

Learning About Stroke

A Guide for Patients and Families





On the cover: DHMC patient, Darlene Orf, suffered a stroke in May of 2008. Through hard work with her rehabilitation team and the support of her family, Darlene has regained most of her function so she can enjoy spending time with her grandchildren. See Darlene's story online: patients.dartmouth-hitchcock.org/patient_stories/ps_darlene.html

Acknowledgments

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Introduction

This guide was created for adults who have had a stroke or warning signs of a stroke. We wish you success during your recovery and hope that you will find this guide helpful through your journey to healing.

What you need to know about stroke...

- Every stroke is different.
- Two people with similar strokes may be affected in different ways.
- No one is able to predict how long it's going to take, what lies ahead or how much the survivor will recover.
- Life will be changed forever in some way for the stroke survivor and those closest to them.

You are not alone: According to the National Stroke Association, stroke is the number one cause of adult disability in the US.

The most important things to remember about stroke are...

- How to recognize the symptoms and when to seek medical attention quickly.
- How to reduce your risk for stroke and prevent another stroke.
- How to manage and adapt to problems or disability after a stroke.

It is important to realize that you are more likely to have another stroke unless you make changes in your daily habits. **The good news is that there is much you can do to adapt to life after a stroke and to reduce your risk for another stroke!**

This guide offers recommendations that are based on the most up-to-date information from the American Heart Association, the American Stroke Association, the National Stroke Association and the experienced medical team at Dartmouth-Hitchcock Medical Center.

Rehabilitation programs help people to recover and maintain a healthy lifestyle through exercise, education and emotional support. Please check with your doctor or nurse to see what program is right for you. Also, please check your insurance plan to see what is covered.

We hope you will find this guide helpful in understanding your stroke and what you can do about it.

Learn more

DHMC Cerebrovascular Disease & Stroke Program:
patients.dartmouth-hitchcock.org/stroke
(603) 650-2830

DHMC Health Education Center:
(603) 650-8710

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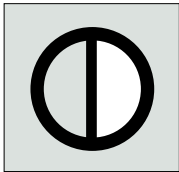
What is a Stroke?

A stroke is a brain injury that happens when a blood vessel in the brain is blocked or bursts. Without blood and the oxygen it carries, part of the brain starts to die. The part of the body controlled by the damaged area of the brain does not work properly.

Brain damage can begin within minutes, so it is important to know the signs and act FAST. Quick treatment can help limit damage to the brain and improve the chance of recovery. Time lost is brain lost!

Warning Signs of a Stroke - Act Now!

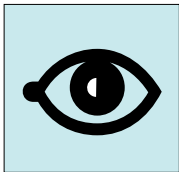
If you notice one or more of these signs in yourself or someone else, don't wait!
Stroke is a medical emergency. Call 9-1-1 immediately!



Sudden numbness or weakness of the face, arm, or leg, especially on one side of the body



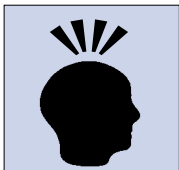
Sudden confusion, trouble speaking or understanding



Sudden trouble seeing in one or both eyes



Sudden trouble walking, dizziness, or loss of balance or coordination



Sudden, severe headache with no known cause

Stroke symptoms are usually sudden.

- Do not ignore symptoms even if they go away.
- Call 9-1-1. Care can begin as soon as the ambulance arrives.
- Do NOT drive yourself unless it is the only option.
- Check the time so you'll know when the stroke started.
- At the hospital, say "I think I'm having a stroke." This will help in getting fast treatment.

Quick medical attention is important.

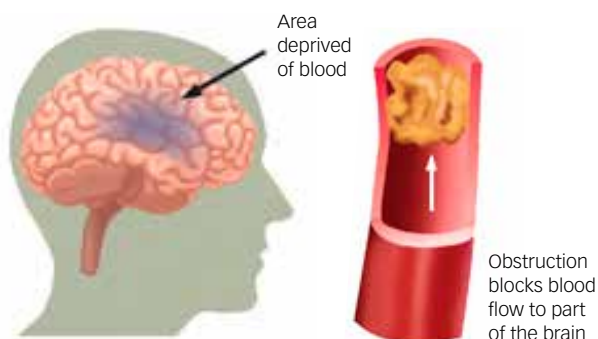
Kinds of Stroke

There are two major kinds of stroke: ischemic (i-skee-mik) and hemorrhagic (hem-er-ah-jik) stroke.

Ischemic stroke

In an ischemic stroke, a blood clot blocks a blood vessel in the brain. The clot may form in the blood vessel or travel from somewhere else in the bloodstream. This stops oxygen and nutrients from getting to your brain and cells begin to die within minutes. Most strokes are ischemic.

Treatment for ischemic stroke works to restore blood flow to the brain. If less than three hours have passed since your symptoms began, doctors may use a medication that breaks up blood clots.



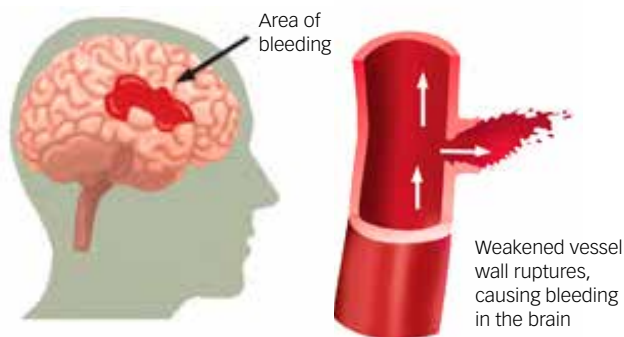
Mini-stroke

A mini-stroke is a warning sign. This is also called a transient ischemic attack, or TIA. TIAs usually don't cause damage, but they can be a serious warning sign that you are at risk of having a stroke. To prevent a stroke, make changes to lower your risk and get early treatment for a TIA.

