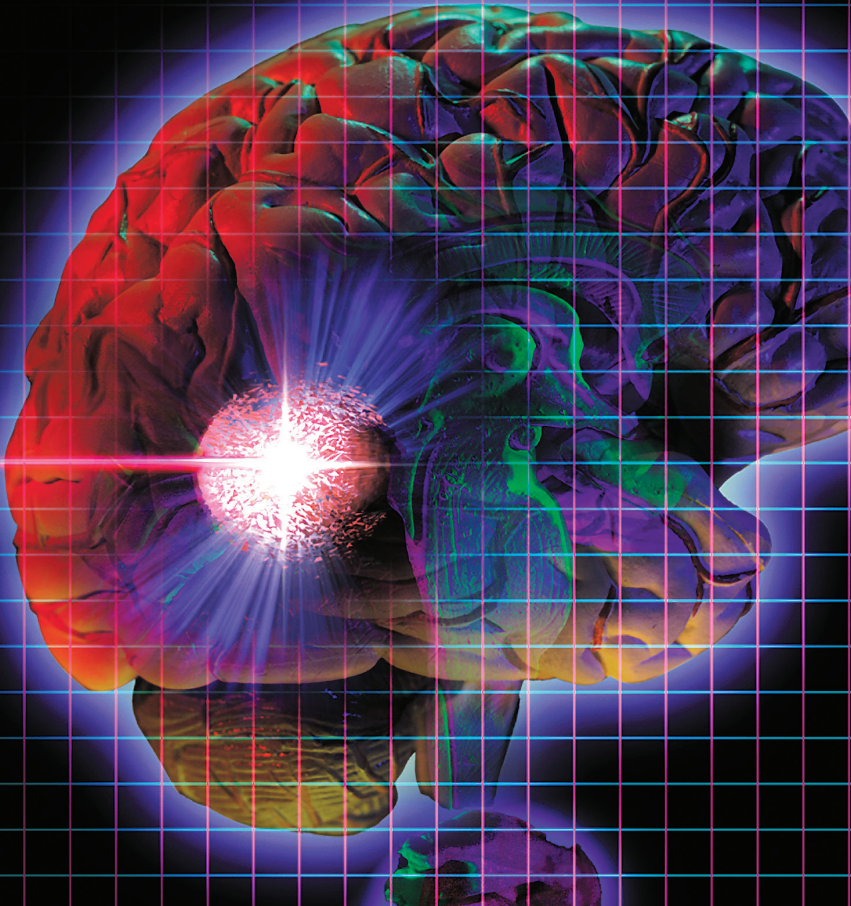




PennState Health
Milton S. Hershey
Medical Center

Stroke

PATIENT & FAMILY GUIDE



SPOT A STROKE

BE FAST

BALANCE

LOSS

EYESIGHT

CHANGES

FACE

DROOPING

ARM

WEAKNESS

SPEECH

DIFFICULTY

TIME

TO CALL 911

For more information go to PennStateHershey.org/stroke



**The Joint
Commission**



**American Heart
Association
American Stroke
Association**

CERTIFICATION

Meets standards for

Comprehensive Stroke Center

With a stroke, minutes matter, and so does the hospital.

Welcome to Penn State Stroke Center, designated a Comprehensive Stroke Center by The Joint Commission. The Stroke team has demonstrated excellence across the continuum of care for all patients—particularly those with complex strokes. This certification independently recognizes the expertise to provide advanced-level interventions for both ischemic and hemorrhagic stroke.

Penn State Stroke Center is a resource for other local hospitals and primary stroke centers, as well as for patients in need of complex interventions for stroke prevention and treatment.

The Stroke team is available 24-hours-a-day, seven-days-a-week. The dedicated Neuroscience Intensive Care Unit with highly skilled nurses, specially-trained stroke neurologists, and internationally recognized neurosurgeons will provide you the best care.

