experience of teaching you to use the equipment on the road. Specially trained instructors should do this.

## **Driver's Training**

Driver's training may include:

- In-class instruction
- Classroom driving simulation
- Transfer training
- In-car, on-the-road training
- Wheelchair-loading instruction.

Regular driving schools are not specialized enough for people who have experienced stroke. Because instructors do not always know about the medical aspects of a stroke, they are often not prepared to teach stroke survivors, particularly those who have other hidden problems in addition to paralysis.

## **Physical Problems and Solutions for Driving**

Possible physical problems and solutions for driving can be:

- If you have use of only one hand, a spinner knob is appropriate. A spinner knob is attached to the steering wheel and allows you to steer the car easily with one hand. If you are unable to use the right arm and leg, a left gas pedal and spinner knob can be installed in your car.
- If you have use of only one leg, an automatic transmission will be easier than a standard transmission.
- If you have trouble reading or understanding what is read, training to read the road sign symbols rather than words can be helpful. However, this problem requires careful evaluation.
- If you have trouble judging distances or if you have a visual field cut (hemianopsia), you should not drive. You will only endanger yourself and others on the road.
- If you are unable to use the left extremities, a directional signal extender may be helpful.

## **Steps to Consider**

- If you are receiving rehabilitation services speak to your occupational therapist about driving. Occupational therapists are involved with providing driver evaluations, treatment, educational resources, and guidance to people who want to drive again.
- If you are concerned about the safety of someone who has finished with his/her formal rehabilitation but appears to be unsafe while driving, speak to that person's doctor and request a driver's evaluation by a qualified healthcare professional.
- Become familiar with the resources in the community such as public transportation services, volunteer ride programs, taxis, etc.

## Finding Driver Evaluations and Training

To locate a qualified driver education and training program in your area, there are several things you can do:

- Ask your doctor or the physical or occupational therapist at the hospital where you were treated.
- Get in touch with the state office of vocational rehabilitation or your local Department of Motor Vehicles office.
- Go to [www.aota.org/olderdriver](http://www.aota.org/olderdriver) for extensive information on driver rehabilitation. It also includes a searchable database of national driving rehabilitation programs.

## Easing Back Into Life

You don't have to stop doing the things you enjoyed before your stroke. Favorite leisure activities can be adapted for almost every situation. Involvement in pleasurable pursuits can help shift attention from disability to your abilities and can enhance your self-esteem and confidence. Leisure and recreation activities can also be used to improve perception and coordination and to strengthen muscles.

If you like to cook, then peel and slice vegetables, put frosting on a cake, roll out pastry or assemble salads from a stable position, whether in a wheelchair, seated or supported standing stance. If you like gardening you could tend to potted plants on the window sill and start new plants from cuttings.

If you enjoy needlework you can continue with your hobby using a special clamp and embroidery hoop to hold the fabric steady. Braille, large-type books, and "talking books" are available for the visually impaired.

Leisure activities can either be things done individually or as a group in more social situations. Social leisure activities can be found at community centers, senior centers, church groups, municipalities and other organizations offering recreation programs.

Involvement in recreation and leisure promotes health by providing a buffer for stress and creates a sense of balance. For instance, it can give you a break from a stressful situation. Similarly, pleasurable activities, such as watching an entertaining movie, can enhance your mood. Recreation may be central to feeling a part of your community and having a good quality of life. This is especially true of activities that help you feel involved in the neighborhood, such as eating in a restaurant, visiting a library or walking in a park.

Some leisure activities are skill building and can assist with transition to volunteer opportunities, continued education, employment or return to work. The social worker or case manager that worked with you should be able to suggest resources in your community to assist with this transition.

## Setting Goals

The work of recovering from a stroke begins in the hospital, but continues at home. To achieve as much progress as possible, both you and your caregiver need a plan to follow.

Many stroke survivors feel that they have lost control over their lives. Developing a plan of action can help restore the capacity to make decisions and execute choices. In the months following a stroke, the rate of recovery inevitably slows. Because the gains are no longer as large and dramatic, it is easy to become discouraged and overlook the progress you've made.

In everyday life, all of us rely on our work, family and community activities, as well as on our hobbies and interests to give us a sense of structure, purpose and self worth. After your stroke, you may find that physical changes require you to develop new interests and involvement so that you can continue to feel positively about life under changed conditions.

Developing these new interests, strengths and abilities will be made easier by setting long-range as well as short-term goals. Setting goals can help you deal with the discouragement that comes during the recovery period. A crucial part of setting goals is examining what you can reasonably accomplish. This must take into consideration what you would like to do given your current abilities. Goals may be for physical improvement or personal growth. Physical improvements might result in your ability to independently care for yourself. Personal goals might focus on relearning a skill such as driving or developing a more rewarding relationship with your children or grandchildren. For more information on how to set goals, see Chapter 2.

## Dealing with Emotional Changes

### The Grieving Process

After surviving a stroke, you and your family may feel like you're on an emotional roller coaster. This is normal. Shortly after the stroke, survivors and families begin to comprehend their personal losses and go through a grieving process, much like those who have experienced death or divorce.

Recognizing common stages of grief can help you better cope with the emotional changes that go along with it. Friends can gain insight into the grieving process as well, so they can better understand your thoughts, feelings and actions.

You may not go through every stage or each stage "in order." One stage doesn't abruptly stop so the next can begin. Rather, grieving is a gradual healing process that takes time and work. Each person moves at his or her own rate and form.

### Stage 1: Shock

Shock usually occurs during the initial phase of hospitalization or rehabilitation. A feeling of helplessness may accompany the shock. During this time the support of family and friends is extremely important.

## Stage 2: Denial

Not being able to believe that something terrible has happened after a crisis and great loss is normal. Denial offers you and your family a psychological way to escape the overwhelming aspects of the disability. The only thing that matters now is getting well. You may be much more motivated to work toward recovery than to learn to function with a disability. The focus should be on today – the “here and now.” Focus on essentials and the new realities you now must face.

## Stage 3: Reaction

This stage begins when you and your family start to realize the full impact of the disability. The most common psychological reactions are anger, bargaining (with God or others), depression and then eventual mourning of losses and changes. If these reactions interfere with rehabilitation or usual activities, it is important to be evaluated, and if necessary, treated by a mental health professional. (See Appendix B.)

## Stage 4: Mobilization

This is the stage when you may say, “OK, I want to live... show me how.” You might become more eager to learn during this stage. When family members reach this stage, they begin to show more interest in learning how to help you. This is often a good time to try short trips or outings.

## Stage 5: Acceptance

Acceptance is the final stage of the grieving process. This is when you and your family learn to live with the disability the stroke has caused. One stroke survivor said, “The way I look at it you have two choices. You may say to yourself, ‘Oh, to hell with it. I’ll just be a cripple for the rest of my life.’ Or you can say, ‘I’m going to do as much as I can, and when I reach my limit, then I’m going to see how much I can do within that limit.’” Acceptance isn’t a one-time thing, and it doesn’t mean a person won’t sometimes have strong feelings about any changes, losses or problems that remain. Rather, it means those feelings no longer take hold of us and keep us from feeling hopeful and grateful about being alive.

## Behavior Changes *(see details, Appendix B)*

Behavior changes can result from many things including depression, which can be due to either emotional reactions or physical injury to the brain (resulting from the stroke). It’s important for you and your family members to learn to tell the difference between these two causes.

## Depression

An often overlooked, yet extremely common condition after stroke is **depression**. It can be overwhelming, affecting the spirit and confidence of everyone involved. There is a certain amount of depression or despair that is a normal part of the grieving process.

Low self regard, harsh self criticism, the desire to hide or isolate yourself — these emotions can prevent you from engaging in activities that might actually help increase your self-esteem. This can be a dangerous cycle, as depression results in increasing isolation and despair. Depressed feelings are a normal part of grief, but when they seem to go on and on, it is necessary to seek professional help.

## **What to do About Depression**

Family can help by trying to stimulate your interest in other people, encourage leisure activities and, where it fits your values and lifestyle, provide opportunities to participate in spiritual activities. You might consider attending a stroke support group to help with depression. For a list of groups in your area, contact National Stroke Association at (800) STROKES or via the Web at [www.strokes.org](http://www.strokes.org). Some depression may be treated with a combination of individual or group therapy and/or antidepressant drugs.

**Counseling** is extremely helpful in treating depression. It can also be very helpful to deal with the painful and self-defeating emotions of depression by developing new perspectives and ways of experiencing yourself as strong, valuable and whole again. At first glance, it may seem backwards to try to change how you feel by changing how you act.

**But there are some simple ways to combat depression by changing your actions:**

- Be as physically active as possible.
- Set goals and structure time to provide a way of measuring real accomplishments.
- Schedule daily activities to provide structure and a sense of purpose.
- Enjoy social activities that provide stimulation and help enhance language recovery and self-esteem.

## **Changes in Thinking and Behavior Resulting from Stroke**

Certain changes you experience could be related to the brain damage caused by your stroke. Those changes may include:

### **Apathy**

Strokes can affect the parts of the brain that get us going, stimulate our interest in things, and drive us to want to be active and stay involved in the world. Post-stroke apathy is different from depression (although it may look very much like it), and may require an evaluation by a neuropsychologist to sort it out. Treatment may be different from that for depression.

### **Memory Loss**

You may need reminders or prompts to finish a sentence or certain tasks. Doing things in a more highly structured manner may help.

### **Perception/Concentration Problems**

These are common after stroke. Social situations can be especially difficult for people with these problems. Choose to attend small, quiet, slow-paced gatherings.

## **One-sided Neglect**

Damage to the right side of the brain can cause you to neglect literally half – usually the left side – of your world. You may ignore the left side of the face when washing, or may not eat food on the left side of the plate. If you move your head to the left, neglected objects usually become noticed.

## **Emotional Lability** *(also called pseudobulbar affect, or PBA)*

Sudden laughing or crying for no apparent reason and difficulty controlling emotional responses are common after stroke. Oddly, there may be no real mood changes involved, and the emotional display may end very quickly.

Medicine may be prescribed to help the problem, though it frequently lessens and may go away on its own over time.

## **Relationships and Intimacy**

Part of getting back into a normal routine involves resuming a healthy sex life. The need for love and to be loved, and to have the physical and mental release sex provides, is important. However, having sex after stroke can present problems or concerns for you and your partner. Consultation with a psychologist may be helpful if this is an area of difficulty for you after your stroke.

Stroke can change your body and how you feel. Both can affect sexuality. Stroke survivors often report a decrease in sexual desire and how often they have sexual relations. Women report a strong decrease in vaginal lubrication and the ability to have an orgasm. Men often have weak or failed erections and ejaculations.

## **Factors Affecting Sexuality**

### **Clinical Depression**

Depression can affect sexual function and result in a lack of desire or impotence. If you or your partner is experiencing depression, discuss it with your doctor. Medicines and/or counseling can be effective.

### **Fear of Further Damage**

Most stroke survivors can resume a happy and healthy sexual life. However, you should check with your doctor before resuming sexual activity.