Hemorrhagic stroke

In a hemorrhagic stroke, there is bleeding into or around the brain. These strokes are less common but more deadly than ischemic strokes.

Treatment for hemorrhagic stroke is more difficult. Surgery or other treatments to stop bleeding or lower pressure in the brain may be an option. Medications may be used to control blood pressure, brain swelling and other problems.

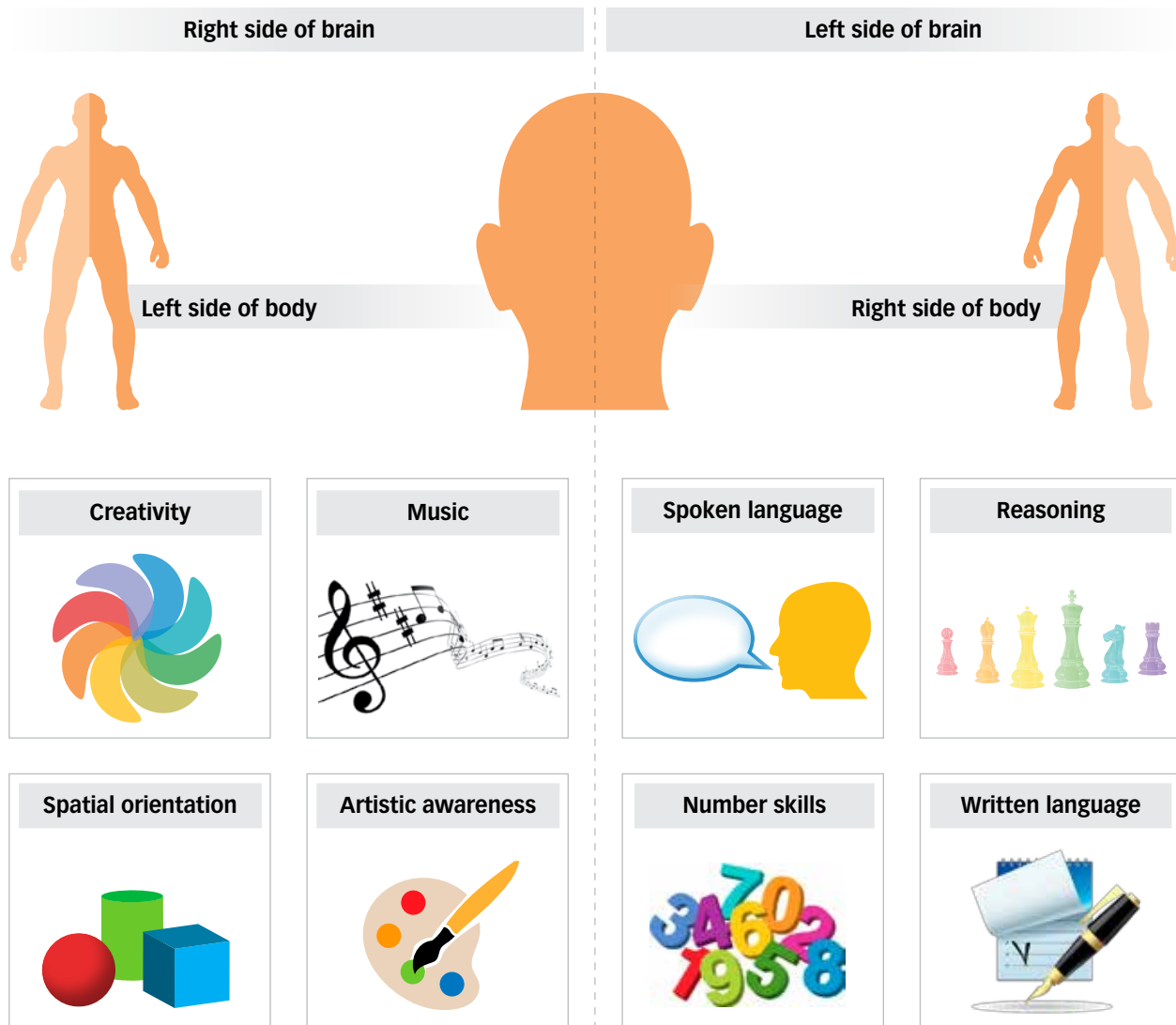


Changes to Your Body After a Stroke

A stroke damages the brain and causes a sudden loss of brain function. Because the brain controls everything we say, do and think, a stroke can have a lot of different effects.

Your brain is divided into two sides or hemispheres: the right and the left. A stroke typically occurs in either the left or the right hemisphere.

The Brain: Right Versus Left



Possible effects of a stroke on the left side of your brain:

- Weakness or paralysis on the right side of your body
- Trouble reading, talking, thinking or doing math
- Your behavior may become more slow and cautious than usual
- You may have trouble learning or remembering new information
- To finish tasks, you may need frequent instructions and feedback
- You may have trouble dealing with general concepts

Possible effects of a stroke on the right side of your brain:

- Weakness or paralysis on the left side of your body
- Vision problems
- Problems telling distance, depth, between up and down, or between front and back; this can make it hard to pick up objects, button a shirt, or tie your shoes
- Problems understanding maps
- Problems with short-term memory; you may be able to remember something that happened several years ago, but not something you did a few minutes ago
- Forgetting or ignoring objects or people on your left side (this is called “neglect”); you may even ignore your own left arm or leg
- Judgment difficulties, such as acting impulsively or not realizing your own limitations

Brain stem strokes

This is an uncommon form of stroke. The brain stem is the area at the very base of the brain, right above the spinal cord. If you have a stroke in the brain stem, you can have problems with:

- Breathing and heart function
- Body temperature control
- Balance and coordination
- Weakness or paralysis of the arms and legs on both sides of the body
- Chewing, swallowing and speaking
- Vision

Will a stroke change my life?