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My Stroke Sheet

I was admitted on:

The type of stroke I had was:

My stroke doctor is:

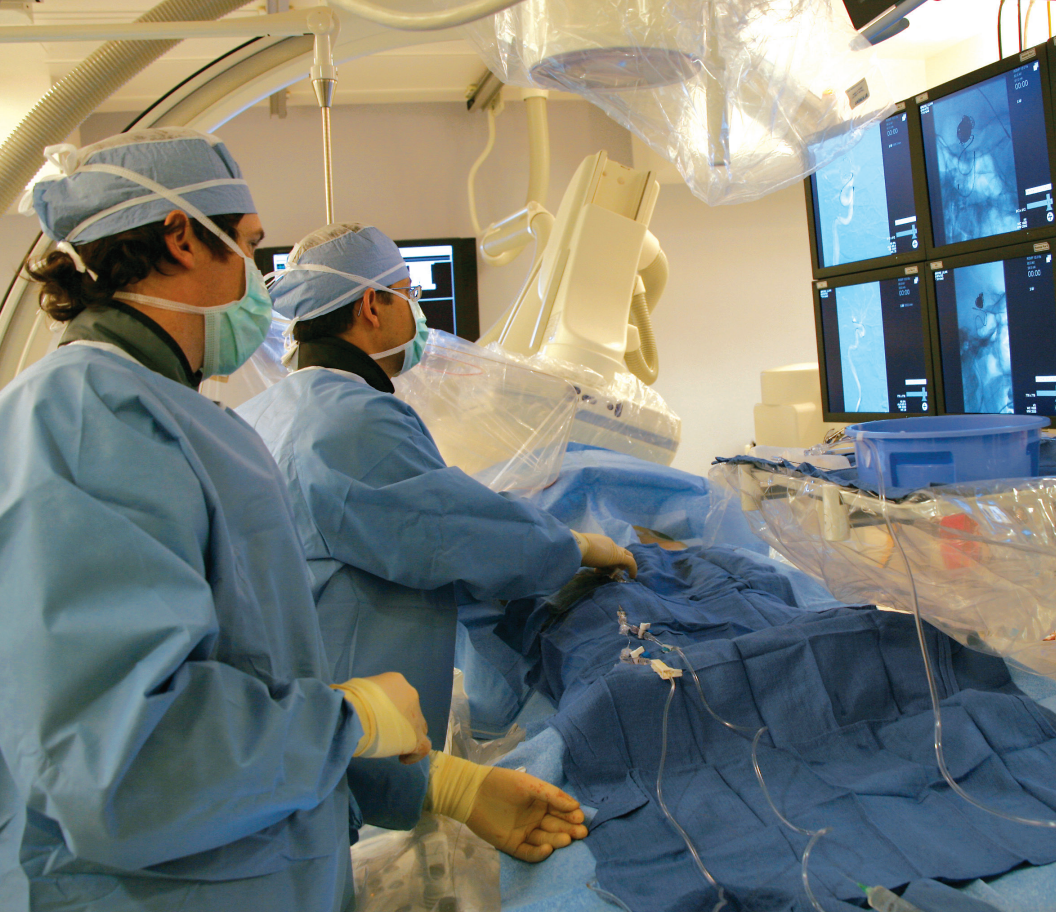
Dr. _____

My risk factors are:

(check box in front of each)

- Alcohol use *(pg. 9)*
- Illegal drug use *(pg. 9)*
- Atrial fibrillation/flutter *(pg. 9)*
- Heart disease *(pg. 9)*
- High cholesterol *(pg. 10)*
- Diabetes *(pg. 10)*
- High blood pressure *(pg. 10)*
- Oral contraceptive use *(pg. 10)*
- Sleep apnea *(pg. 11)*
- Smoking *(pg. 11)*
- Obesity/overweight *(pg. 11)*

The signs and symptoms of my stroke were:



What is a stroke?

Brain cells need a constant supply of blood, oxygen and nutrients to survive. A stroke occurs when a blood vessel is blocked or ruptures, preventing the blood, oxygen and nutrients from supplying the brain. It is important to act fast when treating a stroke because two million brain cells die each minute.