### **Personality Changes and Impotence**

Personality changes can impact a person's desire and ability to engage in sexual activity. After a stroke, some worry that sex is now wrong or off-limits. Fears of hurting a partner during sex are common, but can hinder sexual intimacy. Reassurance, warmth and time can often help with these concerns. Resuming sexual activity can help strengthen the relationship and provide pleasure and enhanced self-esteem to both partners. If personality changes or a psychological issue continues to stand in the way of your sexual relationship, discuss this with a psychologist or mental healthcare professional.

# Common Physical Obstacles

## Paralysis and Sensory Loss

If there is sensory loss, it is helpful to be aware of this. In the case of paralysis, experimenting with different positions for sexual intercourse is advisable.

## Difficulty with Speech

Communication is not necessarily dependent on speech. Sexuality is a special form of communication. Everyone is receptive to touch, and seduction can be accomplished without words.

## Impotence Caused by Medicines

In the male stroke survivor, if there is no morning erection, impotence may be a result of medicines. Some blood pressure or heart drugs, diuretics, anti-depressants, tranquilizers, sedatives, and alcohol are known to cause decreased sex drive. If this has happened, it is important to let your doctor know, as medicines may be altered to resolve the problem.

## External Collecting Device or Internal Foley Catheter

A catheter does not need to be a barrier to sexual enjoyment. In the case of the male, simply remove the external collection device. If you have a catheter, you may remove it, clamp it off, or keep it in. If you keep the catheter in, disconnect it from the leg bag, fold it back along the penis, and apply a condom. In the case of the female, the catheter can stay in place. Disconnect it from the leg bag and clamp it, or remove and reinsert the catheter later.

If impotence or sexual difficulties do not resolve, there are many treatments for sexual dysfunction. Such problems are not always permanent. There are doctors and psychologists who specialize in this area. Your psychologist, doctor or the social worker at a rehabilitation hospital should be able to refer you.

It's important to remember that sexuality is more than the act of sexual intercourse. It involves the whole process of relating to another person. Tenderness, the desire to give and receive caresses, holding, cuddling, touching, intimacy, reciprocal concerns, tolerance and love — all are a part of sexual communication that goes beyond words. After the separations and loss caused by a stroke, a couple can reclaim a closeness that is unique to them.

## What Can Help

- Ask your doctor about changes to expect when having sex and for advice on how to deal with them.
- Be sure to discuss when it is safe to have sex again.
- Focus on being loving, gentle and caring with each other.
- Speak honestly with your partner about your sexual changes. They will be glad you did, and together, you can often work out the best solution.
- Get more information on sexuality from National Stroke Association.
- Join a stroke support group. Other survivors will understand, validate your issues and offer encouragement and ideas.

## Helpful Information for Caregivers

This section, intended to focus on some specific issues you might encounter as a primary caregiver, is a supplement to the previous section written specifically for the stroke survivor.

### Dealing with New Responsibilities at Home

Being at home, on your own, can be a trying time for you and your loved one. Often, moments of friction can be avoided by simplifying activities. It is important to take things slowly and realize the road to recovery is a lifelong journey. When he or she doesn't want to take part in an activity, be sensitive to the needs and wishes of your loved one and don't insist. Many stroke survivors feel better and more energetic during one part of the day. Activities can be scheduled to take advantage of these "up" periods. A smile or caress can often change the mood. By giving the stroke survivor choices, you allow them to still feel "in control." An example would be: "Do you want to do your exercises at two o'clock or three o'clock?" instead of "You have to do your exercises now."

### Changes in Your Loved One

You will notice several changes in your loved one as you both move through the recovery process. The changes may be physical, cognitive or emotional, or may be a combination of these. Following are some brief descriptions of the issues that commonly accompany stroke.

#### **Communication Difficulties**

Stroke can cause a variety of communication problems. Some stroke survivors are unable to pronounce speech sounds properly because of weakness or problems controlling their face and mouth muscles. If the stroke damaged the language center in the brain, your loved one may have trouble expressing him or herself or understanding others, a condition known as aphasia. (See details Appendix A). He or she may not make sense when talking, have trouble finding the right words, or barely be able to speak at all. He or she may also have trouble reading or writing.

Communication problems are among the most frightening after-effects of stroke for both the survivor and the family. Assistance of a speech and language therapist can help you and your loved one learn to communicate more effectively to reduce frustration.

Finally, the behavior of the family should be considered. Strive to be compassionate, patient, positive, tolerant and respectful. This may not be easy. You may need professional help to learn how to manage the difficult situations.

#### **Loss of Bowel or Bladder Control**

Loss of bladder and bowel control is a common condition for stroke survivors. Reassure your loved one and encourage him or her not to be embarrassed, and to talk to you and your family doctor about it.

## **You can help make this condition easier to manage by following these simple suggestions:**

- Watch for signs indicating a need for toileting.
- Facial expressions, sudden agitation or an aimless pulling at clothes will tell you that the individual needs help.
- A regular toileting schedule may help create predictability and control for you both.
- Persistent difficulties with bowel and bladder function should be discussed with a doctor.

## **Pain Recognition**

Some people may not be able to feel pain accurately in parts of the body where sensation has been lost. They might not be aware of a cut or a broken bone, or if a bedsore has begun to form or a heat application is too hot. Those who are unable to speak cannot always tell you that they are in pain. Moreover, a confused person may not understand that they are suffering pain and will not alert you.

It is important for you to pay attention and react to swelling, bleeding, or any other sign that indicates that something is wrong. Restlessness, moaning or anguished facial expressions may be signals of pain.

## **Effects of Pain**

Pain can have a debilitating effect. Someone in pain may lack the motivation to make the extra physical effort required to get out of a wheelchair or bed. For example, unrelieved pain may interfere with the use of a limb or cause resistance to the exercise program that is intended to improve mobility. Immobility can cause joints to “freeze,” and subsequent attempts to move will be even more painful. The disability may advance, making the stroke survivor more and more dependent. It's important that stroke survivors not let pain keep them from being active; encourage some movement or exercise daily.

## **Nutrition**

Proper nutrition is an important part of stroke recovery and stroke prevention. You and your family will have to work together to make sure your loved one has the willingness and the necessary tools to maintain a healthy diet. Some people may have little appetite. Ill-fitting dentures or a reduced sense of taste or smell can make food unappealing. Those who live alone might even skip meals because of the effort involved in buying groceries and preparing food. Soft foods and foods with stronger flavors may tempt those who are not eating enough. Nutrition programs, such as Meals on Wheels or hot lunches offered through community centers, have been established to serve the elderly and the chronically ill. If you are worried about the eating habits of a stroke survivor who lives apart from you, seek help from these sources or from a dietician or nutritionist.

## **Skin Care**

For those who are in stationary positions most of the time, decubitus ulcers (bedsores) can be a serious problem. The sores usually appear on the elbows, buttocks, heels or shoulder blades and can occur within days if not properly monitored. Check the skin daily for any changes. Reddened spots are the first warning signs of pressure areas.

To prevent bedsores, make sure your loved one does not sit or lie in the same position for long periods of time. The bedfast person should be turned frequently to lie first on one side and then the other. Pillows should be used to support the weak arm or leg. Pillows can be put under the knees to prop them so that the soles of the feet rest flat on the bed. A therapist can instruct you in more positioning techniques. Try to keep the bedding smooth and wrinkle-free. Special mattresses or cushions reduce pressure and help prevent bedsores.

A person sitting in a wheelchair can relieve pressure on the skin of the buttocks by getting out of the chair periodically or by leaning forward or to one side. A physical or occupational therapist can teach this technique. Rough, abrasive clothing should be avoided. An air cushion might also be helpful in relieving pressure and increasing comfort.

A mild cream can be applied to points of roughness, redness or inflammation. Take special care when the stroke survivor has memory or language problems. He or she may have lost sensation and not be able to feel the pain that signals the beginning of bedsores, so the caregiver needs to be on the alert. Notify the doctor if an irritated spot does not clear up or seems to be spreading, or if any red or white areas do not fade in 15 to 20 minutes after pressure is relieved. A history of bedsores or being at risk for skin breakdown may qualify Medicare recipients for a pressure relief mattress and/or cushion.

## **Behavior Changes Resulting from Stroke** *(see details, Appendix B)*

You may notice some behavior changes in your loved one after a stroke. Those changes can result from depression or from the brain damage that occurred during the stroke. Both conditions can be trying for caregivers and family. You're encouraged to seek professional help when necessary.

### **Depression**

Depression can surface in many ways. A depressed person may refuse or neglect to take medicine, may not be motivated to perform exercises which will improve mobility, may not eat or sleep or may be irritable with others. Apathy is a related condition that can show itself in decreased or flattened emotions and motivation.

Depression may dampen the family's enthusiasm for helping with recovery or drive away others who want to help. This creates a vicious cycle by depriving the stroke survivor of social contacts, which could help dispel the depression. It is sometimes the case that as a person improves from stroke, depression may lift by itself.

However, sometimes depression can become serious enough to impair functioning. This can occur in the emotional life of the survivor, caregiver or family member and can occur regardless of the living situation of the survivor.

It is important to be able to identify the warning signs of depression so that something may be done. Depressed people frequently express feelings of hopelessness, helplessness and a lack of pleasure in usually enjoyed activities. They may feel and act generally slowed down, both in their body movements and in their speech patterns. They may find themselves thinking distressing thoughts such as “I am worthless” or even suicidal thoughts. They may blame themselves unreasonably for anything that goes wrong.

Depending on the location of the stroke in the brain, the damage can cause a variety of cognitive impairments.

### **One-sided Neglect**

One-sided neglect occurs when the stroke survivor is unable to pay attention to one side, so that they are missing literally half of the world around them.

Simple methods to help them deal with this condition include:

- Putting clothes on the recognized side of the dresser drawer and closet
- Placing a sign on the mirror with a reminder to turn the head while shaving or putting on makeup
- Giving a gentle reminder when you notice an instance of neglect.

Some changes in behavior, such as memory loss, can be so subtle you may not recognize them at first. The stroke survivor may be anxious and cautious, needing a reminder to finish a sentence or know what to do next. Some people have difficulty with numbers and calculating. They can no longer handle money or balance a checkbook. Family and friends may need to learn to keep things in the same place, do things in the same sequence and tell the person in advance what is going to happen and possibly take over some responsibilities. Memory loss can be hard to accept and frustrating for both the stroke survivor and for the family, and can be partial, severe, or affect only certain kinds of information and material (eg, visual or verbal).

### **Poor Judgment and Insight or Self-Awareness**

Some survivors display poor judgment and insight or self-awareness. These individuals should not drive a car, operate any machinery (including small appliances) and should be accompanied when walking outdoors or near stairways. They also should be guided when making important decisions. Impulsivity can appear, as well as other significant issues and should be discussed with a neuropsychologist.

## **The Confused, Cautious Survivor**

The confused, cautious survivor might be helped by an ordered environment where fewer choices have to be made. Those experiencing issues with poor judgment must be guided when making important decisions. At times he or she may be apathetic, which can be made worse if the environment is too quiet and simple. If you notice problems in your loved one's behavior, try to identify the cause and work to make it easier for both of you (see details in Appendix B).