Any major illness will change your life. Almost all stroke survivors recover to some extent. Most stroke survivors go on to lead full, meaningful lives. Your stroke rehabilitation team, family, friends and relatives can help you make the best possible recovery.

Changes to Your Body After a Stroke (continued)

The location of the stroke in your brain determines what bodily functions will be affected.

Here are some things that may change:

Communication

This can include problems with:

- Talking and understanding what people say
- Writing and understanding written words
- Being able to name things or find the right words
- Slurring speech

Sight

This can mean:

- Seeing less on one side or the other
- Seeing less in one eye or both eyes or double vision
- Not being able to tell how far away things are
- Not being able to tell whether things are above or below, in front or behind other things

Ability to move

This may include weakness, loss of feeling or difficulty with:

- Moving parts of the body, including the mouth, arms or legs
- Swallowing and eating
- Controlling the bladder and bowels
- Knowing parts of your own body and where they are
- Coordinating movements and keeping your balance

Feelings & depression

This can include trouble with:

- Learning and remembering new information
- Following directions
- Paying attention

Many people who have had a stroke feel sad, helpless and frustrated at times. Recovering from a stroke is a big challenge. It is important to watch for signs of depression and get help.

Behavior

They may:

- Talk more than normal
- Cry or laugh for no reason
- Seem more nervous or cautious

People may sometimes act differently than before their stroke.

Judgment or thinking

Problems some people face include:

- Acting differently than usual or acting without thinking
- Being moody and feeling more sad than usual
- Not caring about things
- Having trouble understanding time
- Having difficulty with math
- Having trouble organizing things or understanding how things work

Chapter 2

Hospital and Rehabilitation

Stroke care begins as soon as you call 9-1-1 or come in to an emergency room. The next steps may include a hospital stay and rehabilitation care. To recover from a stroke you will do work to regain your abilities and then take steps to stay healthy and prevent another stroke.

Stroke Care at the Hospital

Emergency department

The doctor and nurses may take these steps in the emergency department:

- Ask for your medical history
- Ask what time you started feeling that something was wrong
- Do a physical exam to check for weakness and brain or nerve problems
- Order lab tests and a scan of the brain (CT scan or MRI)

The doctor or nurse may also:

- Monitor your heart, blood pressure and pulse
- Provide oxygen
- Give you blood pressure medicine

Treatment

Quick medical attention is important. The team may include other doctors who specialize in care of the brain such as a neurologist and a neurosurgeon.

If a stroke happened less than three hours before, the doctor may be able to use medication (called “tPA”) that restores blood flow to lower the damage and lead to a better recovery. This medication is not safe for everyone and cannot be used with a hemorrhagic stroke or with other bleeding problems.

Admission to the hospital

After emergency care, you will be admitted to the hospital so your doctors and nurses can continue your care. If tPA was given, you will receive care in the hospital’s critical care unit for at least 24 hours or until you are stable. Some people, including those with a hemorrhage, may stay in the critical care unit.

Care after admission to the hospital

Care in the hospital may include:

- Heart monitoring for 24 hours or longer
- No food or drink by mouth until your doctors are sure you can swallow properly
- IV fluids
- Bed rest for the first day then out-of-bed activities
- Medications and devices to prevent blood clots
- Aspirin or other blood-thinning medications (not for hemorrhagic strokes)

You will receive:

- Occupational and physical therapy
- Speech therapy
- Education and counseling about your stroke
- Help with planning your move from the hospital to a rehabilitation facility or home
- Special diagnostic tests may also be ordered.

There are two general types of tests:

1. Tests to produce pictures of the brain (imaging)

- A CAT or CT scan (computed tomography) uses a computer system to build detailed pictures of the brain.
- In magnetic resonance imaging (MRI), a large magnetic field and radio waves are used to make three-dimensional pictures of the brain.

2. Tests to show blood flow to or in the brain

- Ultrasound (doppler) uses sound waves to build a picture of the carotid arteries, the main arteries in the neck.
- In cerebral angiography (arteriography) a special dye is injected into the bloodstream so x-ray pictures can show the size and location of any blockages in the blood vessels in your brain. Digital subtraction angiography is a form of cerebral angiography.
- CT angiography uses an injection of dye in a vein in the arm to produce pictures of the neck and head arteries. MR angiography uses the MRI machine to create similar pictures.

3. Other tests uses to determine the cause of stroke

- At the hospital, tests may also be done to check your heart. Sometimes, these tests are used to see if blood clots have formed in the heart. One of the common heart tests is an electrocardiogram (EKG or ECG), which shows electrical activity in the heart. You might also have an echocardiogram, a test that uses sound waves to make a picture of the heart. In trans-esophageal echocardiogram (TEE), the pictures are taken from a tube inserted down your food pipe (esophagus).





Rehabilitation

Recovery from a stroke can begin right away.

In rehabilitation (or “rehab”), people undergo therapy to help them regain control of their bodies through exercise, education and emotional support.