Ischemic strokes are the **most common**—87 percent of strokes are this type. An ischemic stroke happens when a blood clot blocks a blood vessel in the brain. The brain tissue above the clot will start to die.

This can happen in two ways:

Thrombotic, when the clot forms inside the vessel in the brain.

Embolic, when the clot forms somewhere else in the body and travels to the brain.

TREATMENT OPTIONS FOR ISCHEMIC STROKE

A special “clot-busting” drug, intravenous tissue plasminogen activator (commonly known as IV tPA) breaks up and dissolves blood clots in the first few hours after a stroke.

Endovascular intervention (clot retrieval and stenting)—A minimally invasive procedure that opens the artery either by removal of the clot or by supporting the artery walls.

Carotid endarterectomy—Plaque buildup is removed from inside the carotid artery, improving blood flow to the brain.

HEMORRHAGIC STROKE

There are two types of hemorrhagic strokes: subarachnoid hemorrhage and intracerebral hemorrhage.

Subarachnoid hemorrhage may occur from a ruptured cerebral aneurysm (a blood-filled out-pouching of an artery wall) or from another type of ruptured abnormal blood vessel.

Intracerebral hemorrhage occurs when a blood vessel in the brain breaks open and blood leaks into the surrounding brain tissue.

TREATMENT OPTIONS FOR HEMORRHAGIC STROKE

Surgical interventions:

Craniotomy and clipping – The skull is opened and a clip is placed at the base of the aneurysm to prevent blood from filling the bubble and rupturing.

Microsurgical removal of arteriovenous malformation (AVM) – The skull is opened and the AVM is located and surgically removed.

Endovascular interventions:

Coil embolization – Platinum coils are delivered through a catheter into an aneurysm bubble to block blood flow into the aneurysm.

Onyx™ glue embolization – A dense, thick liquid is used to plug the blood vessels feeding into and draining out of a brain blood vessel malformation.

Pipeline™ Embolization Device – A tightly woven network of mesh-like stents is placed in the artery and diverts blood flow away from the aneurysm, causing the aneurysm to clot off.

Radiosurgery (Gamma Knife®) – This non-invasive treatment uses high-powered radiation beams to treat and eliminate arteriovenous malformations. Radiosurgery can also be used to treat certain types of tumors.

TRANSIENT ISCHEMIC ATTACK (TIA)

A transient ischemic attack (TIA)—sometimes called a mini stroke—occurs when a blood clot blocks an artery for a short time. The symptoms are similar to those of an ischemic stroke, but they usually last only a few minutes. TIAs are strong predictors of future strokes. Thirty-three percent of patients with a TIA will have a stroke in the future.

Stroke Risk Factors

Some factors that contribute to stroke are uncontrollable, including:

Age

Most strokes occur in people over age 55.

Gender

Men have a slightly elevated stroke risk.

Health History

A previous stroke, heart attack or transient ischemic attack (mini stroke) increases the likelihood of another event.

Heredity

The chances of a stroke increase if a parent, grandparent or a sibling has had a stroke.

Race

African-Americans, Latinos and Asians are more likely to have a stroke.

Modifiable Risk Factors

Although some contributing factors to a stroke are unpreventable—such as age, family history and other medical conditions—several things can be done to decrease the chance of having another one. Your doctor or nurse will highlight risk factors that are relevant to you.

ALCOHOL AND ILLEGAL DRUG USE

Although small amounts of alcohol may help prevent a stroke, more than two drinks a day for men, and one drink a day for women increases the risk of a stroke. Check medications for any alcohol interactions. Illegal drugs—like cocaine—increase the risk for sudden heart attack and stroke.