## **Concentration**

Problems with concentration are common after stroke. Social situations can be especially difficult for people with these problems. As a caregiver, you can help by choosing or arranging small, quiet, slow-paced gatherings. This type of setting allows slower expression of thoughts and a limited number of people with whom to interact. A slower pace allows time to sort out what's being said by whom and to think through and make a good response. If your loved one now has trouble recognizing acquaintances or remembering names of long-time friends or family members, be ready to offer a prompt of the unknown name such as, "Bob was just telling me about his new car."

Some stroke survivors appear to be not as responsive because their sensory functions (sight, hearing, smell, touch or taste) have been impaired. Provide stimulation with pleasant background music from the radio or stereo, flowers or plants, bright colors, books and magazines that feature pictures, new clothes or foods with stronger flavors and colors.

## **The Grieving Process**

The five stages of the grieving process are detailed on pages 15–16. The following are details of the last three stages that may affect you and your family as caregivers. Stages one and two – shock and denial – will affect each family differently. It is important for you to remain supportive, offering positive feedback and encouragement on the road to recovery. If you should experience any of the following feelings, try not to feel guilty. They are essential parts of the grieving process.

### **Reaction**

A funeral formally recognizes a death and encourages support for a bereaved family. But there is no socially acceptable way to grieve for the loss of a person who hasn't died. Yet in many ways you may be facing a kind of death—the death of your loved one's former self as you both may have known and experienced it. A stroke changes a person. It can be more troublesome than death because there is a living reminder of the person who used to be.

Another normal reaction of the survivor and the family is to feel that death would be preferable to survival with a disability. Only after grieving the loss of the person they knew are families able to learn who that person has become and begin to develop a comfortable relationship. This is often most difficult for a spouse. It is also difficult for the stroke survivor who must begin to develop and know a new self. It is important that the person feels free and able to express feelings openly and have time to grieve the loss of the old self.

Stroke survivors and their families are sometimes surprised by unexpected feelings of anger. The survivor may feel that nobody can do anything right. Husbands or wives may feel resentful toward their mates for having had a stroke. It is important to realize that frustration and anger go along with the experience of loss. The only way to get beyond these feelings of anger, guilt, or sadness is to experience them. Gradually, healing takes place.

## **Mobilization**

When the person begins to experience the frustrations and anxieties associated with returning to the community environment, he or she may fluctuate between the mobilization stage and the reaction stage. This is a transition; a time when people who have not experienced the process may be insensitive, unaware of the level of progress the survivor and family have experienced.

## **Acceptance**

It is impossible to say how long it will take any given individual or family to enter the acceptance stage. Loss hits each person differently. Grief is a personal experience. Compromise and patience will help a family and a survivor get through these very tough times.

# Relationships and Intimacy

## **Sexuality**

The closeness that a couple shares before a stroke will affect how their relationship evolves after the stroke. It is important to remember that sexual satisfaction, both giving and receiving, can be accomplished in many ways.

You can refer to pages 18-19 for details about the emotional and physical issues that may arise when you and your partner resume sexual relations. Whatever is comfortable and acceptable between you and your partner is normal sexual behavior. Be assured that it takes time, but with time, many couples discover new ways of caring for and relating to each other.

It's normal for married couples to experience a sense of profound loss when one partner suffers a stroke. For many people, marriage is the central and most enduring relationship of their lives. Married couples share a common history of joys and sorrows as well as hopes and dreams for the future. They depend on one another for companionship, understanding, support, and sexual fulfillment.

They are accustomed to sharing the responsibilities of the household as well as the enjoyment of social activities.

For many spouses, when the partner suffers a stroke, it is as though part of the self is lost. You may face prolonged separation, often for the first time in years, during the hospitalization and rehabilitation stages. Your spouse may not be able to offer the same level of participation in the relationship as before. You might have to shoulder all the responsibilities previously shared. You may feel the whole situation is a terrible physical and emotional burden that you are not prepared to handle.

## Family Relations

Often a parent's stroke comes at a time when children are carrying significant work, family and community responsibilities. These adult children become caught between the demands of their own families and the needs of their parents for care. The role reversal of becoming a parent to one's own parent is a difficult one for many people to accept, partly because it involves the loss of the parent in a very real sense. Once again, the grieving process must occur in order for coping to begin.

## Siblings

Sometimes the family member responsible for care of the stroke survivor is a brother or sister. Once again, the results of the stroke can change relationships. Frequently brothers and sisters of the survivor are just at the stage in life when they are planning for retirement, free for the first time from family responsibilities. Sometimes the problems and competitive feelings of childhood can resurface during stress. Adult siblings may find themselves playing out the same old power struggles with each other. Resolving these kinds of difficulties is possible. When people are under stress and suffering from loss, even the most solid relationships can be affected.

## Caring for the Caregiver

You may become so preoccupied with caring for your loved one that you forget to take care of your own needs. Your loving, sensitive spouse may have become depressed and demanding after suffering a stroke. It's important to find ways to cope with the changes and help with the recovery process.

As a caregiver, try to encourage as much independence as possible. Allow your loved one to make decisions. Support his or her participation in leisure activities, and then try to find some fun activities for yourself. If you can give yourself a break from caregiving, you'll be helping both yourself and your loved one. Don't be shy about enlisting the occasional help of other relatives, friends, neighbors or community volunteers who may be able to give you a break for a few hours each week. A paid helper may be available to offer you time away from your hard work as a caregiver.

Not every stroke survivor requires around the clock care. If you're not sure whether it's safe to leave your loved one alone, ask your loved one's doctor or therapist. Strive to create a rhythm to daily life – a rhythm that respects the needs of everyone in your life – including yourself.

**For more information, contact the National Family Caregivers Association at  
(800) 896-3650.**

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## A P P E N D I X

# A

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## Aphasia

Simply defined, aphasia is the loss of ability to communicate normally resulting from damage to the left side of the brain, the center of communication. It may affect a person's ability to express himself through spoken language and to understand what others say, as well as the ability to read, write or deal with numbers. Intelligence is not lowered, although the inability to communicate may leave the impression that the person with aphasia is less intelligent than he or she actually is.

No two people with aphasia are affected in exactly the same way. The extent and range of deficits depend on the location and severity of the brain injury.

### Types of Communication Problems Resulting from Aphasia

#### **Speaking**

Problems with spoken expression vary greatly among people with aphasia. Some people are able to speak at a normal rate. Others speak slowly, with pauses and great difficulty. Some can produce only a few words or phrases, but may be capable of uttering obscenities when angry. Less commonly, a stroke survivor may be unable to speak at all. Most people with aphasia need extra time to express their ideas and respond to questions. The language of people with aphasia often contains errors. For example, they may say "dog" instead of horse or "may" instead of "hey." Some people speak at a normal rate but their language makes little or no sense. Some use nonsense words. Some are aware of their errors while others are not.

People with "word-finding" problems may frequently pause during conversation, use nonspecific words (like "thing" or "it") and make word errors. They may struggle and become frustrated while trying to find the right word. Attempting to get their message across in other ways, such as describing the object or using gestures, can often help them communicate more effectively.

## Understanding Others' Speech

Many people with aphasia have trouble understanding others. Comprehension problems may be mild, occurring only when others use lengthy and complex sentences. Still, some will have trouble understanding simple sentences or even single words. Using simple language, short sentences and familiar words, and repeating when necessary, often helps aphasics understand better. Gestures and visual information (such as objects or demonstration) can also be helpful.

## Reading and Writing

People with aphasia often have trouble reading aloud or understanding what they are reading. They also may have difficulty writing and spelling. Their problems with reading and writing are often similar to their difficulties with speaking and understanding speech.

## Different Types of Aphasia

There are several types of aphasia, depending on what parts of the brain are impacted by the stroke. In general, aphasia may be classified as “fluent” or “nonfluent.” A speech-language pathologist or a neurologist can help determine the type of aphasia.

### Nonfluent Aphasia

Speech is produced slowly and with difficulty. It may consist of only single words or short sentences with missing words. In the attempt to communicate, the person with aphasia often uses hand and face gestures. Common types of nonfluent aphasias include global aphasia and Broca's aphasia.

#### Global Aphasia

This is the most severe form of aphasia. As the term indicates, there is great difficulty with all language functions – comprehension or understanding, reading, talking, or even repeating what is heard. Sometimes, the only thing that the person with aphasia can say is the same sounds or word over and over again.

#### Broca's aphasia (Expressive Aphasia)

For people with this type of aphasia, understanding is better than their ability to express themselves. They often understand most everyday conversation. Language output is slow and hesitant, with frequent pauses. Sometimes, the person may not be able to produce any words. Other times, he or she can say words or put a few words together to make partial sentences.

### Fluent Aphasia

Though speech may be normal or rapid, incorrect words or sounds are substituted. The person may say “dog” when he or she means “horse,” or “may” instead of “hey.” Sometimes means the person with aphasia may not realize these errors even after the words are spoken. Common types of fluent aphasias include Wernicke's aphasia, anomic aphasia and conduction aphasia.

### **Wernicke's Aphasia (Receptive Aphasia)**

People with this type of aphasia hear sounds and words but do not understand what they mean. Their speech is fluent with frequent sound and word substitutions so that it does not always make sense. People with Wernicke's aphasia are not aware of this and do not monitor their own speech.

### **Anomic Aphasia**

Understanding is good. The major difficulty is in naming even common objects or places. Because of the difficulty finding words, they may frequently pause during conversation, use nonspecific words (like "thing" or "it") and make word errors.

### **Conduction Aphasia**

Understanding is quite good. Speech remains somewhat normal but trouble occurs in repeating anything said by another person. Also, there is difficulty in finding the right words to express ideas.

## Dealing With Aphasia

The thinking skills of those with aphasia are generally unimpaired; therefore it is essential to treat the person as an intelligent adult. The brain is like a muscle; unless it is exercised, it eventually loses its abilities. With this in mind, it cannot be overemphasized how important stimulation from the outside world can be. Although the tendency of many persons with aphasia is to avoid social situations, they need to take an active role in their own recovery, explaining to others that they have a language problem due to stroke. Most listeners will be patient and even generous in helping the person re-establish his or her place in society.

Stroke-related aphasia typically improves in the first weeks, with **improvements in speech and language** continuing for months and even years. Some stroke survivors become increasingly able to benefit from therapy once they have had time to adjust to the major life changes brought about by the stroke. If involvement of health care professionals is needed, an individualized team approach is preferable. Since emotional responses such as anger, distress, depression, anxiety, low self-esteem and dependency are common, counseling is sometimes advised.

## For More Information

### **National Aphasia Association**

350 7th Avenue, Suite 902  
New York, NY 10001  
(800) 922-4622

### **American Speech-Language, Hearing Association (ASHA)**

2200 Research Blvd. Rockville,  
MD 20850-3289  
(800) 638-8255

### **National Academy of**

### **Neuropsychology (NAN)**

2121 South Oneida Street, Ste 550  
Denver, CO 80224-2594  
(303) 691-3694

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## A P P E N D I X

# B

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### Changes in Behavior, Emotions and Thinking Following Stroke

A stroke can cause many bewildering changes in a person's emotions and behavior. Suddenly, he or she can seem like a completely different person than the one you knew before the stroke. In a way, this is true. Stroke survivors' brains have been injured and the behaviors and emotions they may display can be a reflection of that injury. Understanding and dealing with such changes are just as important as the physical issues that are dealt with in the rehabilitation process.