It is important to remember:

- People who have had a stroke often recover at a faster rate in the first three months and may continue to improve for years.
- Daily rehabilitation exercises should continue when the person returns home.
- Take prescribed medications and make lifestyle changes to prevent another stroke.

How long does rehabilitation take?

For many people, rehabilitation is an ongoing process. The road to recovery can be long and frustrating. The support of family and friends is also important.

Tips for successful recovery:

- Be involved as much as possible in your care.
- Participate in a stroke rehabilitation program as soon as possible.
- Have at least one family member go to therapy sessions with you when possible.
- Ask for help if you are feeling sad, depressed or helpless.

The rehabilitation team

The rehabilitation team includes staff with many different skills working together to help you.

Type of Rehabilitation Specialist	Goal of Therapy
Doctor	Provides supervision and care for medical problems related to the stroke; oversees therapists and plans an overall coordinated therapy strategy; ensures safety of the therapy program; addresses complications from stroke that may happen during rehab therapies
Nurse	Works closely with you, your family, and the healthcare team during the initial stages following a stroke; until you can do more for yourself, nurses will help you with daily care such as taking medications, bathing, dressing and toileting; they can also help organize community services you may need after you go home
Dietitian	Plans a healthy diet
Occupational therapist	Helps you to relearn eating, drinking, dressing, bathing, cooking, reading, writing, toileting; re-educate muscles and learn to care for arms, hands and fingers; improves vision and thinking
Physical therapist	Re-teaches movement to sit, stand and walk; improves strength, balance and coordination
Physiatrist	A physician who specializes in Physical Medicine and Rehabilitation
Psychologist	Reduces some mental and emotional problems
Recreational therapist	Helps patient return to safe activities; encourages reintegration into community and family activities as well as hobbies
Speech-language pathologist	Teaches language and talking skills, as well as swallowing; helps to improve memory and cope with reduced memory
Pharmacist	Fills your prescriptions and can answer any questions you might have about your medications
Social worker	Helps you and your family deal with feelings of anger, sadness, depression, confusion and anxiety; can arrange community services, family finances, work and discharge plans

Where does rehabilitation take place?

Acute rehabilitation

Most people can benefit from a stay in a rehabilitation hospital that offers:

- 24 hour nursing care
- Daily physician care
- Three hours of physical therapy a day (on average)

Early therapy means a better chance to recover more functions.

Skilled nursing facility

Rehabilitation can take place in nursing facilities that have small rehabilitation units. This less intense rehabilitation is for people who:

- Need nursing care
- Do not require daily physician visits
- Cannot tolerate three hours of therapy a day

This is often the next step in a patient's recovery after discharge from the acute rehabilitation hospital.

Home therapy

Some people may benefit from nursing and therapy services within their own home. Usually this takes place a few days a week and can help them return to a more normal life.

Home therapy includes:

- Exercises people do on their own with a caregiver
- Family member or other caregiver who can help the patient at home, if possible



Outpatient therapy

To receive outpatient therapy, you must be able to be transported to a clinic.

During therapy, people may work to improve or regain their ability to:

- Do community activities
- Do recreational activities
- Return to driving and work

Beyond therapy

Recovery will continue beyond these services. Seek out resources in your community for recreation, exercise and socialization. A word of caution: people who lead local exercise programs may not be trained specifically to help people who have had a stroke. Joining exercise groups can be beneficial; just remember to be patient with yourself.

Palliative Care

Palliative care is often appropriate for patients who have suffered a severe stroke, especially if they are in a coma, are quite elderly or had impairment or dementia before their stroke.

Palliative care is a specialized form of medicine that aims to enhance the quality of life of patients and their families who are faced with serious illness. These providers focus on increasing comfort through prevention and treatment of distressing symptoms. In addition to expert symptom management, palliative care focuses on clear communication, advance planning and coordination of care.

Palliative care encompasses the whole self, care for the physical, emotional and spiritual needs of patients and their families so that they can live better by relieving symptoms and improving their quality of life. Receiving palliative care, which should not be confused with hospice, does not mean you have to stop treatment. The goal is to prevent and relieve your troublesome symptoms so you can get on with daily life. This type of care can be offered any time in the course of an illness and ideally should begin at the time of diagnosis.



Palliative care team

It's common practice when being treated for complicated illnesses or conditions to have several different doctors treating separate conditions. A palliative care physician often acts as the conductor, orchestrating the care between several specialists to produce care that is in perfect harmony.

Palliative care is carried out by a team of professionals who are committed to working together to provide the patient and his or her family comprehensive care. **This team may include:**

- Palliative care physicians
- Nurses
- Nursing assistants or home health aides
- Social workers
- Chaplains
- Physical, occupational and speech therapists

The Palliative Care Team can provide:

- Support to patients and their loved ones
- Help with navigating through the healthcare process
- Assistance in making healthcare choices that are right for them
- Relief of pain and symptoms of the stroke
- Emotional and spiritual support for you and your family
- Assistance with practical issues such as advanced directives or insurance
- Support services for caregivers such as respite care and grief counseling

Where you can receive palliative care

Palliative care can be given in the hospital, often times in conjunction with other therapies and treatments. It can also be delivered by an appointment in a clinic or at a patient's place of residence such as the patient's own home, the home of a family member, or a nursing home. The goals of care are the same regardless of where a patient receives it. Your doctor, case manager, nurse or social worker can direct you in finding a palliative care team near you.