ATRIAL FIBRILLATION AND HEART DISEASE

People with heart disease are more likely to have a stroke. About 15 percent of strokes occur in people with atrial fibrillation. Those with atrial fibrillation are at an increased risk because the heart's two small upper chambers (the atria) quiver instead of beating effectively. Blood is not pumped completely out of the chambers, so it may pool and clot. If a blood clot in the atria leaves the heart and becomes lodged in an artery in the brain, a stroke results. Adjusting diet and exercise habits along with medication can help get heart disease under control.

CHOLESTEROL

High cholesterol (total levels over 200) increases risk of stroke and heart disease. An LDL (bad cholesterol) of greater than 70 also increases the risk. Change your diet, increase activity levels and take medications to lower your cholesterol.

DIABETES

Because diabetes is often accompanied by high blood pressure, high cholesterol and obesity, the chance of a stroke is increased. Uncontrolled diabetes damages the lining of blood vessels. Keep diabetes under control and monitor blood glucose levels carefully to reduce the risk.

HIGH BLOOD PRESSURE

People with blood pressure above 130/80, known as hypertension, are four times more likely to have a stroke because it increases pressure on the blood vessels, damaging the vessel lining. Lower salt intake, take appropriate blood pressure medication, and exercise regularly. These efforts help to reduce blood pressure and help prevent another stroke.

Patients usually cannot feel when their blood pressure is high, and may be asked to monitor their blood pressure at home following discharge.

ORAL CONTRACEPTIVES

Oral contraceptives and hormone replacement therapy with estrogen can increase the risk for developing a blood clot. This risk is even higher for smokers, those with high blood pressure or cholesterol, and the overweight.

SLEEP APNEA

Sleep apnea is a sleep disorder in which a person stops breathing or breathes shallow for several seconds to minutes when sleeping. This can decrease blood oxygen levels, especially to the brain, doubling the risk for stroke. A sleep study may be recommended to determine a treatment plan. Losing weight can greatly reduce sleep apnea symptoms.

SMOKING

Smoking doubles a person's chance of having a stroke and increases the risk of a heart attack. It harms blood vessels, creates plaque and contributes to heart disease and high blood pressure.

WEIGHT

Being overweight makes the heart work harder and makes high blood pressure, diabetes and heart disease more likely. Exercise at least thirty minutes a day and reduce caloric intake to help lose weight. You should discuss your body mass index (BMI) with the medical team to assess the body's weight relative to height, which correlates with body fat in most people. The leaner you are, the lower your health risks.



FYI

80% of strokes could be prevented if these risk factors were modified.

Parietal Lobe

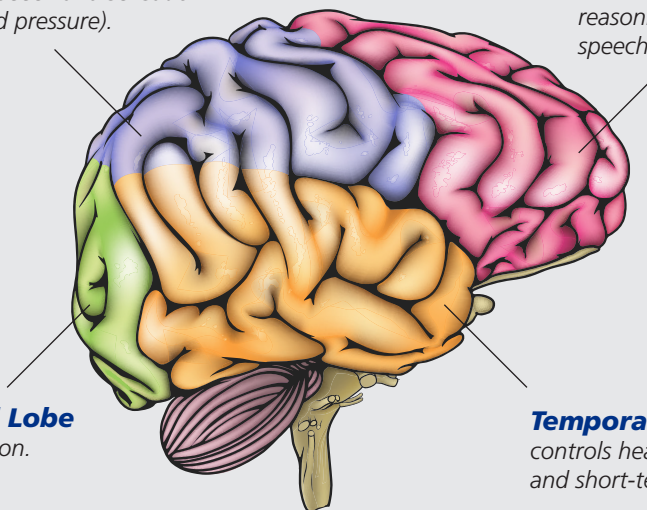
controls speech and sensation (touch and pressure).

Frontal Lobe

controls personality, reasoning, parts of speech, and muscles.

Occipital Lobe

controls vision.



Temporal Lobe

controls hearing, speech, and short-term memory.

Effects of a Stroke

A stroke can have lasting effects that vary from person to person. Outcomes depend on how long the brain was without oxygen, how quickly treatment was received and which parts of the brain were affected.