#### Depression

As the survivor and family members come to grips with the stroke and its resulting disabilities, depression can be a natural reaction. However, depression can sometimes become serious enough to impair functioning and inhibit the survivor from moving on in the recovery process. Identify some warning signs of depression so that steps can be taken to alleviate it: depressed people frequently express feelings of worthlessness and loss of interest in once pleasurable activities, exhibit changes in appetite and weight, and may attempt or talk about suicide. The best way to deal with depression is to seek help from a social worker, psychologist or other trained mental health professional.

#### Anger

Feelings of anger and resentment are also common for survivors following their stroke. Such feelings may be expressed verbally or physically, or even by withdrawing from others. Some stroke survivors may express their anger more openly by being overly critical of other people. In such cases the individual may actually not be angry with others, so much as because the stroke has disabled them in some way.

When a survivor becomes upset, he or she may take anger out on others. When this happens, the caregivers should keep their own emotions under good control. It may be necessary to leave the survivor's presence for a while until his or her control is regained. In a firm but understanding manner, you can also make a positive supportive comment such as, "I know this must make you really angry. Let's see if we can work through it together." It is important for caregivers to devise a plan to help them react and deal more effectively with the anger that may result from stroke.

## Emotional Lability *(also called pseudobulbar affect, or PBA)*

Emotional lability is a physical brain condition that causes spontaneous, uncontrolled, emotional reactions. For example, the stroke survivor may burst into tears or laughter for no apparent reason. The frequency of emotional lability is greatest in the first few months after the stroke and most often slowly fades away over time.

The best approach for dealing with emotional lability is to accept the behavior in a matter-of-fact manner. If the survivor is known to be labile, caregivers should continue the conversation or activity and basically ignore the display of emotion. If the stroke survivor apologizes, the caregiver should remind the survivor that the symptom is due to the stroke to diminish any embarrassment and continue the current activity or discussion.

## Right-Brain Injury

Behavioral changes can vary depending on the severity of the stroke and where in the brain it takes place. Since the right hemisphere in most people typically heavily influences emotions, nonverbal communication and spatial orientation (sense of body position), damage to this side of the brain may cause an array of emotional and behavioral problems. Among these problems can be an impulsive style that can be very dangerous to the individual. Right-brain stroke survivors may be unaware of their impairment and be certain that they can perform the same tasks as before the stroke. They may also experience emotional lability, short attention span, short-term memory loss and poor judgment.

The spatial-perceptual difficulties of stroke survivors with right-brain injuries are often overlooked. When these individuals have problems performing simple activities, they may be seen as uncooperative, overly dependent, confused or unmotivated. Once the limitations of right-brain injury are realized, steps can be taken to better deal with this problem:

- Keep the environment safe. Potentially dangerous items such as sharp objects, cleaning agents and poisons may need to be kept out of reach of the right-brain survivor.
- Monitor the person's activities. If left unattended, the stroke survivor may become confused or injured.
- Be sensitive to the visual and sensory problems of stroke survivors. For example, if people cannot perceive things on their left side, place items they may need on their right.
- Encourage them to acknowledge the affected half of their body as part of them.
- Give frequent reminders of the affected side by touching it, rubbing it, or asking the survivor to massage it.
- Encourage them to scan (turn their heads from side to side) in order to see what they usually ignore on the affected side.

- Minimize distractions and clutter in the stroke survivor’s environment. Too much auditory and visual stimulation can add to his or her confusion and may be dangerous. A quiet, calm environment can help the individual focus on the task at hand.
- Prevent injuries caused by the individual’s inability to determine depth and distance by clearly marking pointed edges on furniture, doorways and other items.

Although stroke survivors with right-brain injuries do not have aphasia (see Appendix A), they frequently have other kinds of speech and communication problems. Many have difficulty pronouncing speech sounds properly due to weakness or problems controlling their mouth and face muscles. They may also have trouble interacting normally as a result of problems with their “thinking” skills. A speech and language pathologist can help the right-brain stroke survivor and family members address these kinds of communication problems.

## Left-Brain Injury

Along with some right-side paralysis and communication problems, left-brain survivors may experience personality changes. In contrast to those who suffer right-brain injuries, survivors with left-brain damage tend to behave in a cautious, compulsive or disorganized way and are easily frustrated. These behaviors and emotional responses may be related to speech and language problems, in that the survivor is slow to respond to questions or to take action.

Mood and behavior changes associated with left-brain injury can be frustrating to the survivor and caregiver alike. To assist the survivor in his or her attempts to perform as normally as possible:

- Develop strategies that will allow the survivor to function at a comfortable pace. Care should be given to organization of daily routines and schedules.
- Recognize and deal with fatigue, a major barrier to recovery. Encouraging the person to ask for help or to pass on duties to someone else will allow wiggle room in returning to his or her life and ease guilt about frustrating limitations.
- Be patient. Give survivors time to respond to your questions or comments. Don’t rush them or respond for them.
- Give immediate and frequent feedback – verbally, with gestures or both.
- Keep questions and comments simple. Questions should be stated so that the survivor can give a yes-or-no answer.
- Speak in a normal voice unless you know the individual has a hearing problem.

For those around individuals with aphasia on a daily basis, developing strategies that allow them to function at a comfortable pace will help them to accept themselves. This initially involves constant reflection and planning. Care should be given to organization of daily routines and schedules, such as handling outside errands during quieter rather than “peak” hours, which are often full of noise and distraction.

## *Join the Heritage Society*

**Heritage Society members are an exclusive group of people who, through a gift in their wills, trusts, or estate plans, make it possible for National Stroke Association to continue to reduce the incidence and impact of stroke.**

Receive a certificate of appreciation.  
Be publicly recognized for your gift,  
unless you prefer to give anonymously.

### *How do I join?*

Arrange for a bequest or other planned gift.  
Notify us of your Heritage Society eligibility and become a member.  
Leave a lasting legacy that will educate and empower the country in the  
fight against the devastating effects of stroke.

**Contact:**  
The Development Office at  
1-800-STROKES  
(1-800-787-6537)  
[www.stroke.org](http://www.stroke.org)



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# CHAPTER TWO

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## Self-Advocacy

After a stroke, there is rarely any “going back.” While the road to recovery almost always takes more time and effort than anticipated, there are things you can do to make the journey easier to travel. This chapter is designed as a road map for your stroke recovery journey.

Foremost, it is essential to recognize that while you have suffered a stroke, you are not a victim – you are a survivor. Taking a positive approach to your recovery is the single most important step you can take. You may hear from different people including family or members of your own healthcare team to not get your hopes up, or to only expect a certain amount of progress. While a significant portion of recovery is done within the first 6 months to a year after a stroke, research shows that progress can be made years after a stroke. Remember – recovery is a lifelong journey. Stay positive. Stay the course.

### What is Advocacy vs. Self-Advocacy?

The definition of advocacy is “active support,” especially the act of pleading or arguing for something. In this case it is for yourself – your well-being. To be a self-advocate is to be a supporter, believer, encourager, and activist of and for yourself. It is standing up for your needs in a clear, specific and firm way. It is not being afraid to ask for help when you need it.

### Why is Self-Advocacy Important?

Suffering a stroke is often an overwhelming experience that takes from you a sense of control – over your physical and mental health and well-being. Practicing self-advocacy allows you to empower yourself – to personally take responsibility in making the most of your recovery from stroke. You have a say in what you want and need, and can directly impact your own quality of life.

## Self-Advocacy Steps

### **Prevent another stroke**

Take the steps necessary as prescribed by your doctor to prevent another stroke. This includes things such as monitoring your blood pressure, finding out your cholesterol numbers and working to control them, quitting smoking, etc. (see next chapter).

## Educate yourself

One of the most important things you can do is educate yourself. Gather information to help you understand what has happened to you, and what to do next. Learn about stroke, your disabilities, and what treatment options you have. Find out what resources are available to you. You can find this information by:

- Reading books, pamphlets and fact sheets
- Watching informational videos, CD-ROMs or DVDs
- Browsing the Web or having a friend or family member do it for you
- Attending a workshop, seminar or talk
- Talking to a social worker, case manager or community resource specialist
- Contacting National Stroke Association at [www.stroke.org](http://www.stroke.org) or 1 - (800) STROKES

## Ask questions

Seek out and listen to those individuals who are familiar with or specialize in the area of stroke and rehabilitation. This not only includes members of your healthcare team or other stroke experts in the community, but other stroke survivors as well. If you are uncertain or not satisfied with what they are telling you, seek a second opinion.

## Determining Wants and Needs

There are many considerations which should go into planning for your care after hospitalization. Your needs and the resources available to meet these needs are key. Many families have found it helpful to think about several alternative plans. This way it is possible to respond effectively to whatever situation confronts you. Your social worker and therapists are the best sources of accurate, reliable information on options that fit your values and resources. It is important to try to address the following questions in an open manner. Be sure to take a realistic inventory of your strengths and weaknesses.

### Physical

- Can you transfer from a wheelchair to a bed independently?
- Can you move independently whether walking or in a wheelchair?
- Can you control bowel and bladder functions during the day and at night?
- Can you carry out basic independent activities of daily living (dressing, personal hygiene, etc.)?
- What communication limitations are there? Can you call for help?
- To what degree are visual and perceptual problems present?
- Do you have special care needs such as a catheter, diabetes, etc.?

## **Emotional**

- Do you or others think that you behave appropriately?
- Have you experienced emotional difficulties in the past or present, such as severe depression? If so, what kind of special care is needed?
- Do you thrive on social activity or is there a strong need for privacy?
- How do you feel about not living at home?

## **Anticipated Improvement**

- What is your potential for improvement in each of these areas?
- What follow-up services, such as outpatient or homebound occupational therapy, physical therapy, speech therapy, psychotherapy, etc. are required to achieve the goals?

## **Financial**

- What are your financial resources, including whether or not insurance will cover needed services?
- Are you eligible for assistance through government entitlement programs, such as Medicare, Medicaid, Social Security Disability, etc.?

## **Caregiver Needs and Limitations**

- What other responsibilities and time commitments does the potential caregiver have? (Include family, work, community, and recreational commitments.)
- Is the caregiver emotionally and physically healthy?
- What are the family financial resources?
- What is the physical layout of the place of residence (home)?
- How does the family feel about caring for you?
- What were relationships like before the stroke?
- How has the stroke affected those relationships?
- How does the potential caregiver feel about the changes in you?
- Is time spent together rewarding for all involved?
- Is guilt or external pressure involved in their decision to help care for you?

These are tough questions that you and potential caregivers must ask and answer for the sake of everyone involved. As difficult as they may be, if these questions are answered either before discharge from the hospital, or prior to a specific type of care being needed, everyone will face the new situation having made a conscious choice. Remember, whatever decisions you make should be based on your own individual situation, not on what some other family did or what you think is expected of you.

# Goal Setting

## Developing Goals

Developing goals or a plan of action can help you make decisions and choices. In the months following a stroke, the rate of recovery predictably slows. Don't become discouraged. Most hospital rehabilitation programs take place in a highly structured environment where you follow a daily schedule of therapies designed to meet rehabilitation goals. There is a great deal of opportunity to be around supportive and understanding people. Isolation and inactivity are rarely a problem.

