

Stroke: Your Guide to Treatment and Recovery

This material was developed for use as a guide with information and is not intended to replace medical or professional advice.



**Berkshire
Medical Center, Inc.**
BERKSHIRE HEALTH SYSTEMS, INC.

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Know the Warning Signs of Stroke

- Sudden numbness/weakness of face, arm or leg, mainly on one side of the body
- Sudden loss of vision, mostly in one eye
- Sudden trouble speaking or understanding speech
- Sudden confusion
- Sudden dizziness, loss of coordination or difficult walking
- Sudden severe headache with no known cause

Remember:

**Stroke is a serious medical emergency!
Do not wait, CALL 911.**

TIME IS *BRAIN*



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INTRODUCTION

This book was created as a guide for patients and caregivers of those who have had a stroke or Transient Ischemic Attack (TIA), often referred to as a mini-stroke. Stroke affects patients and their families. Our goal is to provide excellent medical care and rehabilitation during your hospital stay and beyond. It is hoped that the information provided will be useful in your treatment and recovery and help to support your recovery, preventing further events in the future. The Stroke Program wishes you continued success in your journey. Please use this book as a guide and personal reference and share with family and friends. Use it to maintain a list of questions and medical appointments.

Important Information about Strokes:

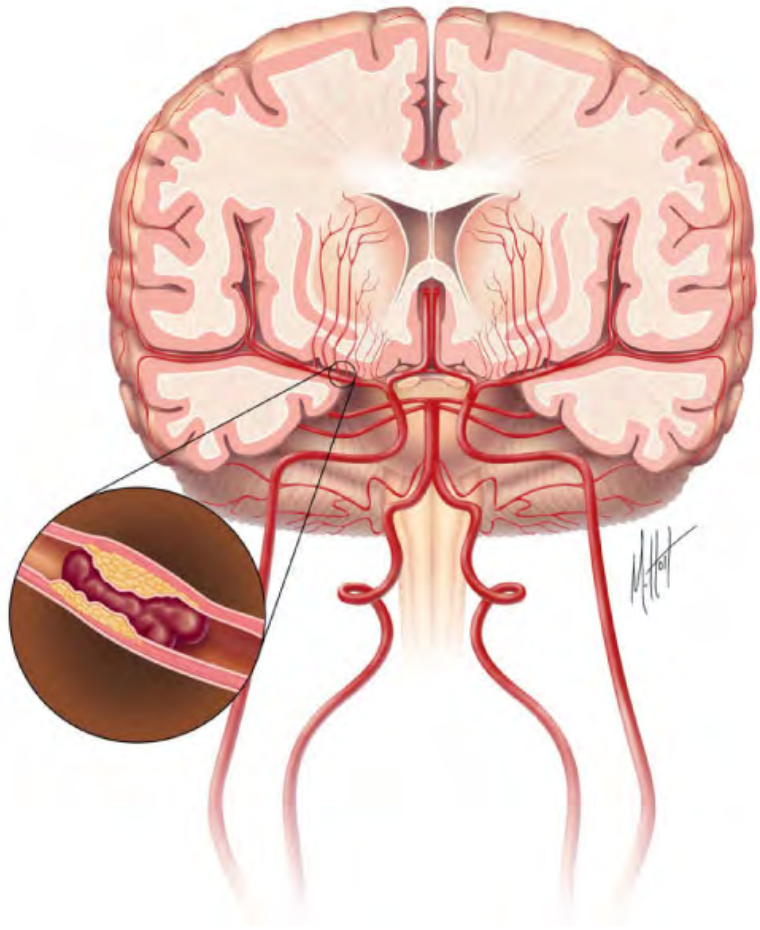
- Every stroke is different and the journey to recovery is unique for each stroke survivor.
- Stroke is the leading cause of disability and the 4th leading cause of death in the U.S so it is important to know the warning signs and act quickly.
- Someone in this country has a stroke every 40 seconds with an average of 795,000 strokes/year.
- Up to 80% of all strokes and recurrent strokes are preventable through risk management and follow up.

To learn more about stroke feel free to ask questions during your stay, or go to the Berkshire Health Systems website at www.berkshirehealthsystems.com . Please visit the “Other Resources” section in this book for more information.

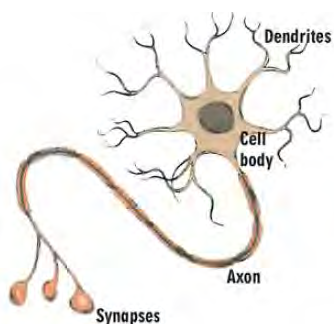
CHAPTER ONE: Stroke Defined

What is a Stroke?

A stroke results when blood and oxygen flow to the brain is stopped or interrupted. This happens because of a ruptured or blocked blood vessel. A newer term is brain attack similar to the term heart attack which also results from lack of oxygen.