PHYSICAL EFFECTS OF A STROKE

Over time, many of these issues can improve with the help of therapy; specialized forms of therapy have been shown to be very effective in helping individuals regain strength and function following a stroke.

Physical therapists focus on muscle strengthening and mobility.

Occupational therapists focus on activities of daily living including dressing, feeding, cooking, driving and working.

Speech therapists focus on language, cognition, voice and swallowing.

Weakness (hemiparesis and hemiplegia)

Loss of strength (hemiparesis) on one side of the body is common and can affect a limb, part of the face or the whole side of the body. Hemiplegia occurs when one side of the body is paralyzed.

Vision

Changes to eyesight—such as double vision, blind spots and poor focus—are common.

Sensation

Affected areas of the body may feel numb or experience pain.

Muscle tone

The muscles in a weakened arm or leg can become loose, limp or rigid (spastic).

Balance

Survivors may have difficulty keeping their balance when they stand and walk. Special care should be given to prevent falls.

Communication (aphasia and dysarthria)

Stroke survivors who develop aphasia often have trouble understanding what other people are saying and have difficulty communicating their own thoughts through speech and writing. Patients with dysarthria are unable to speak clearly because the muscles in the face and mouth are not working properly.

Swallowing Disorder (dysphagia)

Muscle weakness in the face and throat can cause dysphagia, making it difficult to swallow food and liquids.

Neglect

A patient may unintentionally ignore or avoid using the part of their body the stroke affected. The patient is often unaware of that limb.

Pain

Though rare, nerve damage and immobilization may cause pain following a stroke.

OTHER EFFECTS

Depression

It is common to experience sadness and depression after a stroke. This can be caused by biological changes in the brain or as a psychological response to the other effects. The care team monitors for signs of depression and provides therapy.

Talk to your doctor if you:

- feel hopeless
- feel guilty
- feel irritable or restless
- have a loss of interest in activities or hobbies that were once enjoyable
- are overeating or have a poor appetite
- have difficulty falling asleep, staying asleep or sleeping all the time
- have ongoing aches and pains
- feel tired all the time
- feel sad, anxious or empty
- have difficulty concentrating or making decisions
- have thoughts of death or suicide

Feeling Tired

The physical changes to the body, new medications and difficulty sleeping may all contribute to a lack of energy following a stroke. The brain is healing, a process that requires many calories, which adds to fatigue.

Memory

Some people experience memory loss—either short- or long-term—or may easily lose their train of thought and seem forgetful.

Sexuality

Many after-effects of stroke, such as fatigue, depression and concerns about appearance, can hinder feelings about sex. However, many couples can return to an active sex life after a stroke.





Medications

You may be given several different types of medications, depending on the type of stroke and how it affects you. All medications are listed on the discharge instruction sheet and reviewed at that time. Do not hesitate to ask your care provider or pharmacist any questions you have about the new medications, and the interactions with other medications. Do not stop taking any medications without talking with your physician first. Pill boxes are available to help assist in organizing medications. Ask the unit care coordinator to provide you with one.

ANTIPLATELETS/ANTICOAGULANTS

These medications, which include aspirin, help prevent a stroke and heart attack by making it less likely for blood clots to develop.

ANTI-SMOKING MEDICATION

There are many medical therapies available to people who want to quit smoking, including pills and patches.

BLOOD PRESSURE MEDICATION

In addition to diet and exercise, blood pressure can be improved with the use of certain medications like diuretics, which lower the sodium content in the body, and beta-blockers, which improve heart rate.

CHOLESTEROL-LOWERING MEDICATION

Statins and nicotinic acid can lower cholesterol by preventing the production of bad cholesterol (LDL). Fibrates prevent your body from absorbing cholesterol in food.

DIABETIC MEDICATION

Blood sugar should be closely monitored, and doses of insulin and oral medications should be adjusted to keep blood glucose in an ideal range.

SEIZURE MEDICATION

If you have a past history of seizures or had one during your stroke, medication can help prevent another one. This medication may only be a temporary step during recovery from the stroke.