Upon returning home, you can feel overwhelmed by all the spare time. In everyday life, all of us rely on our work, family and community activities, as well as on our hobbies and interests to give us a sense of purpose and self worth. After your stroke, you may find that physical changes require you to develop new interests and involvements so that you can continue to feel good about life under changed conditions.

Developing these new interests, strengths and abilities will be made easier by setting long-range as well as short-term goals. A good way to achieve these goals is by planned daily activities.

Setting goals can help you deal with the times of discouragement that come during the recovery period. A crucial part of setting goals is examining what you can reasonably accomplish. You must take into consideration what you would like to do given your current abilities and disabilities. Goals need to be realistic. Goals also need to be flexible. It is also helpful to set time guidelines for completion of your goals. There are four main areas to think about:

- Physical rehabilitation
- Recreational/social
- Family/community
- Personal

In each area, there will be certain activities necessary to reach the goal. Breaking each step into smaller parts can help both yourself and your family see that real progress is taking place. Some of your goals could fall into several categories. Place your goals in the category that seems most sensible to you.

## Achieving Goals

All goals should be "measurable," meaning you must be able to tell when you have accomplished the goal or how close you have come by measuring tangible results. "Doing a better job at my leg exercises" is not specific enough to be measurable. "Walking around the block with my cane" is measurable, because you can clearly tell when you have accomplished a trip around the block.

## Setting Long-Term Goals

To begin goal setting, write down your long-range goals in each of the areas described earlier – physical rehabilitation, recreational/social, family/community and personal. Don't rush the process. Take your time during quiet moments to think carefully; allow goal planning to be a personal process that helps you learn more about yourself.

## Setting Short-Term Goals

Short-term goals are measurable goals that are necessary in order to accomplish the long-term goals, but may or may not be activities in and of themselves. For example, if your long-term goal is "joining a stroke club," your short-term goal might be "locate available stroke clubs in my area." If your long-term goal is "taking a weekend trip," your short-term goal might be "ride in the car for an hour."

## Problem Solving

When you encounter unusual periods of stress in your life, problem-solving methods which worked in the past can begin to break down. Sometimes stress makes even small problems seem overwhelming. It is impossible to anticipate all the problems that might be encountered by you or your family upon leaving the hospital or rehab program. However, there are techniques which, when applied to any problem, can contribute to finding a solution. One thing to keep in mind is that problems need to be solved one at a time.

- Acknowledge the problem.
- Identify the problem/make the problem clear.
- Observe yourself carefully and write down how you behaved, reacted, responded or thought when confronted with the problem.
- Identify possible causes.
- Decide what you want to accomplish.
- Brainstorm solutions.
- Review your solution list.
- List specific things that you will do that will contribute to carrying out your chosen solution.

## Evaluating Evidence to Make Informed Decisions

If you are like many stroke survivors, conventional medical approaches may have only taken your recovery so far. Perhaps you still have speech, movement, and/or cognitive problems that impact your quality of life and ability to perform valued activities. Today more and more survivors are turning to alternative medicine treatments.

An "alternative medicine" treatment is one that is not traditionally embraced by Western medicine. For example, acupuncture is one "alternative medicine" approach that is used in many diagnoses, including stroke; another is hyperbaric oxygen therapy. However, whereas acupuncture has many research studies supporting its effectiveness, hyperbaric oxygen therapy does not. So how do you determine which, of many available approaches, might have merit?

You and your family need to be able to sift through the multitude of rehabilitation choices and make an informed decision on what is best for you. In addition, it is very important that you be sure that your healthcare providers are aware of good care options that may be available. There are several things that you can do to make yourself a more informed consumer, and to ensure that the therapies that you are receiving have a body of evidence supporting them:

- Look at the “evidence.” A body of “evidence” consists of research studies that have been performed on a particular device or therapy; if several studies with a large group of people have been performed on a particular therapy, and they support the effectiveness of the particular therapy, we say that the therapy is effective and it has evidence to support it.
- Ask your healthcare providers to share the evidence supporting the techniques that they are providing to you. Don’t just assume that what they are doing works. Indeed, even if you are showing changes, it may be due to the therapy, but it may also be due to other factors. Ask for articles, as well as reasons why they think it is the best fit for you.
- Use Medline. Medline ([www.pubmed.gov](http://www.pubmed.gov)) is a computerized index of most “good” articles that have been published in a certain area. For example, if you were interested in speech therapy after stroke, you could go to Medline, type in “speech therapy stroke.” The latest studies on speech therapies would then come up. Furthermore, if a company is selling a particular product or therapy, making certain claims, or if a therapist tells you the specific name of the technique or device he/she is using, look it up on Medline. Medline is run by the National Library of Medicine and is, thus, supported by your tax dollars. It is also what researchers use when looking up the effectiveness of certain techniques.
- There should be MULTIPLE studies performed on a technique. Be skeptical of therapies where only one study, or no studies, have been performed. The more positive studies that there are, the more people on whom the technique has been successfully tried, and the more generalizable it may be to your circumstances.
- Be skeptical of any product claimed to be effective against a wide range of unrelated diseases – particularly diseases that are serious. Often, stroke survivors and families approach their doctor about new therapies that are being advertised. While some of these therapies are legitimate, some of the claims are grandiose, and often the company will claim that the technique is a “cure all” (called “snake oil” or an “elixir” in the early 1900s). Be very skeptical of products with such claims. Even if the symptoms sometimes look similar, every disease has its own cause(s) and progression(s). Do not assume that just because something may be effective in one group that it applies to your circumstances.
- If you are reading an ad from a company and there are claims that it works, ask where the data were published and, if not published, ask why. There are many alternative therapies that are heavily advertised but do not actually have scientific evidence to justify their use. Be wary of “infomercials” as well. Many of the people shown are paid to talk about the product.

- Be skeptical of a device or technique that only has subjective claims. Videos or testimonials can be great ways to sell a product, or illustrate how something was successful for one particular person. But there may be alternative explanations for one person's (or even a group of persons') successes. Some stroke symptoms also pass with time, or improve on their own. The only way to truly discern if something is going to work reliably from patient to patient, and to rule out the effect of something else, is to systematically test it with a group of patients, as is done in research. Demand these types of studies from companies marketing products and techniques.
- Be sure to tell your doctor about any herbal or over the counter medications or alternative therapies you are taking/are involved with. These actions could negatively impact other areas of your treatment regimen (i.e. other medications or therapies).



INTRODUCING



National Stroke Association's new stroke recovery resource provides convenient and easy-to-use information about how to cope with post-stroke lifestyle and medical issues.

iHOPE is a series of **FREE web presentations** and **"Ask the Experts" Q&A sessions** led by a team of experts who will give you information and resources needed to bring hope to your recovery experience.

This program is supported by education grants from Boehringer Ingelheim Pharmaceuticals, Inc., and Allergan, Inc. It is supported by charitable contributions from the Bristol-Myers Squibb/Sanofi Pharmaceuticals Partnership, Pfizer Inc, Genentech, Inc., and by a sponsorship from Allergan, Inc.

Experience iHOPE at [www.stroke.org](http://www.stroke.org)



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CHAPTER

# THREE

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## Preventing Another Stroke

After stroke, survivors tend to focus on rehabilitation and recovery. But, preventing another (or recurrent) stroke is also a key concern. Of the 795,000 Americans who have a stroke each year, 5 to 14 percent will have a second stroke within one year. Within five years, stroke will recur in 24 percent of women and 42 percent of men.

**Percentage of Reoccurrence  
After First Stroke**

Within 30-Days	3% to 10%
Within 1-Year	15% to 14%
Within 5-Years	25% to 40%

## Your Lifestyle Choices

Everyone has some stroke risk. But, there are two types of stroke risk factors. One type you can't control. The other you can.

## **Stroke risk factors you can't change include:**

- Your age – the older you are, the higher your risk
- Being a man
- Being African American
- Someone in your family has had a stroke.

Having one or more of these factors doesn't mean you will have a stroke. By making simple lifestyle changes, you may be able to reduce the risk of a first or recurrent stroke.

These simple lifestyle changes can greatly reduce your chance of having a stroke:

- Monitor your blood pressure; if it is high, make sure it is treated.
- Find out if you have atrial fibrillation (an irregular heartbeat which allows blood to pool in the heart and cause blood clots).
- Quit smoking.
- Limit alcohol.
- Check your cholesterol levels and make sure bad cholesterol is controlled.
- Manage your diabetes.
- Exercise often.
- Eat foods low in sodium (salt) and saturated or trans fat.
- Monitor circulation problems with the help of your doctor.

## **Monitor Your Blood Pressure**

High blood pressure is one of the most important and easily controlled stroke risk factors. So it's important to know your blood pressure!

Blood pressure is given in two numbers, for example 120/80. The first number, the systolic blood pressure, is a measurement of the force your blood exerts on blood vessel walls as your heart pumps. The second, diastolic blood pressure, is the measurement of the force your blood exerts on blood vessel walls when your heart is at rest between beats.

- For people over age 18, normal blood pressure is lower than 120/80. A blood pressure reading consistently higher than 120/80 is pre-hypertension. If yours falls in this range, you are more likely to progress to high blood pressure. High blood pressure, also called hypertension, is a reading of 140/90 or higher.
- Have your blood pressure checked at least once each year — more often if you have high blood pressure, have had a heart attack or stroke, are diabetic, have kidney disease, have high cholesterol or are overweight. If you are at risk for high blood pressure, ask your doctor how to manage it more aggressively.

Sometimes blood pressure can be controlled through diet and exercise. Even light exercise – a brisk walk, bicycle ride, swim or yard work - can make a difference. Adults should do some form of moderate physical activity for at least 30 minutes five or more days per week, according to the Centers for Disease Control and Prevention. Regular exercise may reduce your risk for stroke. Before you start an exercise program, check with your doctor.

## If Your Blood Pressure is High

What do you do if you still have high blood pressure, even though you have made an effort to eat healthy foods and exercise? Then it's time to talk to your doctor. A doctor can advise you about better lifestyle choices. Medicine may also be needed.

Many drugs can help treat high blood pressure, and most don't produce side effects. The most common are calcium channel blockers and ACE-inhibitors. You and your doctor may have to try several different drugs before you find one that works for you. This is common. So, try not to be discouraged if this happens. Once you find a drug that works, take it as directed and exactly as prescribed, even when you feel fine.

## Medicines

Medicine may help reduce stroke risk. In addition to those that treat high blood pressure, drugs are also available to control high cholesterol and treat heart disease. There are also drugs that can interfere with the blood's tendency to form potential stroke-causing blood clots.

## Heart Disease

Many forms of heart disease can increase your stroke risk. One form - known as atrial fibrillation or AF - causes blood to form clots that can travel to the brain and cause a stroke. AF is an irregular heartbeat.

Anticoagulants and antiplatelets are often prescribed to treat AF. It is important that people prescribed an anticoagulant are regularly monitored by a healthcare provider.

## High Cholesterol

High levels of cholesterol may also increase stroke risk by not letting blood move freely through the arteries. Cholesterol build-up can break off. This can cause a clot to form or a stroke to occur. Several drugs, including a class of drugs called statins, may help lower cholesterol levels. The risk of having another stroke can be lowered by taking a statin. Unless cholesterol levels are already low, taking a statin is generally beneficial.