The Central Nervous System

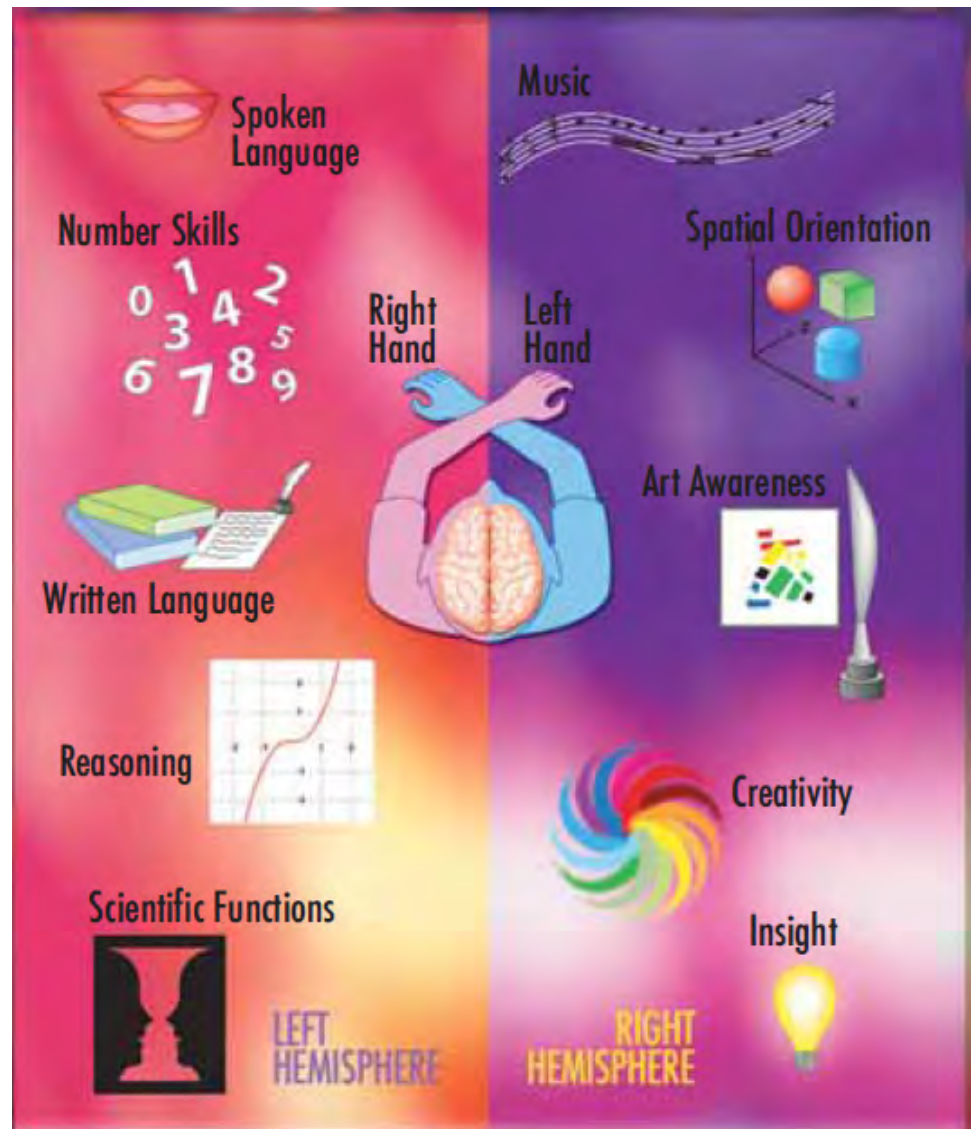


The brain is made up of neurons. These special cells of the central nervous system are responsible for sending signals that control speech, movement, and thinking processes and senses such as hearing, sight and touch. When neurons are damaged, the person experiences symptoms.

The neurons on one side of the brain usually control the actions of the opposite side of the body. For example, the left side of the brain controls the right side of the body. The part of the brain affected by a stroke determines which parts of the body are affected.

Production and interpretation of speech are usually controlled by the left side of the brain in most people.

The base of the brain (brainstem) is connected to the spinal cord. The brainstem controls eye movements, swallowing, breathing, alertness, and other specialized functions.

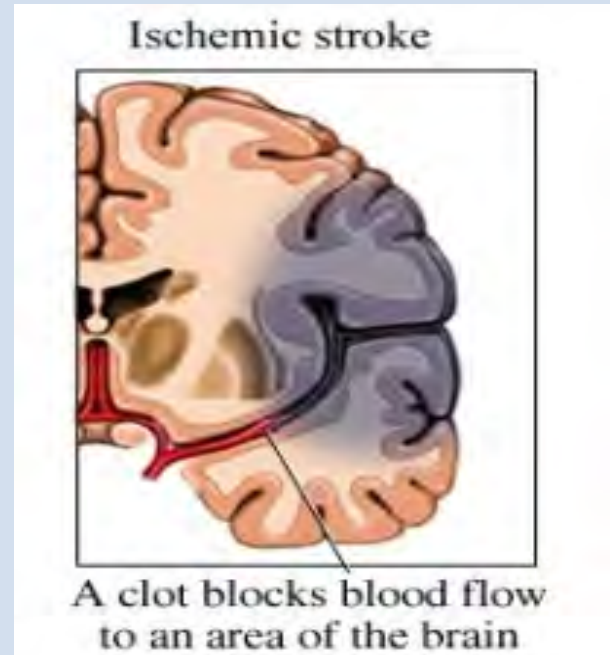


Types of Stroke

The two main types of stroke:

Ischemic (i-skee-mik) Stroke

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



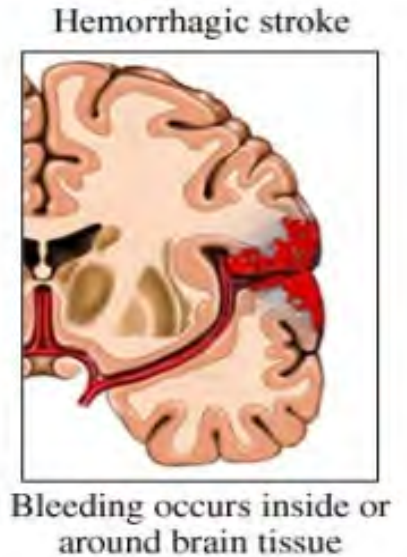
Treatment: Tissue Plasminogen Activator (t-PA) is commonly given if diagnosed within a 3-4 ½ hour period and if the patient qualifies for this type of therapy. It works by dissolving the clot.

Common terms that might be heard include *embolic* and *thrombotic* to describe ischemic stroke. These terms refer to the clot forming processes.

Lacunar strokes refer to the blockage of small vessels deep in the brain. As with all strokes the area affected determines the symptoms the patient will have.

Hemorrhagic (hem-er-ah-jik) Stroke

- Less common and often severe
- Caused by ruptured blood vessels that bleed into and around the brain.
- Sometimes Ischemic strokes can become hemorrhagic which is termed “hemorrhagic conversion”



Treatment: There is no easy treatment of hemorrhagic strokes. Treatment and management are focused on stopping the bleed and reducing pressure on the brain.

Transient Ischemic Attack (TIA)

- These are sometimes called “mini strokes” or “mini attack”.
- They are caused by temporary loss of blood flow to a part of the brain.
- They include the same symptoms as a stroke and often precede a stroke.
- These should be taken seriously since receiving early treatment for a TIA can help prevent future strokes and reduce risk.

Symptoms of a transient ischemic attack (TIA) should never be ignored. Call 911 right away!

My Stroke

(To be completed by your healthcare provider for initial or subsequent strokes)