Symptom management

Palliative care for an acute stroke focuses on managing your symptoms. Because the neurological system is involved in the functioning of practically every other body system, the distressing symptoms requiring treatment are wide-ranging. Immobility and other disease or conditions may cause pain as can involuntary muscle contractions or spasms related to neurological damage. Aspiration pneumonia can lead to dyspnea. Nausea, vomiting and constipation can be caused by a number of factors including medications and eating. Sores on the skin from immobility can be uncomfortable or painful. And anxiety, restlessness and depression can result from damage to areas of the brain or from the dying process itself.

Accessing palliative care at the beginning of your stroke care journey will ensure that symptoms are managed properly and will help prepare you for what lies ahead.

Going Home

Most stroke survivors are able to go home from the hospital or rehabilitation facility and do many of the activities they did before the stroke.

Going home depends on your ability to:

- To move around and communicate needs
- To follow medical advice
- To care for yourself
- To have someone who is available to help when needed

Changes in Your Home

You will need to think about making changes in your home to meet your needs.

Safety

You may need to remove throw rugs or clutter from the floor, install grab bars and take other safety measures.

Accessibility to the house

You may need to install railings on steps or a ramp.

Adaptive equipment

You may need devices to help with moving around, eating, cooking, cleaning, dressing and going to the bathroom so you can be more independent.

If being home is not safe for you, your doctor and therapists may recommend a more supportive place until you are better.

These facilities include:

Nursing facility

Usually for people who need ongoing medical attention.

Assisted living facility

For people who need assistance with taking medications, making meals and housekeeping but can live independently.



Complications from Stroke

Now that you have had a stroke, it is important to prevent complications that might lead to another stroke.

Common problems

Talk with your doctor, nurse or therapists if you have any of these or other problems. They can help you find ways to prevent or lessen them.

Blood clots: These can be prevented through blood thinning medications, compression devices and exercise.

Depression: Treating depression can improve your recovery.

Muscle tightness: Getting less exercise and moving less can lead to muscle tightness. Daily exercises can help.

Pain: Pain can often be reduced through medications and other therapies.

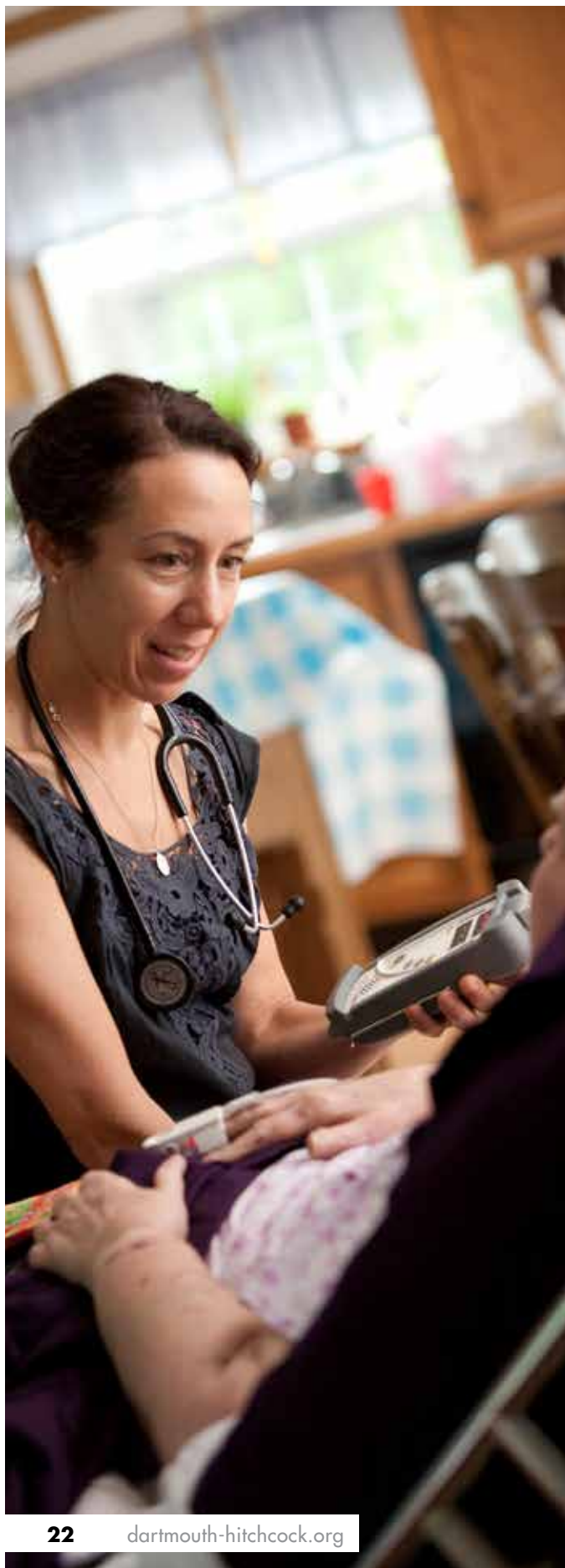
Seizures: Changes in the brain can cause convulsions. These can be treated with medication.

Urinary tract infection: This can often be prevented or treated successfully with medication.

Aspiration pneumonia: This happens sometimes with swallowing problems. Therapy can often improve your ability to swallow properly.

Bedsore and skin breakdown: Skin sores often occur if you are laying or sitting in one place for too long. This serves as another good reason to keep your body moving on a regular basis.





Communication Difficulties

After a stroke, you may have a harder time talking and understanding what others are saying. This can be very frustrating.