## Blood Clotting

There are two classes of drugs that can help prevent clotting: anticoagulants and antiplatelets. Both types of drugs can prevent clots, helping reduce the risk of stroke. Anticoagulants require regular monitoring by a healthcare provider.

## Surgical Options

For those whose first stroke was caused by a blockage in the carotid arteries (vessels that carry blood from the heart to the brain), surgery known as carotid endarterectomy may help reduce risk of another stroke. During surgery, blockages and build-up in the arteries are removed to restore the free flow of blood. Your doctor is the best judge to decide if this is a good option for you.

## Adherence is Critical

The key to preventing recurrent stroke is simple: follow your doctor's suggestions about diet, exercise and weight loss, and take any medicine as directed. Your doctor will decide what's best for you based on your general health and your medical history. By understanding the basis for these decisions, you'll be better able to follow the suggestions and make informed choices that will help reduce your risk of stroke.

## Transient Ischemic Attacks (TIAs): A Warning Sign for Stroke

Stroke prevention is also crucial for those who have had transient ischemic attacks (TIAs) or mini-strokes. TIAs are brief episodes of stroke-like symptoms that last from a few minutes to 24 hours. TIAs don't cause permanent disability. But, they can be serious warning signs of an impending stroke. Up to one third of people who have a TIA are expected to have a stroke, and most of these will occur in the first few days to weeks after the TIA. Just like the first strokes, many recurrent strokes and TIAs can be prevented through lifestyle changes, surgery, medicine, or a mix of all three.

## Symptoms of TIA (and Stroke)

What are the symptoms of TIA? The symptoms of TIAs are the same as for stroke. They vary depending on which part of the brain is affected:

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

If you experience any of these symptoms, for even the briefest amount of time or notice them in someone else, seek medical attention immediately. Don't wait for the symptoms to go away, because you cannot tell whether you are having a stroke or a TIA. If you are having a TIA, a doctor can evaluate and treat the causes and set up a plan of action to prevent a stroke.

## Different Causes of TIAs

### Three things generally cause TIAs:

- Low blood flow at a narrowing in a major artery to the brain
- A blood clot in another part of the body breaking off and temporarily lodging itself in a brain blood vessel
- Narrowing in one of the smaller blood vessels in the brain, stopping blood flow temporarily.

Unfortunately, most people who have TIAs don't seek treatment, either because the symptoms come and go quickly and are painless or because they think their symptoms are caused by old age, fatigue, etc. Once you have had a TIA, you are at high risk for another TIA or a full stroke if not treated.

## Managing TIAs

The goal of TIA management is to prevent a future stroke. The treatment used depends on the exact cause of the TIA. In addition to lifestyle changes such as diet and exercise, your doctor may recommend drugs to treat high blood pressure, high cholesterol or heart disease. These changes may reduce your risk of further TIA or stroke.

There are many medicines that help prevent blood clots from forming, reducing the risk of a full-blown stroke. Furthermore, statins and blood pressure control may also reduce stroke risk.

## Better Nutrition for Stroke Prevention

Healthy eating is good for you. It will help you manage your weight and blood pressure. Both are crucial to prevent another stroke and stay healthy. Ask your doctor to arrange a visit with a licensed dietician. The dietician will teach you how to plan meals and snacks to improve your health.

- Plan to eat a variety of foods each day.
- Eat at least five servings of fruits and vegetables per day.
- Choose foods low in saturated and trans fats.
- Your doctor may suggest a special diet to help you lose weight. Or you may need to eat foods with less salt or fat.

## Eat Foods with Adequate Starch and Fiber

Complex carbohydrates are better than simple carbohydrates, such as sugars, because they contain essential nutrients and fiber. Substituting complex carbohydrates for sugars is recommended. These foods include beans, peas, nuts, fruits, vegetables, whole grain breads and cereals.

## Avoid Excess Sugar

Sugar provides only empty calories to the body. To cut down on sugars, try the following:

- Use less of all sugars, including white, brown and raw sugars, honey, and syrups.
- Eat less of foods containing large amounts of sugar, such as candy, soft drinks, cakes, ice cream and cookies.
- Substitute fresh fruit or fruit canned in water or its own juice.
- Watch for hidden sugar. Read labels. If sucrose, glucose, maltose, dextrose, lactose, fructose or syrups are listed first among the ingredients, then there is a large amount of sugar in that product.

## Avoid Excess Fat

The intake of fat, particularly saturated animal fat, trans fat and cholesterol, is a contributing factor in developing atherosclerosis, which is associated with stroke and heart disease. To avoid excess bad fat in your diet:

- Choose lean meat, fish, poultry, dried beans and peas as your protein source. Cut back on red meat.
- Trim excess fat off meats before cooking.
- Minimize use of eggs (no more than 3 a week) and organ meats (eg, liver).
- Use only low-fat dairy products.
- Broil, bake or boil rather than fry foods. A spray vegetable oil coating may be used.
- Read labels to determine the amount of fat contained in foods.

## Avoid Excess Sodium

Excess salt in your diet increases the risk of high blood pressure, which is a major factor in heart disease and stroke. Table salt is the primary source of dietary sodium. **To limit sodium in your diet try the following:**

- Avoid salt in cooking and at the table; learn to enjoy the natural unsalted flavor of foods.
- Limit your use of foods that have a high salt or sodium content such as cured meats, potato chips, pretzels, salted nuts, cheese, prepackaged dinners, baked desserts, and dried fruits. Watch for hidden salt. Di-sodium phosphate, monosodium glutamate, sodium nitrate, and any other sodium compound in the list of ingredients indicates a high sodium content.
- Avoid the use of spices and condiments containing sodium such as bouillon cubes, catsup, chili sauce, celery salt, garlic salt, onion salt, meat tenderizers, pickles, relishes, worcestershire and soy sauce. Some of these are now being made in low-sodium versions.
- Some over-the-counter drugs, especially antacids and headache remedies, have a high-sodium content.
- Be sure to check with your doctor before using a salt substitute.

## Limit Alcohol

Alcoholic beverages are high in calories and low in nutrients. Heavy drinking may lead to serious physical and mental deterioration and may increase risk of stroke. Drink only in moderation.

## Maintain Ideal Weight

Being overweight increases the risk of a number of diseases including hypertension, coronary atherosclerosis and diabetes. All of these problems increase the risk of stroke or heart attack. Excess weight will decrease mobility and interfere with daily activities. To lose weight you must decrease calories without sacrificing essential nutrients, and start or maintain an exercise program.

## Tips for Eating Healthy

- Rather than frying, switch to baking, broiling, steaming or grilling. If sautéing something, use nonstick cookware and a nonstick spray.
- Replace your morning cup of coffee with a glass of orange juice.
- Rather than eating the same vegetables you are used to, be adventurous. Make it your goal to try one new vegetable each time you visit the grocery store.
- To help keep blood pressure under control, exchange high sodium ingredients such as soy sauce with low sodium, high flavor alternatives such as herbs or orange juice.
- Instead of an afternoon cookie, grab a handful of walnuts for a snack.
- Look for pre-washed, pre-cut fruits and vegetables at the grocery store. Most places offer apple slices, baby carrots, broccoli florets, celery sticks, mixed vegetables, salad greens and spinach.
- Ask family members and friends to make healthy meals that you can store in the refrigerator or freezer. Save these foods for the days you are too tired to cook.

# STARS Steps Against Recurrent Stroke

## Be a StrokeSmart STAR:

- Stop smoking
- Keep blood pressure, cholesterol and diabetes under control
- Manage atrial fibrillation
- Eat healthy
- Increase activity

Also be sure to follow your doctor's directions and take your medicine even if you feel fine.

To get a brochure and more information  
on the STARS program contact  
National Stroke Association



1-800-STROKES • 1-800-787-6537 • [www.stroke.org](http://www.stroke.org)

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CHAPTER  
**FOUR**

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## Movement and Exercise

Moving around safely and easily may not be something you think about, unless you've had a stroke. Many stroke survivors have trouble moving around. These problems range from balance issues to arm or leg paralysis. As a result, about 40 percent of stroke survivors have serious falls within a year of their strokes. But, there is good news. Rehab and therapy may improve your balance and ability to move.

### Movement

The most common physical effect of stroke is muscle weakness and having less control of an affected arm or leg. Survivors often work with therapists to restore strength and control through exercise programs. They also learn skills to deal with the loss of certain body movements.

### Paralysis and Spasticity

Paralysis is the inability of muscle or group of muscles to move on their own. After stroke, signals from the brain to the muscles often don't work right. This is due to stroke damage to the brain. This damage can cause an arm or leg to become paralyzed and/or to develop spasticity.

**Spasticity** is a condition where muscles are stiff and resist being stretched. It can be found throughout the body but may be most common in the arms, fingers or legs. Depending on where it occurs, it can result in an arm being pressed against the chest, a stiff knee or a pointed foot that interferes with walking. It can also be accompanied by painful muscle spasms.

## Treatment Options for Spasticity

- Treatment for spasticity is often a combination of therapy and medicine. Therapy can include range-of-motion exercises, gentle stretching, and splinting or casting.
- Medicine can treat the general effects of spasticity and act on multiple muscle groups in the body.
- Injections of botulinum toxin can prevent the release of chemicals that cause muscle contraction.
- One form of treatment involves the delivery of a drug directly into the spinal fluid using a surgically placed pump.
- Surgery is the last option to treat spasticity. It can be done on the brain or the muscles and joints. Surgery may block pain and restore some movement.

## Exercise

Walking, bending and stretching are forms of exercise that can help strengthen your body and keep it flexible. Mild exercise, which should be undertaken every day, can take the form of a short walk or a simple activity like sweeping the floor. Stretching exercises, such as extending the arms or bending the torso, should be done regularly. Moving weakened or paralyzed body parts can be done while seated or lying down. Swimming is another beneficial exercise if the pool is accessible and a helper is available. Use an exercise program that is written down, with illustrations and guidelines for a helper if necessary.

## Fatigue

Fatigue while exercising is to be expected. Like everyone else, you will have good and bad days. You can modify these programs to accommodate for fatigue or other conditions. Avoid overexertion and pain. However, some discomfort may be necessary to make progress.

## Sample Exercise Programs

There are two exercise programs on the following pages. The first is for the person whose physical abilities have been mildly affected by the stroke. The second is for those with greater limitations. If you are not sure which one is appropriate, consult the profile that precedes each program.

All of the exercises may be performed alone if you are able to do so safely. However, for many stroke survivors, it is advisable for someone to stand nearby while an exercise session

is in progress. Your caregiver should watch for errors in judgment that could affect safety. For instance, some stroke survivors are not aware that their balance is unsteady, nor can they tell left from right. Others may have lost the ability to read the exercise instructions, or may need assistance to remember a full sequence of movements.

In general, each exercise is performed five to 10 times daily, unless otherwise directed. The exercise session should be scheduled for a time of day when you feel alert and well. You might have these ups and downs frequently. If the exercises are too tiring, divide them into two sessions – perhaps once in the morning and again in the afternoon.

Because the effects of stroke vary, it is impossible to devise a single exercise program suitable for everyone. The two programs detailed here are general and are intended to serve as a guide. You should consult an occupational therapist and/or physical therapist, who can help in selecting the specific exercises that will benefit you, and who will provide instruction for both you and your caregiver.