VASOSPASM MEDICATION

This medication can prevent arterial spasm which keeps blood vessels open, creating a better path for blood flow.

Resources

Penn State Health Milton S. Hershey Medical Center has resources available to help stroke patients in their recovery. For general information or appointments, call the 24-hour CareLine at 1-800-243-1455 or 717-531-6955.

STROKE SUPPORT GROUP

This group meets the second Wednesday of each month at 3:30 p.m. Penn State Rehabilitation Hospital, 1135 Old West Chocolate Avenue, Hummelstown. For more information, call 717-531-7875.

REHABILITATION

For some patients who have had a stroke, an inpatient rehabilitation hospital stay is the best option to progress and reach goals in mobility, speech, daily activities and brain function. During your stay at Penn State Health Milton S. Hershey Medical Center, your care team will speak with you about available rehab options, as well as if inpatient rehabilitation is the next step in your recovery.

Penn State Health Rehabilitation Hospital, which is jointly owned and operated by Penn State Health Milton S. Hershey Medical Center and Select Medical, is conveniently located just over a mile from the the Hershey Medical Center campus in Hershey, Pa. Recently, the hospital received CARF International accreditation for its specialty stroke program. The prestigious three-year accreditation demonstrates Penn State Health Rehabilitation Hospital's commitment to continually enhance the quality of its services and programs with a focus on patient satisfaction and outcomes.

Under the stewardship of Penn State Neurology, the hospital's stroke rehabilitation program is designed to help

patients achieve the best possible outcome after they leave the Medical Center. Teams of highly trained physicians, nurses and therapists specializing in stroke care provide tailored treatment to optimize patient recovery. For those patients requiring additional therapy following their discharge from inpatient rehabilitation, the Rehabilitation Hospital also offers a Comprehensive Day Program.

For more information:

Penn State Health Rehabilitation Hospital 1135
Old West Chocolate Avenue, Hummelstown, PA 17036
717-832-2600 | psh-rehab.com.

Social workers provide services both in the hospital and the community setting. Social workers are available to you and your family.

Social work can help with:

- Respite care or relief for the caregiver
- Adult day care programs
- Transportation programs
- Community resources

While in the hospital, you can request to speak with the social worker.

A Child Life Specialist is a member of the health care team with specialized training to support children and teens who have a loved one in the hospital. Regardless of age, children and teens are affected by a change in routine, separation from caregivers, and concern about their loved one. A Child Life Specialist can help in the following ways:

- Guiding adults on how to talk to children and teens about an illness or injury
- Preparing and supporting children and teens for their first hospital visit
- Providing books and resources

- Providing emotional support and coping techniques
- Helping the family with memory-making activities when a patient is not expected to survive an illness or injury

If you would like to speak with someone about this, ask a member of the medical team to place a child life consult.

PENN STATE HERSHEY OUTPATIENT THERAPY SERVICES

Upon discharge home from the acute care hospital or a rehabilitation stay, many stroke survivors require additional skilled therapy services to progress their functional mobility, activities of daily living, speech, feeding, cognition, and reintegration to community living. Our therapy services team at 30 Hope Drive in Hershey provides services in Physical Therapy, Occupational Therapy, Speech Therapy and Driver's Evaluation and Training. We have dedicated therapists who have specialization in treating patients with neurological diagnoses, utilizing skills they have gained through their careers as well as working with new technologies. The therapist along with you and your family will develop an individualized treatment plan to address your specific



FYI

Compliance means doing your part to protect your health and improve your recovery. Taking medications as prescribed is a powerful way to support your health.



concerns. Your therapist will work with you individually during your sessions, providing one on one skilled care focused on improving your independence with activities. Therapists have contact with your physicians and can communicate effectively through our documentation and communication system. You and your family can also have access to your medical records and communication with your providers through this same system, allowing continuity of care throughout your recovery. For more information call 717-531-8070.