What you can do:

- Have a card handy to let other people know you have had a stroke and have difficulty talking
- Do the speech exercises that your therapist teaches you
- Try using a word or picture book or board
- Use gestures and point to help get your message across

How can caregivers help?

- Find a quiet place when talking with a person who has had a stroke
- Ask only one person to talk at a time
- Speak slowly and clearly
- Use your normal voice
- Avoid finishing sentences, interrupting or correcting
- Be patient—give the person time
- Pay close attention to gestures and facial expressions

Medications and Stroke

After your stroke, your doctor may prescribe medications that you have to take regularly.

It is important that you and your family understand each of these medications.

Ask your doctor:

- What is it for?
- When and how often should I take it?
- How much should I take each time?
- What kinds of side effects could it cause?
- What should I do if I have a problem taking the medications?

Bring this information with you when you go to your doctor's appointment.

There are several places you can go for answers to your questions:

1. Ask your doctor or nurse at your next visit.
2. Call your doctor's office. You may need to leave a message, but someone will call you back.
3. Ask your pharmacist or read the information sheet that he or she gives you with the prescription.

Some people find that it helps to keep a card in their wallet or purse with all their medications and doses listed. If you have to take several medications, it may help to keep track of them with a chart like the one on page 63.



Tips for Remembering to Take Your Medications

- Take medications at the same time each day (when eating or when brushing your teeth or doing other daily activities)
- Use a weekly pill box (separate compartments for each day or time of day)
- Use a calendar or reminder chart
- Wear a wristwatch with an alarm
- Leave notes for yourself
- Have a family member or friend remind you

Medications to Prevent Clotting:	Medications to Reduce Cholesterol:	Medications to Reduce High Blood Pressure:
<ul style="list-style-type: none"> ● Aspirin ● Heparin ● Warfarin (Coumadin®) ● Ticlopidine (Ticlid®) ● Clopidogrel (Plavix®) ● Aggrenox ● Dabigatran (Pradaxa®) 	<ul style="list-style-type: none"> ● Bile acid binders ● Fenofibrate ● Gemfibrozil ● Lovastatin, Pravastatin, Simvastatin ● Niacin 	<ul style="list-style-type: none"> ● Beta blockers ● Diuretics ● Vasodilators, ACE inhibitors, calcium channel blockers and angiotension receptor blockers

NEVER stop taking your medications or change how much you take without talking with your doctor. In some cases, suddenly stopping your medications can be dangerous.

Paying for medications

When you are in the hospital, all of your medications are paid for. But when you return home, your medications will be paid for by your provincial drug plan, your private health insurance, or by yourself. To find out what sort of drug coverage you are eligible for, talk to:

- Your social worker
- Your pharmacist
- If you are employed, your employer's human resources department
- If you are a member of a union, your union representative
- Your provincial health insurance program
- Your private health insurance company



Preventing Stroke

Making changes in your daily lifestyle will reduce your chances of having another stroke.

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Lower Your Risk of Stroke

There are some risk factors for stroke you can't change and some you can change.

Risk factors you can't change:

- Age
- Family history of cardiovascular disease or sickle cell disease
- Ethnicity: being African-American, Native American and Alaskan Native
- Higher risk due to a previous stroke, TIA or heart attack

Risk factors you can change:

- Tobacco use or smoke exposure
- Blood pressure high cholesterol
- Weight and healthy eating
- Physical activity and cardiovascular fitness
- Blood sugar (diabetes)
- Stress
- Excess alcohol
- Use of drugs or medications not ordered by your doctor

To reduce your risk, it's important to make changes for each risk factor you have. You can make changes gradually, one at a time, but making them is very important. This section explains how to reduce your risk of stroke.



Quit Tobacco and Avoid Secondhand Smoke



the

Goal

Be tobacco-free. This means no smoking or chewing tobacco and no exposure to secondhand smoke.

Why is this important?

- Quitting tobacco decreases your chance of stroke.
- Tobacco users are up to six times more likely to suffer a heart attack than non-tobacco users.
- Tobacco use puts stress on the heart in many ways. The chemicals in cigarettes narrow the coronary arteries, raise blood pressure and make the heart work harder.
- Tobacco use shortens the user's life span.

Benefits

Quitting smoking directly increases the body's ability to recover from a stroke by increasing the flow of oxygen to the muscles, brain and body tissues. This allows the body's systems to work properly and maintain function.

Improvements after quitting

20 minutes: Your heart rate and blood pressure drop

48 hours: Your ability to smell and taste improves

1 to 9 months: Coughing and shortness of breath decrease; your lungs are better able to filter and handle mucus, reducing the risk of infection

5 years: Your stroke risk is reduced to that of a non-smoker 5-15 years after quitting

10 years: The lung cancer death rate is about half that of a continuing smoker; the risk of cancer of the mouth, throat, esophagus, bladder, cervix and pancreas decreases

15 years: The risk of coronary heart disease is that of a non-smoker





You can quit tobacco. Decide to quit. Set a quit date and mark it on your calendar. Then follow these steps to success.

Get ready

- Write down all your reasons for quitting.
- Tell friends and family about your plan to quit so they can support you.
- Pay attention to when and why you smoke.
- Try new ways to relax.
- Take up a hobby to keep your hands busy.

Get set

- Make an appointment with your doctor or nurse to ask about medications to help you quit.
- Nicotine patches and nicotine gum are now available without a prescription (be sure to follow directions carefully).
- Call the NH Tobacco HelpLine (800-QUIT-NOW) or Tobacco Free VT (802-872-6303). Help counselors have helped thousands of New Hampshire and Vermont residents to quit smoking.