## Resources

For referral to an occupational or physical therapist, consult your doctor or contact a home health agency, a family service agency, or the physical therapy department of your community hospital. You may also try contacting the American Occupational Therapy Association at (301) 652-2682 or the American Physical Therapy Association at (800) 999-2782 for a referral in your area.

As with any exercise program, consult with your doctor and/or therapist before beginning this program. If any exercises are too difficult and cause pain or increased stiffness in your limbs, do not do them.

# Exercise Program I

## For those mildly affected by stroke

### Profile

If you were mildly affected by stroke, you may still have some degree of weakness in the affected arm and leg, but generally have some ability to control your movements. You may also have some obvious stiffness or muscle spasms, particularly with fatigue or stress.

You may be able to walk without someone's assistance, but may use a walker, cane or brace. For managing longer distances or uneven terrain, you may require some minimal assistance from another person, a more supportive walking aid or a wheelchair.

Abnormalities may be present when you walk, but may be corrected by exercise and by fitting shoes with lifts or wedges. A prescription for these shoe modifications can be obtained from a doctor following evaluation by a physical therapist. You can usually use the stairs with or without handrails, with a helper close by or with very minimal assistance.

Clothing that does not restrict movement is appropriate for exercising. It is not necessary to wear shorts, such as those shown in the illustrations. Leisure clothing such as sweat suits or jogging suits is appropriate. Sturdy, well-constructed shoes with non-skid soles, such as athletic shoes, are recommended at all times. It is important that your foot on the affected side be checked periodically for reddened areas, pressure marks, swelling or blisters – especially when there is poor sensation or a lack of sensation. Reddened areas and pressure marks should be reported to a doctor or physical therapist.

### The following exercises can help you:

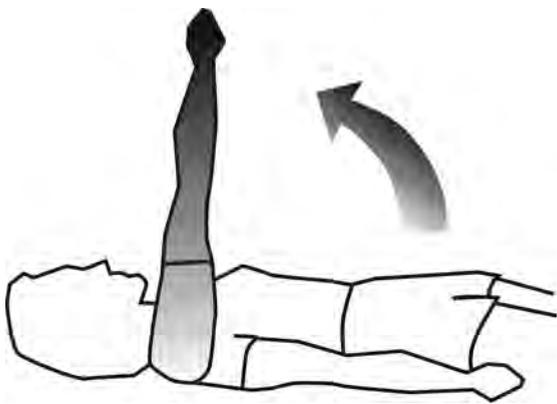
- Require less assistance for stair climbing
- Move more steadily when you walk
- Improve balance and endurance
- Strengthen and refine movement patterns
- Improve the coordination and speed of movement necessary for fine motor skills, such as fastening buttons or tying shoelaces.

**Note:** In the illustrations that follow, non-shaded areas show body position at the beginning of the exercise. Shaded areas show body position at the end of the exercise. Arrows show the direction of movement. Also, the word “floor” has been used to simplify the instructions; the exercises can be performed on the floor, on a firm mattress, or on any appropriate supportive surface.

## Exercise 1

### To strengthen the muscles that stabilize the shoulder

- Lie on your back with your arms resting at your sides.
- Keep your elbow straight, lift your affected arm to shoulder level with your hand pointing to the ceiling.

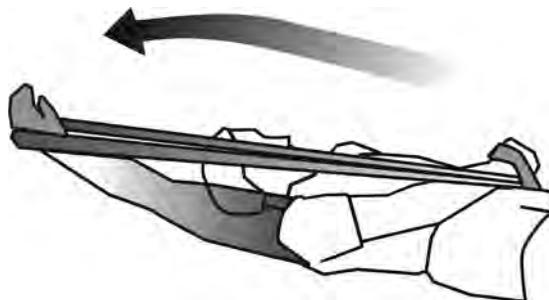


- Raise your hand toward the ceiling, lifting your shoulder blade from the floor.
- Hold for three to five seconds, and then relax, allowing your shoulder blade to return to the floor.
- Slowly repeat the reaching motion several times.
- Lower your arm to rest by your side.

## Exercise 2

### To strengthen the shoulder muscles as well as those which straighten the elbow

- Lying on your back, grasp one end of an elasticized band\* in each hand with enough tension to provide light resistance to the exercise, but without causing undue strain.
- To start, place both hands alongside the unaffected hip, keeping your elbows as straight as possible.
- Move your affected arm upward in a diagonal direction, reaching out to the side, above your head, keeping your elbow straight\*\*. Your unaffected arm should remain at your side throughout the exercise.
- During the exercise, stretch the band so that it provides resistance.



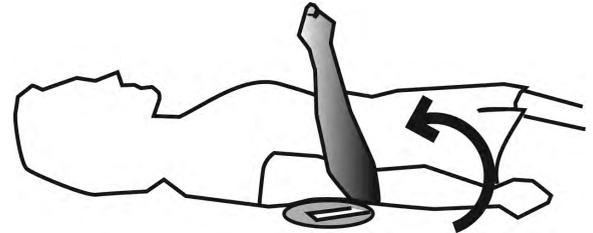
\*Elasticized bands are marketed as Theraband. They are available in varying strengths (color-coded) to provide progressive resistance. Initially, a three or four foot length band – perhaps with the ends knotted together to improve grip – is sufficient for the exercise. To increase resistance as strength improves, the next density of Theraband can be purchased, or two or more bands of the original density can be used at once. Theraband can be obtained from a medical supply company. Similar elastic bands or cords are also available at many sporting goods stores where exercise equipment is sold.

\*\*If it is too difficult to keep the elbow straight, the exercise can be done with the elbow bent. If you cannot grip with your hand, a loop can be tied at the end to slip your hand partially through the loop, leaving the thumb out to “catch” the loop during upward movement.

## Exercise 3

### To strengthen the muscles which straighten the elbow

- Lie on your back with your arms resting at your sides and a rolled towel under the affected elbow.
- Bend affected elbow and move your hand up toward your shoulder. Keep your elbow resting on the towel.
- Hold for a few seconds.
- Straighten your elbow and hold.
- Slowly repeat several times.

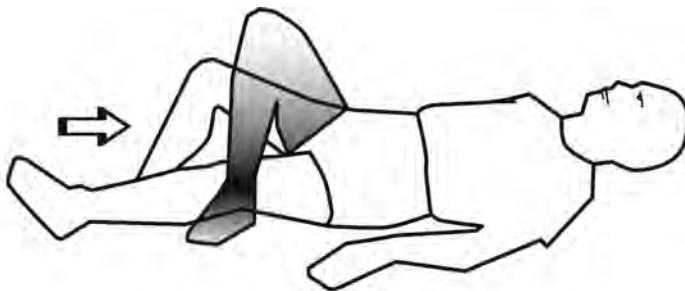


**Note:** Try not to let the hand roll in towards your mid-section/stomach.

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## Exercise 4

### To improve hip control in preparation for walking activities



- Start with your unaffected leg flat on the floor and your affected leg bent.
- Lift your affected foot and cross your affected leg over the other leg.
- Lift your affected foot and un-cross, resuming the position of step b.
- Repeat the crossing and un-crossing motion several times.

## Exercise 5

### To enhance hip and knee control

- Start with your knees bent, feet resting on the floor.
- Slowly slide the heel of your affected leg down so that the leg straightens.
- Slowly bring the heel of your affected leg along the floor, returning to the starting position. Keep your heel in contact with the floor throughout the exercise.

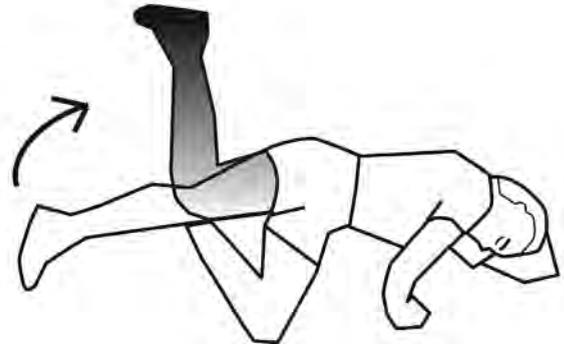


**Note:** Your foot will slide more smoothly if you do this exercise without shoes.

## Exercise 6

### To improve control of knee motions for walking

- Lie on your unaffected side with the bottom knee bent for stability and your affected arm placed in front for support.
- Starting with your affected leg straight, bend your affected knee, bringing the heel toward your buttocks, then return to the straightened position.
- Concentrate on bending and straightening your knee while keeping your hip straight.



## Exercise 7

### To improve weight shift and control for proper walking technique



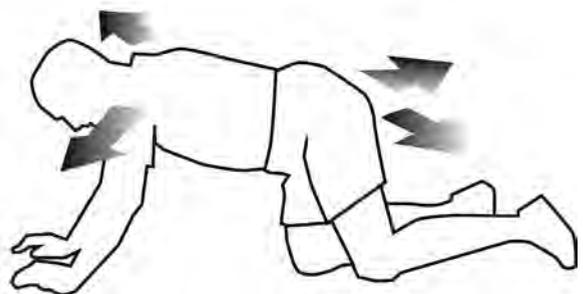
- Start with your knees bent, feet flat on the floor and knees close together.
- Lift your hips from the floor and keep them raised in the air.
- Slowly twist your hips side to side. Return to center and lower your hips to the floor.
- Rest. Repeat motion.

**Note:** This exercise may be difficult for some stroke survivors and it may worsen back problems. Do not do it if you experience pain.

## Exercise 8

### To improve balance, weight shift and control to prepare for walking activities

- The starting position is on your hands and knees. Weight should be evenly distributed on both arms and both legs.
- Rock in a diagonal direction back toward your right heel as far as possible, then as far forward toward your left hand as possible.
- Repeat motion several times, slowly rocking as far as possible in each direction.



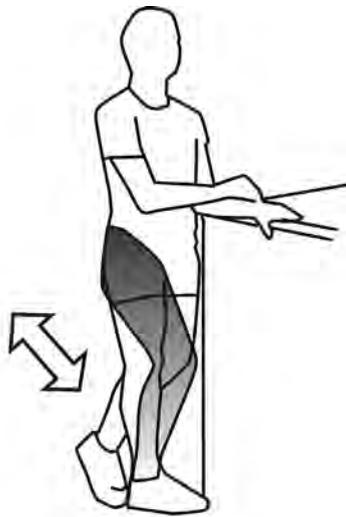
- d. Return to center.
- e. Rock in a diagonal direction toward your right hand. Move as far back as possible in each direction slowly.

**Note:** For safety, an assistant may be nearby to prevent loss of balance. This position may not be appropriate or safe for elderly stroke survivors. Consult your doctor and/or physical therapist before attempting this exercise.