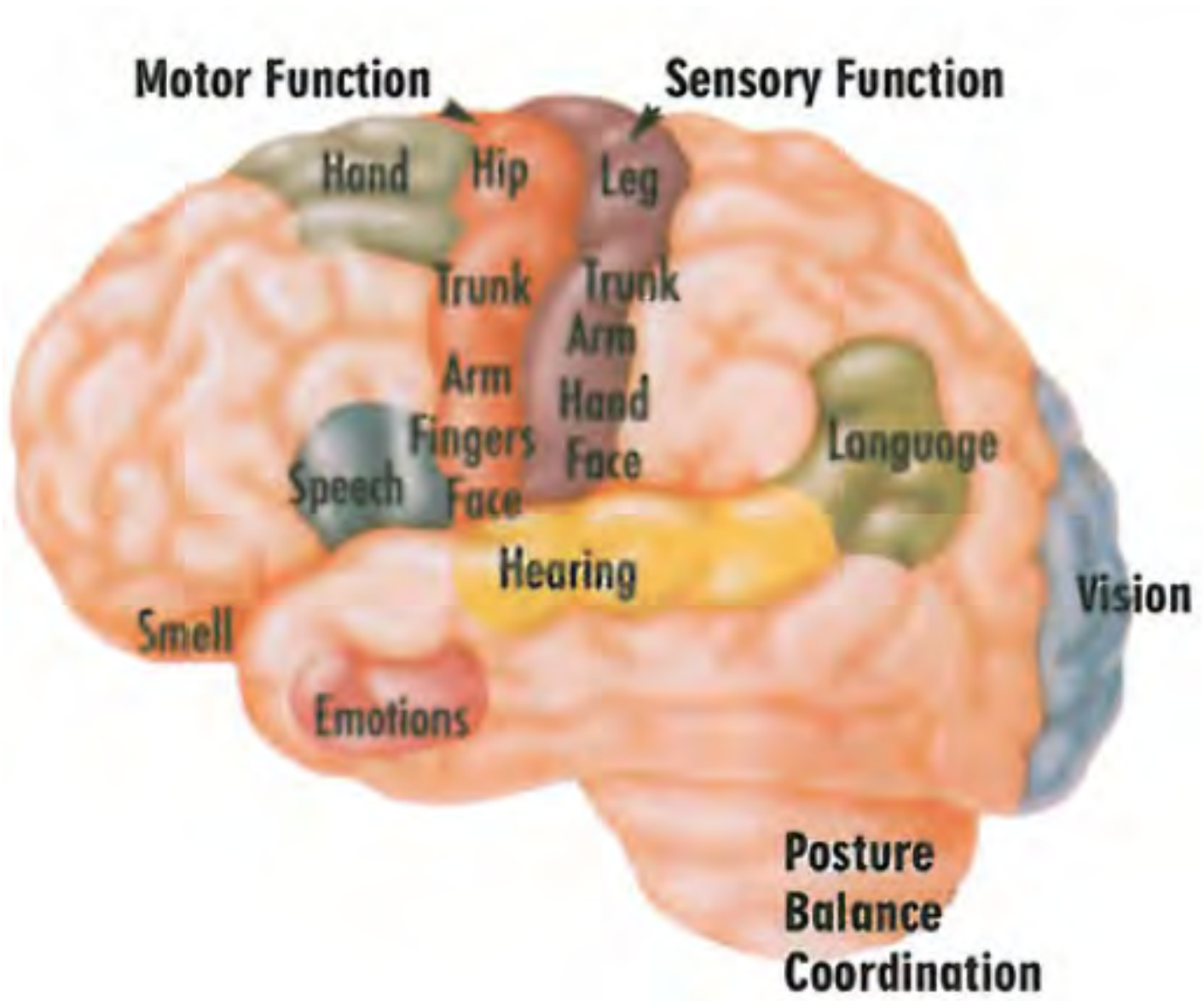
Date of stroke: _____

Type of Stroke: _____|_____

Location: _____

Treatment: _____

The area circled on the following images gives you a general idea where your stroke occurred.



CHAPTER TWO: Effects of Stroke or Cerebrovascular Accident (CVA)

Physical changes

Strokes can have physical and emotional effects. Changes after a stroke may be mild or severe; brief or long-lasting.

This depends on the location and size of the stroke.

Everyday activities may be more difficult to perform after a stroke. Difficulties may include:

Eating/ Swallowing

Driving

Bathing

Handling money

Getting dressed

Writing

Using the toilet

Speaking

Doing housework

Coordinating body

Using the telephone

movements

Emotional Changes

Emotional changes may occur if the stroke damages parts of the brain that controls behavior. These changes may also be caused by the body's reaction to the stroke. It is advisable to speak with a doctor if emotional changes become severe or if

they don't go away. Talking with a counselor or psychotherapist may be helpful. It is not unusual for symptoms of depression to be treated for 6 months to a year while learning to cope with the changes associated with a stroke. Re-evaluation by your healthcare providers may determine when medication can be discontinued.

Emotional changes that may occur include:

Anxiety: Feeling uneasy or anxious for no reason.

Depression: It is normal to feel sad after a stroke. Being dependent on others may cause frustration. This may lead to feelings of helplessness, hopelessness and poor self-esteem. Depression may be caused by chemical imbalances in the brain. But there is a deeper sadness that may show up right after a stroke, or many weeks later. Clinical depression is defined as a disorder characterized by inability to concentrate, insomnia, loss of appetite, anhedonia, feelings of extreme sadness, guilt, helplessness, and thoughts of death.

Emotional lability (limited control over feelings and reactions): Laughing, crying, or becoming upset more easily, or at the wrong times.

Loss of inhibition: Temper outbursts (verbal or physical) may be the only way to express frustration at being unable to do simple, familiar things.

Mood swings: Fluctuating between feeling happy, sad or angry without warning. Family members will need to be understanding and patient. Mood swings may improve during the recovery process.

Self-centeredness: Focusing on individual needs and inattention to caregiver or family.

IMPORTANT:

Depression is treated with medicine, counseling or both. If help is not requested there may be needless suffering and stroke recovery may be more difficult or prolonged.

The doctor should be contacted right away for symptoms of:

- Feeling sad, blue or down in the dumps
- Losing interest in things previously enjoyed
- Feeling sluggish, restless or unable to sit still
- Feeling worthless or guilty
- Experiencing increased or decreased appetite or weight
- Cognitive problems such as difficulty concentrating, thinking, remembering or making decisions
- Trouble sleeping or sleeping too much
- Losing energy or feeling tired all the time
- Headaches
- Aches and pains
- Digestive problems
- Sexual dysfunction
- Feeling Pessimistic or hopeless
- Anxiety or excessive worry
- Relationship problems with family, friends or caregivers
- Difficulty with self awareness-not acknowledging stroke or understanding the deficits that are clear to others
- Thoughts of death or suicide

CHAPTER THREE: Preventing Future Strokes

Patients who have had a stroke are at increased risk of having another stroke. Therefore, it is very important to understand and control personal risk factors. Some risk factors for stroke-including age, gender, race and family history, are not within our control. However, some very important risk factors are controllable. Listed here are the most common risk factors for stroke:

1. High blood pressure is often called the “silent killer” because it may cause no symptoms and is a risk factor for strokes, heart failure, heart attacks and sudden death.

Goal: Maintain a blood pressure less than 120 (top/systolic) and less than 80 (bottom/diastolic).

Know your blood pressure and monitor at home if advised by a doctor. Maintain healthy eating and exercise habits and take any blood pressure medications as prescribed.

2. Tobacco use is associated with a shortened life span and heart disease as well as stroke.

Goal: Stop smoking. This is not an easy change to make, but the potential benefits are worth the effort. Ask a

healthcare provider for information on programs that may help. Contact Berkshire Medical Center's Tobacco Treatment Program at (413) 499-2602.