Quit

- Go to places where people don't smoke.
- Remind yourself of all the good reasons why you are quitting.
- Stay positive. You can make it.
- Stay healthy.
- If you slip, try again. You learn something new every time you quit. It takes some people many times to be successful.

DHMC also offers many resources to help you quit tobacco, including one-on-one counseling and a support group:

(603) 653-9456
dartmouth-hitchcock.org, search "quit tobacco"

Manage Atrial Fibrillation



To control an irregular heart beat and to prevent blood clots.

Why is this important?

- Managing atrial fibrillation can decrease your chance of blood clots and stroke.
- Atrial fibrillation is a heart rhythm problem: The heart quivers and does not beat as it should.
- The heart beat is too fast and irregular and may cause blood to pool in the heart and form clots.
- Clots can then travel in the bloodstream and clog a blood vessel that leads to the brain, causing a stroke.

Benefits

Controlling atrial fibrillation can reduce your risk for stroke and help you avoid other heart problems and fatigue.



Action Plan

Develop your own action plan—see page 39.

Keep regular scheduled check-ups if you have this problem.

- Your doctor or nurse may give you medications such as aspirin or warfarin to stop clots from forming.
- Your doctor may need to do special procedures to stop the irregular heart beat.

Know symptoms of atrial fibrillation:

- Heart fluttering or pounding
- Fainting or dizziness
- Shortness of breath
- Fatigue

Contact your doctor or nurse even if these symptoms go away.

Ask your doctor or nurse how to take your pulse. Follow your doctor's or nurse's instructions on how to take your medications.

Lower Your Cholesterol



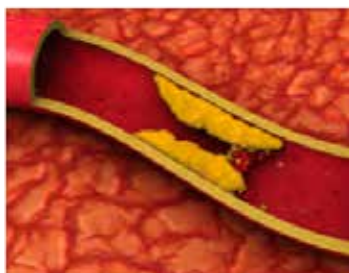
the
Goal

Maintain the following numbers:

- Total cholesterol at or less than 200 mg/dL
- HDL ("good" cholesterol) at least 40 mg/dL and over 60 mg/dL is even better
- LDL ("bad" cholesterol) at or less than 70 mg/dL (fasting) for those who have had a stroke
- Triglycerides at or less than 150 mg/dL (fasting)

Why is this important?

- Your body makes enough cholesterol to work normally, but cholesterol from foods is harmful. Extra cholesterol and fat circulating in the blood build up in the walls of the arteries. This buildup, called plaque, allows less blood to get through and blood clots can form.
- Buildup of plaque creates narrowing (stenosis) of blood vessels that decreases blood flow.
- HDL, the "good" cholesterol, helps remove cholesterol from the blood, preventing it from building up in your arteries.
- LDL, the "bad" cholesterol, carries most of the cholesterol in the blood. If your level of LDL is too high, it can lead to blockage in your arteries.
- Triglycerides are a kind of fat carried through the bloodstream that contributes to heart disease.



Blocked artery: plaque builds up and less blood gets through

Benefits

Lowering high levels of LDL cholesterol and/or triglycerides can reduce your risk of stroke.



Taking

Action

Action Plan

Develop your own action plan—see page 39.

Here are some tips to help you lower your cholesterol:

- Ask your doctor what is a healthy weight for you and aim for that weight.
- Work with a registered dietician to develop a healthy eating plan.
- Learn to use substitutes in your recipes or use a different cooking method to help you maintain a healthy weight.
- Get regular moderate-intensity physical activity. Moderate intensity would be walking with a friend at a pace where you can talk without being short of breath.
- Take your medications as prescribed. If you have questions about your medications or have side effects, talk with your doctor.
- Quit tobacco and drink only a moderate amount of alcohol. This will help to raise your HDL.

Manage Your Diabetes



Prevent or delay the onset of diabetes. Manage diabetes if you have it.

Why is this important?

- People with diabetes have at least twice the risk of stroke and heart disease as patients without diabetes.
- Over many years, high levels of blood sugar can damage your body. This can cause heart and circulatory issues as well as other problems.

Benefits

- If you have diabetes and control your blood sugar, you have a lower risk of heart attack and stroke than people whose blood sugar is not under control.
- If you have pre-diabetes, you can prevent diabetes by changing your lifestyle, losing weight, getting regular exercise and eating a healthy diet.

Types of diabetes

Pre-diabetes blood sugar level is high; you do not yet have diabetes but are likely to develop it

Type 1 diabetes body stops making insulin; you take shots of insulin to carry sugar to your cells

Type 2 diabetes your body does not make enough insulin OR is not able to use the insulin it does make; causes buildup of sugar in bloodstream



Action Plan

Develop your own action plan—see page 39.

Risk factors for Type 2 diabetes

- Being overweight, especially having extra weight around the waist
- Being physically inactive
- Having a family history of diabetes
- Giving birth to a baby weight more than 9 pounds

Fasting blood glucose (blood sugar)

- **What is a fasting blood glucose?** This is a blood test that is used to diagnose diabetes after fasting overnight.
- **Why do I need this test?** This test shows if you have diabetes or are likely to develop the disease.
 - Fasting blood glucose levels of 126 mg/dL or higher mean you have diabetes.
 - Levels between 100 and 125 mg/dL mean that you have pre-diabetes and an increased risk of developing diabetes.

How often do I need this test?

- Every 3 years, beginning at age 45 (especially if you are overweight or obese)
- More often and at a younger age if you have risk factors for diabetes

Learn More

DHMC Diabetes Program: patients.dartmouth-hitchcock.org/diabetes.html

Call (603) 650-8630 to receive a copy of the *Diabetes Toolkit*.