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## Exercise 9

### To simulate proper weight shift and knee control necessary for walking



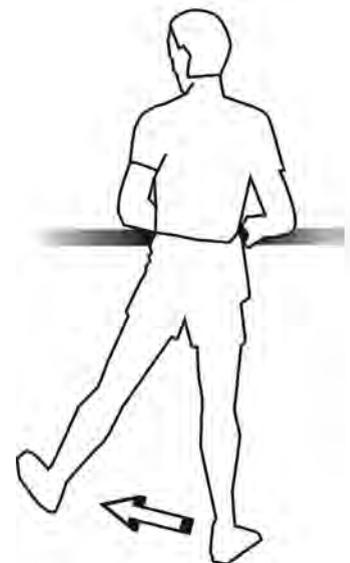
- a. Stand with your unaffected side next to a countertop or other firm surface. Rest your unaffected arm on the surface for support.
- b. Lift your unaffected foot from the floor so that you are standing on your affected leg.
- c. Slowly bend and straighten the leg on which you are standing through a small range of motion. Try to move smoothly, not allowing your knee to buckle when you bend, or to snap back when you straighten.
- d. Repeat the knee bending and straightening several times, slowly.

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## Exercise 10

### To simulate proper weight shift while strengthening hip and pelvis muscles

- a. Stand facing a countertop or other firm surface for support.
- b. Shift your weight onto your right leg and lift your knee straight.
- c. Return to center with both feet on the floor.
- d. Shift your weight onto your left leg and lift your right leg out to the side keeping your back and knee straight.
- e. Repeat several times, alternating lifts.



# Exercise Program II

## For the person moderately affected by stroke

### Profile

If you were moderately affected by your stroke, you may use a wheelchair most of the time. You are probably able to walk – at least around the house – with the aid of another person or by using a walking aid. A short leg brace may be needed to help control foot drop or inward turning of the foot. A sling may be used to help the arm and aid in shoulder positioning for controlling pain. Your affected arm and leg may be stiff or may assume a spastic posture that is difficult to control. The toe may turn inward or the foot may drag. When walking, you may “lead” with the unaffected side, leaving the other side behind. Often there are balance problems and difficulty shifting weight toward the affected side.

Clothing that does not restrict movement is appropriate for exercising. It is not necessary to wear shorts, such as those shown in the illustrations. Leisure clothing such as sweat suits or jogging suits is appropriate. Sturdy, well-constructed shoes with non-skid soles, such as athletic shoes, are recommended at all times. It is important that your foot on the affected side be checked periodically for reddened areas, pressure marks, swelling or blisters – especially when there is poor sensation or a lack of sensation. Reddened areas and pressure marks should be reported to a doctor or physical therapist.

The purpose of this exercise program is to:

- Promote flexibility and relaxation of muscles on the affected side
- Help return to more normal movement
- Improve balance and coordination
- Decrease pain and stiffness
- Maintain range of motion in the affected arm and leg

### For the Stroke Survivor

Begin with exercises done lying on your back, and then move on to those performed lying on your unaffected side, then sitting, and then standing. Make sure that the surface on which you lie is firm and provides good support. Take your time when you exercise. Don't rush the movements or strain to complete them.

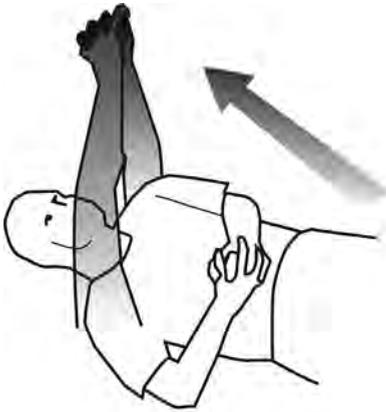
**Note:** In the illustrations that follow, non-shaded areas show body position at the beginning of the exercise. Shaded areas show body position at the end of the exercise. Arrows show the direction of movement. In addition, the word “floor” has been used to simplify the instructions; the exercises can be performed on the floor, on a firm mattress or on any appropriate supporting surface.

### For the Helper

There may be no need to assist the stroke survivor in the exercises, but you should be nearby during the exercise session. If the survivor has difficulty reading or remembering the sequence of movements, you can hold the illustration up to where it can be seen or repeat the instructions one by one. You can also offer physical assistance and encouragement when needed.

## Exercise 1

### To enhance shoulder motion and possibly prevent shoulder pain



- Lie on your back on a firm bed. Interlace your fingers with your hands resting on your stomach.
- Slowly raise your arms to shoulder level, keeping your elbows straight.
- Return your hands to resting position on your stomach.

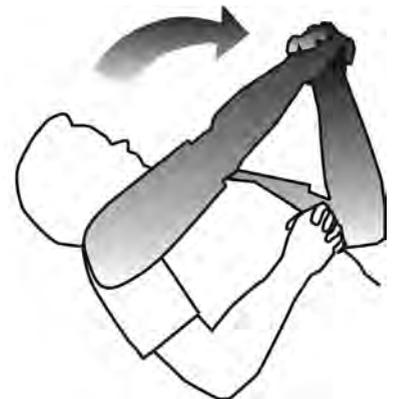
**Note:** If pain occurs, it may be reduced by working within the range of motion that is relatively pain-free, then going up to the point where pain is felt. The arm should not be forced if pain is excessive, but effort should be made to daily increase the range of pain-free motion.

## Exercise 2

### To maintain shoulder motion

*(may be useful for someone who has difficulty rolling over in bed)*

- Lie on your back on a firm bed. Interlace your fingers, with your hands resting on your stomach.
- Slowly raise your hands directly over your chest, straightening your elbows.
- Slowly move your hands to one side and then the other.
- When all repetitions have been completed, bend your elbows and return your hands to resting position on your stomach.



**Note:** If shoulder pain occurs, move only to the point where it begins to hurt. If the pain continues, don't do this exercise.

## Exercise 3

### To promote motion in the pelvis, hip and knee

*(Can help to reduce stiffness and is also useful for rolling over and moving in bed)*

- Lie on your back on a firm bed. Keep your interlaced fingers resting on your stomach.
- Bend your knees and put your feet flat on the bed.
- Holding your knees tightly together, slowly move them as far to the right as possible. Return to center.
- Slowly move your knees as far as possible to the left, still keeping them together. Return to center.



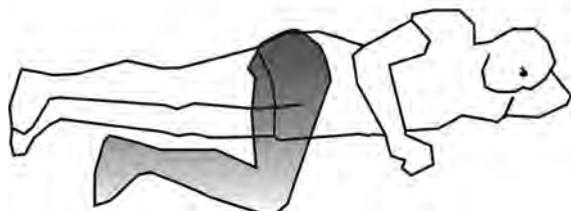
**Note:** The helper may provide assistance or verbal cues to help you keep your knees together during this exercise.

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## Exercise 4

### To improve motion at the hip and knee, simulating the movements needed for walking

*(Can be useful when moving toward the edge of the bed before coming to a sitting position)*



- Lie on your unaffected side, with your legs together.
  - Bend and move your affected knee as far as possible toward your chest. You may need your helper's assistance to support the leg you're exercising.
  - Return to starting position.
- 

## Exercise 5

### To strengthen the muscles that straighten the elbow

*(Necessary for getting up from a lying position)*

- Sitting on a firm mattress or sofa, put your affected forearm flat on the surface with your palm facing down if possible. You may want to place a firm pillow under your elbow.
- Slowly lean your weight onto your bent elbow. You may need your helper's assistance to maintain your balance.

- c. Push your hand down against the support surface, straightening your elbow and sitting more upright. (Assistance may be required to prevent sudden elbow collapse).
- d. Slowly allow your elbow to bend, returning your forearm to the support surface.
- e. Work back and forth between the two extremes (completely bent or completely straight) in a slow, rhythmical manner.

**Note:** This exercise should not be performed if your shoulder is not yet stable and/or will not support your upper body weight. Consult your doctor and/or physical therapist before attempting this exercise.



## Exercise 6

### To reduce stiffness in the trunk and promote the body rotation needed for walking



- a. Sit on a firm straight chair with both feet flat on the floor. If necessary, a firm mattress, sofa, or wheelchair may be used.
- b. Interlace your fingers.
- c. Bend forward and reach with your hands toward the outside of your right foot, rotating your trunk.
- d. Move your hands upward in a diagonal direction toward your left shoulder, keeping your elbows as straight as possible.
- e. Repeat the motions, moving your hands from your left foot to your right shoulder.

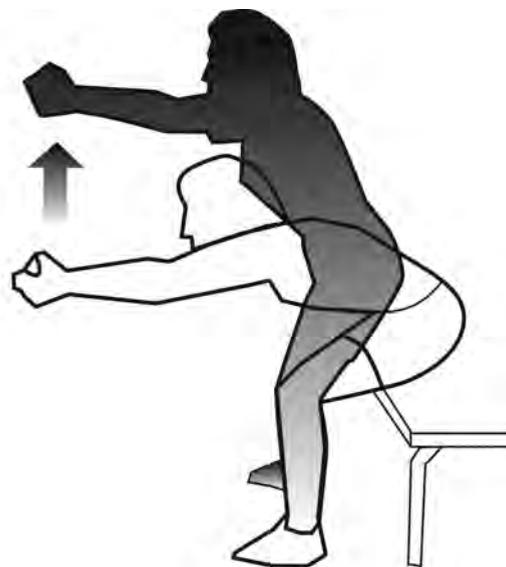
**Note:** Only individuals with good balance who can sit fairly independently should do this exercise. If balance is impaired, an assistant may stand in front, guiding the arms through the motions.

## Exercise 7

### Movements needed to rise from a sitting position

- Sit on a firm chair that has been placed against the wall to prevent slipping.
- Interlace your fingers. Reach forward with your hands.
- With your feet slightly apart and your hips at the edge of the seat, lean forward, lifting your hips up slightly from the seat.
- Slowly return to sitting.

**Note:** In a progression of the exercise, try to rise to a complete standing position (see step C) and return to sitting. However, this should only be done by someone with good balance who can come to a standing position safely.



## Exercise 8

### To maintain the ankle motion needed for walking

*(also maintains motion at the wrist and elbow)*



- Stand at arm's length from the wall, knees straight, feet planted slightly apart and flat on the floor with equal weight on both feet.
- With your unaffected hand, hold your affected hand in place against the wall at chest level.
- Slowly bend your elbows, leaning into the wall. This places a stretch on the back of your lower legs. Keep your heels on the floor.
- Straighten your elbows, pushing your body away from the wall.

**Note:** If the stroke survivor's affected arm is very involved, he or she may find this exercise too difficult. Consult your doctor and/or physical therapist before attempting this exercise.

## Getting Up from a Fall

Before attempting to help a person stand up after a fall, make sure he/she has not been injured. If there are any cuts, bruises or painful areas, make the person comfortable on the floor while you get help. Do not attempt to move the individual until help arrives.

Most falls, however, do not result in injury. The illustrations that follow outline a recommended method for getting from the floor onto a chair. The individual who has fallen may need assistance, but should be able to rise using this technique.



### Step 1

Assume a side-sitting position with the unaffected side close to a heavy chair or other object that will not move.



### Step 2

Place the unaffected forearm on the seat of the chair and lean on the elbow or hand. Shift weight forward onto your knees and lift your hips until you are in a kneeling position.



### Step 3

Supporting yourself with your unaffected arm, bring your unaffected foot forward and place it flat on the floor. Some assistance may be required to keep the affected limb in the kneeling position while placing the unaffected one in the position illustrated.



### Step 4

Lift yourself up by pushing with your unaffected arm and leg. Twist your hips toward the chair and sit on the seat.







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