3. Diabetes Mellitus leads to circulatory issues and heart disease which are risk factors for stroke.

Goal: Work with doctors to manage diabetes, with a goal HgA1c of < 7% for most patients.

4. High Cholesterol leads to plaque buildup making arteries narrower and stickier, allowing blood clots to form.

Goal: Good cholesterol (HDL) of 40mg/dL or more.
Bad Cholesterol (LDL) of \leq 70mg/dL.

5. Physical Inactivity and Obesity increase risk for many diseases including stroke.

Goal: Get at least 30 minutes of physical activity on most days of the week and maintain a healthy weight. Work with a doctor on reaching ideal weight and exercise goals.

6. Excessive Alcohol intake can increase risk for stroke and heart disease.

Goal: No more than 1 drink per day for women and 2 drinks per day for men. A drink is defined as a 12 ounce beer, 5 ounce glass of wine or 1 ½ ounces of 80 proof liquor.

Other risk factors include atrial fibrillation, preexisting cardiovascular disease, blood disorders and use/abuse of drugs. Please follow doctor's recommendations.



Jeffrey Grey

Hemorrhagic Stroke Survivor

CHAPTER FOUR: Hospital Care

Stroke Centers

To ensure the best stroke care it is important for patients to be transported to a stroke center. Primary stroke centers are hospitals that are often designated by public officials to provide first line stroke care. They are able to accept patients by ambulance and have a specialized stroke team to rapidly evaluate and treat suspected stroke patients. They can provide diagnosis and treatment including giving t-PA (within 3-4 ½ hours of onset of symptoms) if appropriate, blood pressure control, management of brain hemorrhage and access to intensive care.

Berkshire Medical Center and Fairview Hospital are designated Primary Stroke Centers by the Department of Public Health of the Commonwealth of Massachusetts. BMC is a comprehensive Primary Stroke Center that is staffed and equipped to diagnose and treat stroke patients and see them through rehabilitation and all stages of their recovery. Through a specialized telecommunication system called “telestroke”, doctors at Fairview Hospital can directly consult with stroke specialists at BMC. These stroke

specialists can see and talk to patients and families live on a TV screen. This system allows patients at both hospitals to receive immediate care and treatment with t-PA, if appropriate.

How is a stroke diagnosed?

Doctors in the emergency room use a number of tools to evaluate a patient who is believed to be having a stroke. A medical history, a physical exam, blood tests, and x-ray studies including Computed Tomography (CT), Magnetic Resonance Imaging (MRI), and angiography help doctors to determine the type and location of the stroke and why the stroke happened.

Rapid, accurate diagnosis of stroke is critical to saving brain function. The type of stroke determines the type of treatment, and most treatments need to be started within three hours of the onset of symptoms in order to be helpful.

How is a stroke treated?

Acute Treatment: The first type of treatment for ischemic stroke, if there are no medical contraindications, is giving clot-busting drugs such as tissue plasminogen activator (t-PA). T-PA is given in the vein and dissolves the clot in order

to try to restore blood flow to the brain. It must be performed within three to four and one-half hours of the onset of stroke symptoms. It is only effective for ischemic strokes. Emergency treatment for hemorrhagic (bleeding type) strokes includes blood pressure control, stopping the effect of blood thinning medications, and if necessary, neurosurgical intervention.

Treatment for preventing stroke: Doctors may prescribe medication or recommend surgery or other treatments to help prevent a first, or an additional stroke. The goal is to reduce stroke risk factors by treating high blood pressure, high cholesterol, atrial fibrillation, heart disease and carotid artery disease. The most important of these treatments are:

- **Hypertension (blood pressure control):** This is the most important way to reduce stroke risk. Taking medications as prescribed and following any diet, exercise, or other advice from a healthcare provider. A doctor may recommend monitoring blood pressure at home and keeping a log.
- **Anticoagulation/antiplatelet medication:** Anticoagulants thin the blood, and antiplatelet medications prevent formation of blood clots. It is important to take these medications exactly as prescribed by a doctor, to keep

follow-up appointments as directed, and to report any side effects immediately.

- **Other medications:** Healthcare providers may also prescribe medicine to manage cholesterol, diabetes, or other medical conditions that are risk factors for stroke. These should be taken as prescribed.
- **Surgery and other procedures:** There are some operations that may be appropriate to reduce risk of having another stroke. Carotid endarterectomy and other blood vessel procedures may help reduce the risk of another ischemic stroke.
- **Carotid endarterectomy:** The carotid arteries, which are located in the sides of the neck, provide blood to the brain. If they become clogged, blood flow to the brain may be disrupted and a TIA or stroke may result. Carotid endarterectomy is a surgical procedure to remove plaque from the carotid arteries and restore blood flow to the brain.
- **Angioplasty and stenting:** Doctors introduce a small tube called a catheter through a vein and advance it to the site

of the blockage. A wire mesh tube called a stent is placed in the vessel to keep it from narrowing.

A doctor will recommend which, if any other therapies may be appropriate and will explain the procedures in more detail.

Swallowing Problems

You may have trouble swallowing after a stroke. If you have a swallowing problem you may:

- Cough or choke when eating or drinking.
- Have difficulty managing liquids or chewing foods.
- Need extra time or effort to eat.
- Get food into your airways or lungs (aspiration).
- Develop pneumonia
- Lose weight or become dehydrated.