SMOKING CESSATION PROGRAM

Hershey Medical Center has a program called *The Tobacco Intervention Program*. This group meets every Monday from 6:30pm-8:00pm at the University Fitness Center. No registration is required.

Please contact the CareLine at 1-800-243-1455 or the Pennsylvania QuitLine at 1-877-724-1090 for more information.

National Resources

The following national organizations are devoted to providing education and advocacy about stroke. These groups often have regional offices that may be able to assist in finding treatment options, connect with other survivors and provide printed materials with more information about stroke.

American Stroke Association

1-888-478-7653

strokeassociation.org

National Stroke Association

1-800-strokes

stroke.org

The Internet Stroke Center

strokecenter.org/patients/caregivers.htm

Brain Aneurysm Foundation(BAF)

https://www.bafound.org/

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CAREGIVERS: TAKE CARE OF YOURSELF

The role of caregivers is important to stroke recovery. You may be expected to help tend to the needs of a loved one by assisting with personal needs, meal preparation, transportation to doctor visits and rehabilitation, and monitoring medication and health needs.

The people closest to the stroke survivor may be the first to notice signs of pain, depression or decreased driving ability, and play a crucial role in watching for signs of another stroke. There are many organizations, like home

health services and respite care programs, that can help individuals care for their loved one. Talking to other caregivers can help. Your local American Stroke Association or the stroke survivor's care team can provide you with more information on these groups.

FAMILY CONFERENCE

Clear-cut family roles help identify who should do what and provide order and structure to what often seems to be chaos. No one should accept any role unwillingly; everyone has a right to say “no.” If you accept the role of caregiver, you should feel free to request and accept significant help from family members inside and outside the household.

Family conferences can be helpful in sorting out the expectations of each family member, including the care receiver. Family conferences are also a good way to make long-term plans for the disabled family member, for sharing information and feelings, and for planning emergency or vacation backup for the primary caregiver.

Family meetings can be awkward, especially for people who have not talked easily or openly about family matters. Talking about feelings or the need for help is difficult for many people.

Unresolved conflicts or long-standing grudges among family members can resurface. Problems between parents and adult children, siblings, spouses or even extended family members can reignite. Feel free to seek outside help to resolve old issues. Clergy, social workers or counselors are often able to help. The time spent healing wounds is worth it. The success of a caregiving plan increases when family members are able to express their feelings and help shape the caregiving plan.

ORGANIZING DETAILS

Usually a family meeting will be called either by the primary caregiver or another member close enough to see

problems that need to be resolved. One family member should take responsibility for leading the meeting and make certain everyone knows what help the care receiver needs. Family members must decide how to share responsibility for meeting these needs.

There are many ways to divide tasks: by specific need, by interval of time or by ability to provide. You might label a chart: care receiver needs, caregiver needs and resources. Then appropriately list the amounts of time, money, talent (i.e., cooking, nursing skills, companionship, transportation, etc.) and other items required under each title.

Assigning each person the responsibility for meeting one specific care need can be an effective way to divide responsibilities. For instance, a brother might arrange for transportation by getting a bus pass, arranging volunteer drivers or driving himself. Another relative might take charge of handling bills and finances. Someone else might accept responsibility for researching alternative housing options should the care receiver's needs change. With luck, some of what is needed will be volunteered without prompting.

Young children need to know how they fit in, especially if the care receiver lives or moves into their household. Children might, for example, help grandparents eat or read their mail and the newspaper to them.

Making all the major decisions involved in a care plan can be a big task. The family may consider creating several contingent care plans to choose from later, if there are changes in the patient's condition or the family's situation.

WHO IS IN CHARGE?

There is usually one primary caregiver. Unless otherwise arranged, that person coordinates the care plans decided on by the family.



CHANGING RELATIONSHIPS

Caregivers often have less time for children, parents, spouse, siblings or friends. Energy and interest for projects or activities he or she used to enjoy may diminish. As caregiver, there may be additional financial burdens and emotional changes. All these stresses affect the immediate family.