A referral to a speech/language pathologist (SLP) may be ordered to evaluate and help treat swallowing problems.

Your SLP will talk with you about the problems you are having. Your SLP will examine the muscles of your mouth and watch you swallow. You may be asked to try different

foods and liquids. This will help your SLP learn what is happening when you swallow.

You may have other tests to give your SLP more information about your swallow. If you don't understand what is going to happen or why, ask your SLP.

There are many ways to treat swallowing disorders. What works best for one person may not work for someone else. Treatments include:

- Different head and mouth positions to help you swallow safely.
- Exercises to help swallowing muscles work better.
- Finding a diet of foods and liquids that are easier to swallow.

In some cases, it is not safe to eat or drink anything. A feeding tube may be recommended for such severe swallowing problems.

The ability to swallow may return during recovery. The speech-language pathologist will provide updates on progress.

CHAPTER FIVE: Rehabilitation

The Process

The recovery process varies with each individual, and the degree of recovery can be very different for people with a similar brain injury. However, most patients generally recover at a faster rate within the first 3 months after having a stroke, and can continue to improve for years.

After the initial period of recovery the brain swelling subsides, the brain enlists the help of undamaged areas to compensate for lost function. As this process takes place, many stroke survivors experience some recovery of lost abilities.

This is where rehabilitation plays an important role in your recovery. The general goals of rehabilitation are to help you rebuild your physical strength, relearn skills and rebuild your confidence that you may resume your daily activities.

Depending on what you need in order to remain independent, a rehabilitation plan may focus on some or all of the following areas:

- **Self-care skills** such as feeding, bathing, and dressing
- **Mobility skills** including getting out of bed, standing, and walking, or using a wheelchair
- **Communication skills** such as listening, speaking, and written language
- **Cognitive skills** such as attention, memory, and problem solving
- **Social Skills**
- **Emotional Skills** that will help you with understanding and dealing with the changes that have occurred since your stroke

Your rehabilitation begins as soon as your doctor determines that you are well enough and strong enough to undertake and benefit from a program. It often begins in the acute care hospital where you first recovered from your stroke. From there, you may have to go to a specialized rehabilitation hospital or skilled nursing facility, depending on your needs. If you are able to return home from the acute care hospital after your stroke, continued rehabilitation services may also

be provided to you at an outpatient facility or in your own home.

Rehabilitation can be a long process, requiring a positive outlook and a team approach that may include family and friends, a physiatrist (a doctor who specializes in rehabilitation), nurses, physical therapists, occupational therapists, speech therapists, social workers, psychologists, vocational rehabilitation counselors, and many others. The members of this rehabilitation team are committed to helping you regain as much independence as possible. Do not hesitate to ask for help at any point during your recovery if you feel sad, depressed, or helpless.

Discharge Planning

You, your family/friends, and hospital staff all participate in planning for your discharge. This planning is an ongoing process, throughout your stay in the acute care hospital. You and your family/friends will decide on recovery goals and the hospital staff can provide a list of resources to help aid your recovery.

Possible discharge options include:

Inpatient Rehabilitation: Berkshire Medical Center offers an acute rehabilitation program which provides 24-hour nursing care; physician care; and daily physical, occupational, and speech therapy as needed for patients who qualify.

Skilled Nursing Facility: Nursing facilities provide rehabilitation programs for patients who still may require 24-hour nursing care, but do not require daily physician visits.

Home Services: Visiting nursing and therapy services occur at your home and can take place once a week to a few days per week. You may continue to regain function and independence within your own home environment.

Outpatient Therapy: This may be provided for people who are at home and are able to travel in the community. Physical therapy, occupational therapy, speech/language therapy and audiology services are available if ordered by your doctor. You may continue to work towards your goals for recovery.

Changes at Home

Your home setting may need to be altered in order to meet your needs in the following areas:

Safety: To prevent falls, you may need to ensure that your home is not cluttered and that throw rugs are removed or secure.

Accessibility: You may have to install safety railings in your bathroom, by your steps, or other areas of your home. You may also have to have a ramp installed if you are not able to negotiate the steps into your home.

Lifestyle Changes

Many lifestyle changes may need to occur to meet your needs after your stroke.

These may include:

- **Medications:** After a stroke, many patients may need to take more medications than previously. It is important for you and/or your caregiver to understand what each medication is used for, how to take that medication, and its potential side effects. Do not hesitate to ask your healthcare provider or pharmacist if any questions or concerns should arise.
- **Diet:** It is important to take in a balanced diet of whole grains, vegetables, and fruits. Please talk to your healthcare provider or dietician on how best to optimize

your diet after your stroke. Many patients may need to monitor their diet for health reasons such as high cholesterol or diabetes.

- **Sexual Activity:** It is rare that medical concern would keep stroke survivors from sexual activity. However, you may have fear and anxiety about how you look, the changes in your relationship, or possible rejection that keep you from being intimate with your partner. Talk with your partner about how you feel and how the two of you can become close again. Talk with your doctor if you are having intimacy concerns.
- **Driving:** It is important to talk with your healthcare provider before returning to driving. If necessary, your doctor may have you evaluated by a “Driver Rehabilitation Service (DRS)” to ensure that you have the ability to safely continue to drive. If you are unable to drive, you may seek other methods of transportation such as:
 - Riding with family and/or friends
 - Utilizing shuttle buses or vans
 - Accessing public transportation such as taxis, buses, trains, or subways



Some members of the **Stroke Support Group** at the
Center for Rehab in the **Medical Arts Complex**

CHAPTER SIX: Preparing for Caregiving

If you are going to be a caregiver, think about your role before you start. Ask yourself these questions:

- Am I ready to work with the person on stroke recovery?
- What are the stroke survivor's needs?
- Who can best help meet the stroke survivor's needs?
- Who will be the main caregiver?
- Will this need to be scheduled around my work or other activities?

You will have time before discharge to talk to staff about caregiving and about making a plan.

Being a caregiver means you need to take care of yourself, too. Take time each day to be by yourself. Don't be afraid to ask the stroke survivor's family or friends for help. Ask about community agencies, volunteer groups, churches, respite care or nursing agencies that can help you. Enjoy hobbies or friends. Learn all you can about stroke: symptoms, risk factors, treatment and care. Check out education classes or information in your community.

Support groups are available for stroke survivors and caregivers. Stroke survivors and their family members

and/or caregivers are welcome to attend. Come share the challenges and the successes of life after stroke. Be a source of support or receive the encouragement you need.

The Berkshire Medical Center Stroke Support Group is run by Irene Wolcott, SLP and David Wasielewski, stroke survivor, and meets on the first Tuesday of each month from 3:00-4:30pm on the fifth floor of the Medical Arts Complex in the Center for Rehabilitation's outpatient gym. They will continue to offer the opportunity to hear a number of speakers on a variety of topics of interest. We hope that these will enhance your understanding of stroke risk factors, prevention and treatment.

Please call the Outpatient Department at the Center for Rehabilitation with questions at (413) 447-2230.

We look forward to seeing you!

Role of Family and Friends

Doctors and hospital staff are not the only ones who will take part in rehabilitation. The role of family and friends is crucial. They need to know what the patient is going through and how the stroke has affected them. The change may be easier if family and friends know how to handle problems

that arise after the patient leaves the hospital. Family and friends can also help by giving their support and encouragement.

Family and friends can help by:

- Dealing with their own reactions (including anger, anxiety, resentment, etc.)
- Knowing that progress can be slow.
- Visiting and talking with the stroke survivor
- Letting the stroke survivor know they are still needed and are important
- Supporting rehabilitation decisions
- Becoming educated about stroke and recovery
- Asking to go along to therapy sessions
- Showing confidence in improvement
- Taking care of themselves by eating well, getting rest and doing things they enjoy
- Sharing tasks
- Being realistic in knowing recovery limit

Other Resources

Online National Resources:

- National Stroke Association
1-800-787-6537
www.stroke.org
- American Heart Association/ American Stroke Association
1-800-937-0944
www.americanheart.org
www.strokeassociation.org
- Smoking Cessation, National Cancer Institute
1-800-784-8669

Local Resources:

- Tobacco Treatment Program at Berkshire Medical Center:
413-499-2602
- Berkshire Medical Center Website: Click on Neurology and Neurosurgery, then click on Stroke Care
Berkshirehealthsystems.org
413-447-2000

Glossary

During the hospital stay, many medical words are used to talk about stroke recovery and rehabilitation. This is a quick guide for the words heard most often.

ADL: Activities of Daily Living. This includes getting dressed, bathing, personal hygiene and eating.

Agnosia (ag-NOZ-e-a): Failure of the senses to recognize familiar objects.

Aneurysm (an-Yer-izm): A bulge that forms when an artery wall becomes weak.

Anomia: Inability to remember and say names of people and things.

Aphasia (a-FAY-zha): Inability to talk or understand speech. There may also be problems reading and writing.

Apraxia (A-praks-e-a): Inability to do purposeful movements even though muscles or senses are working normally.

Aspiration (ah-spur-A-shun): Swallowing food, liquid, or other objects into the airway or “wind pipe”.

Ataxia (A-taks-e-a): Lacking coordination in arm or leg movements or walking.

Bed sore (pressure sore): An area of red skin or an open area caused by constant pressure. To prevent this skin must be kept dry. Change lying or sitting positions often.

Blood pressure: The force of blood against the artery walls. Each time the heart pumps, blood pressure goes up. This is the upper number (systolic) of a blood pressure reading. Each time the heart relaxes, blood pressure goes down. This is the lower number (diastolic) of a blood pressure reading.

Body scheme: How one perceives the position of the body and the relationship of the body parts.

Caregiver: The person who mainly cares for the patient; this may be a family member, a friend or a professional.

Cerebrovascular accident: A stroke results when blood and oxygen flow to the brain is stopped or has been interrupted. This happens because of a burst or blocked blood vessel. Affected nerve cells in the brain stop working. (See stroke.)

Cognition: Knowing, understanding, judging, making decisions and being aware.