The caregiver and immediate family should discuss the anticipated changes created by having the care receiver in the patient's home. Have this talk early before tempers flare and resentment flourishes. Consider how household routines—such as preparing and eating dinner, cleaning and grocery shopping—will change.

Also consider how recreational activities and time together may change.

The caregiver, family members and the care receiver will all encounter new situations in their new roles. Working together as a family usually will be the best way to plan and work for change that will be most beneficial for all.

Feeling Frustrated

(Excerpted from “Feeling Frustrated,” Stroke Connection Magazine September/October 2004)

FENDING OFF FRUSTRATION

When you find yourself frustrated, distinguish between what you can and can't change. Trying to change an uncontrollable circumstance always produces frustration. And remember, no matter the circumstance, you do control one thing: how you respond.

TAKING A TIME OUT

Before frustration boils over, initiate an activity to help you calm down. Count to ten slowly or take a few deep breaths. If possible, take a brief walk or go to another room to collect your thoughts. Try calling a friend, praying, meditating, singing, listening to music or taking a bath.

An effective way to reduce stress and frustration is to reframe your thoughts. Cognitive therapy helps you identify unhelpful thought patterns and substitute more adaptive thoughts.



Examples of behaviors and suggestive responses:

1. **Over-generalization:** You take one negative situation or characteristic and multiply it. For example, you are preparing to go to a doctor's appointment when you discover your car battery is dead. You conclude, "Something always goes wrong."

Adaptive Response: "This doesn't happen all the time. Usually my car works just fine."

2. **Discounting the Positive:** You overlook the good things about you and your circumstances. You say, "I could do more" or "Anyone could do what I do."

Adaptive Response: "Caregiving isn't easy. It takes courage, strength and compassion to do what I do. I'm not always perfect, but I do a lot and try to be helpful."

3. **Mindreading:** You assume a friend who has not called is angry with you.

Adaptive Response: "I don't know what my friend is thinking. Maybe she did not get the message or is busy. If I want to know what she is thinking, I'll have to ask her."

4. **Fortune-telling:** You predict a negative outcome in the future. For example, you won't try adult day care because you assume your family member/friend won't enjoy it.

Adaptive Response: "I can't predict the future. He may not like it, but we won't know for sure unless we try it."

OTHERS ALSO CARE

Family and friends can and should play major roles in caring for a disabled or impaired person. This is true even if most of the care has obviously been taken on by one person.

Try to involve others early in the experience and keep them involved. You need their assistance for an occasional break. Neighbors and friends may be glad to help when asked, despite hesitating to offer. Maybe they do not know what they could do to help, or how to offer help without interfering. You may even be unintentionally discouraging them by appearing to always have everything under control, when you are really overwhelmed.

Depriving yourself of rest and recreation can sap your strength and drain emotional energy. It can create or compound tension between you and your care receiver, or among other family members.

Other than you, the patient may only see a few people regularly. He or she can also benefit from seeing and being around others while you are taking your break. A break helps patients stay “fresh” just like you. To the degree possible, it also enables them to continue with their own activities, interests and friends.

RESPIRE CARE

Ask relatives, friends, clergy or social workers for suggestions of other people who might help. If you would like specific information about respite care in your region, ask the unit social worker.

Sometimes community organizations, such as United Way agencies or information and referral services, can also help. Local colleges, churches and senior centers can also be sources of assistance.

Hospitals and nursing homes often offer respite care for short periods of up to a week, temporarily moving the care receiver into their facilities.

Adult day care centers in many communities provide the therapeutic activities, supervision and health monitoring for four to eight hours a day. Many adult day care centers take clients on a regular basis, one to five days a week.

Day care is sometimes available in private homes licensed to care for two to five people.

Home health aides and household helpers are available for hire through private businesses, hospitals or health agencies. You may want to contact your county social services office and public health agency regarding similar help.





PennState Health
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Hershey, PA 17033-0850

Stroke Program: 717-531-7875

PennStateHershey.org/stroke