Compensation: Learning how to do a task a different way.

Contractures: Less motion at a joint because of tighter muscles and soft tissues.

CT (CAT) scan: A special X-ray that uses computers to find abnormal areas in the body. The CT scan will show the area and type of brain injury.

Deficit: Lacking a skill or ability.

Denial of illness: Inability to admit or recognize there is a problem, even when there are clear symptoms.

Diplopia (Dip-LOHP-ee-a): Seeing double (double vision).

Dysarthria (dis-AR-three-a): Weakness or paralysis of muscles in the face, mouth, neck and/or throat that may lead to speaking problems.

Dysphagia (dis-FAY-ja): Problems or discomfort swallowing. This can also be the inability to swallow.

EEG (electroencephalogram): A recording of the electrical activity of the nerve cells in the brain. This test can help find how extensive brain damage is and see if the patient is having seizures.

EKG (electrocardiogram): A recording of the electrical current made by the heart.

Emotional lability: Quick shifts from one emotion to another.

Expressive aphasia (a-faz-ee-a): Inability to express one's self in words.

Field cut: Blindness in part of the visual field. This involves one or both eyes and may be permanent. The patient may be able to learn to compensate for this loss.

Figure ground: Being able to pick out a design, word or object on a cluttered background.

Flaccidity: Weak or no muscle tone.

Hemianopia/ Hemianopsia: See Field cut.

Hemiparesis (hem-ee-par-EE-sis): A mild to moderate weakness on one side of the body. This often affects the hand and arm more than the leg.

Hemiplegia (hem-ee-PLÉ-ja): A paralysis on one side of the body. This is a severe weakness of, or inability to move the affected and/or leg. This often affects the hand and arm more than the leg.

Hemorrhage: Bleeding from the blood vessels.

Homonymous hemianopsia: Blindness in the right or left visual fields of both eyes.

Hypertension: High blood pressure.

Incontinence: Being unable to control bowel and/or bladder.

International Normalized Ratio (INR): A blood test that measure how long it takes for blood to clot. This is used for people who take Coumadin ® (an anti-clotting medicine).

Kinesthesia: Knowing where body parts are moving.

MRI (magnetic resonance imaging): A scan which uses magnetic fields to look at the body. This is used to see the extent of an injury.

Neglect: Not paying attention to surroundings and to the weak or paralyzed side of the body.

Nystagmus: Fast, jerky movements of the eye.

Orientation: Being aware of time, person, place and purpose.

Paralysis: Being unable to move a muscle. This may be short or long-term.

Perseveration: Repeating a movement or word over and over.

Physiatrist (fizz-EYE-a-trist or fizz-ee-at-trist): A doctor who diagnosis and treats people in three areas:

- Severe impairments: stroke, spinal cord injuries, brain injuries, amputations, back problems and burns.
- Musculoskeletal: work-or sports-related injuries, arthritis and low back pain.
- Electrodiagnostic: muscle and nerve damage.

Proprioception: knowing where body parts are in relationship to surroundings.

Protime (PT): A blood test that measures the time it takes for blood to clot. This is used for people who take Warfarin (an anti-clotting medication).

Range of motion: Range of movement in each joint.

Rehabilitation: Regaining lost or impaired skills to the highest level possible. This can include walking, talking, getting dressed and moving the side of the body affected by the stroke.

Saccadic (suh-CAD-ick) eye movements: Ability to look at an object and quickly move eyes to look at another object. This is common during reading: looking at one to three words and moving to the next set of words.

Seizure (SEE-zur): A quick and unexpected loss of consciousness, awareness and/or motor control.

Spasticity: Extra tension in a muscle that causes stiff and awkward movement. This may limit the full range of motion.

Spatial relationship: Ability to see and compare the size, shape, color, etc., of two or more objects.

Splint: A plastic board used to support, protect or position a hand, arm or leg. It can be removed.

Stent: An artificial material put in an artery to keep it open.

Stroke: An injury to the brain caused when blood flow is stopped or interrupted. (See Cerebrovascular Accident.)

TEDS (Anti-embolism stockings): Elastic stockings worn to help support the leg muscles. This helps improve the blood flow back to the heart.

Tone: The tension or stiffness of a muscle.

Transfer: Moving from one body position to another (such as from a bed to a wheelchair) with or without help from someone else.

Transient Ischemic Attack (TIA): A “mini-stroke” that usually lasts a few minutes. A TIA can last up to 1 hour. There may be stroke symptoms, a warning sign of stroke, prompting a call to 911.

Tremor: A movement of the arm or leg without control.

Visual Tracking: Inability to pay attention to a visual area or to one side of the body.

Visual Attention: Ability to focus on an object.

Visual Convergence: Ability to move both eyes at the same time inward (cross-eyed) to focus on a close object.

Visual field: The area of space that can be seen. The normal visual field is about 60 degrees up, 60 degrees in, 70-75 degrees down and 100-110 degrees out.

Visual pursuits: Ability to use the eyes to follow an object side to side, up and down and diagonally, etc. Eye movement should be smooth and move at the same speed as the object.

Visual scanning: Ability to smoothly and precisely scan the eyes in a line from point “A” to point “B”.

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