Lower Your Blood Pressure



Maintain a blood pressure less than 120 (top number) and less than 80 (bottom number).

Why is this important?

- Lowering your blood pressure decreases your chance for stroke, heart attack and other blood vessel disease.
- One in three US adults has high blood pressure, but because there are no symptoms, nearly one-third of these people don't know they have it.
- High blood pressure is often called the silent killer because it doesn't cause symptoms. As a result, many people pay little attention to their blood pressure until they are sick.

Benefits

Having a normal blood pressure and keeping it low means you are less likely to have:

- Stroke
- Heart failure
- Heart attack
- Sudden death

See page 62 for help understanding your numbers.



Action Plan

Develop your own action plan—see page 39.

Here are some tips to help you lower your blood pressure:

- Know your numbers: have your blood pressure checked regularly.
- Keep a health weight: you can lower your blood pressure without the use of medications through weight loss and exercise.
- Consider going to a registered dietician to learn how to prevent or manage high blood pressure through healthy eating (foods to eat, foods to avoid).
- The Dietary Approach to Stop Hypertension (DASH) diet can help you lower your blood pressure by eating fruits, vegetables, whole-grain foods and low-fat milk products and limiting your salt intake.
- Include relaxation strategies into your everyday life to help lower stress and blood pressure.
- Get at least 30 minutes of moderate-intensity physical activity most days of the week.
- Be tobacco-free, which means no tobacco use or exposure to secondhand smoke (see more on page 25).
- If your blood pressure remains high even after you make lifestyle changes, your doctor will probably prescribe medication.
- Take your medication as prescribed.

Ask your doctor

- What is my blood pressure?
- What does it mean for me and what do I need to do about it?
- What is my blood pressure goal?

Keep a Healthy Weight



Get to and keep a healthy weight.

Why is this important?

- Keeping a healthy weight decreases your risk of many diseases, including stroke.
- The more overweight you are, the greater your risk of stroke and heart disease.

Benefits

- Losing weight can improve your health in many ways. Just losing 5 to 10 percent of your current weight (10 to 20 pounds for someone at 200 pounds) can make a difference in the way you feel on a daily basis.
- Additional benefits include: increased energy level, lower cholesterol levels, lower blood pressure, less strain on your joints, lower risk of sudden death from heart disease or stroke, prevent Type 2 diabetes, improve your blood sugar levels.



Action Plan

Develop your own action plan—see page 39.

Talk with your doctor about whether you should lose weight.

- Talk to a dietitian or your doctor to develop a weight-loss or weight maintenance program that works well for you.
- Check with your insurance plan to see if nutrition counseling is covered.
- Get more physical activity every day. Talk with your doctor before starting a physical activity program.



Learn More

Weight Loss

Weight Watchers
weightwatchers.com
(800) 651-6000

DHMC Dietitians

patients.dartmouth-hitchcock.org/dietitians.html
(603) 650-5903

Be Physically Active



Get at least 30 minutes of physical activity on most days of the week. Talk about this with your doctor. Your goal should depend on your overall condition and diagnosis.

Why is this important?

- Being physically active decreases your risk for stroke and for developing high blood pressure, diabetes and obesity.
- Being physically active may also help you to avoid doctor visits, hospitalizations and medications.

Benefits

- Regular physical activity for 30 minutes or more most days of the week helps to lower your risk of heart disease, stroke, high blood pressure, diabetes and even other medical problems, such as colon cancer and osteoporosis.
- Additional benefits include: lowering tension, stress, depression and anxiety; improving self-image and well-being; lowering or maintain body weight and possibly lowering cholesterol; and building and maintaining healthy muscles, bones and joints.



Action Plan

Develop your own action plan—see page 39.

- Talk with your doctor before starting a physical activity program.
- Enroll in a physical activity program in your local community.
- Choose an activity that you like to do. Some people join a gym; for others brisk walking or household chores (washing the car, gardening, raking leaves, etc.) work best.
- It may help to divide your activity into shorter periods of time over the day.
- Try to exercise most days of the week. Some exercise most days is better than a lot of exercise only once a week.

Additional benefits

Activity calories burned per hour*

Bicycling 6 mph	240	Dancing	370	Playing with kids	216
Bicycling 12 mph	410	Gardening	324	Swimming 25 yards per minute	275
Cleaning	240	Hiking	408	Playing tennis (singles)	400
Cross-country skiing	700	Jogging 5.5 mph	740	Walking 3 mph	320

* For a healthy 150-pound person. A lighter person burns fewer calories; a heavier person burns more. If you are trying to lose weight, you will be more successful if you boost your activity level beyond 30 minutes most days of the week.

Learn More

Physical activity

www.presidentschallenge.org

NH hiking trails

www.trails.com/stateactivity.aspx?area=10068

VT hiking trails

www.trails.com/stateactivity.aspx?area=10012

Reduce Stress

✓ the Goal **Manage your stress in a healthy way.**

Why is this important?

Reducing stress can lower your risk of heart attack and stroke.

✓ Taking Action **Action Plan** Develop your own action plan—see page 39.



- Enjoy benefits of healthy habits as they can protect your health.
- Consider regular physical activity, which can relieve stress and lower your risk of stroke.
- Consider stress management programs to help you find new ways of handling your stress.
- Share your feelings and concerns with family and friends as it can help you to be happier and live longer. Good relationships play an important role!

Limit Alcohol Use

✓ the Goal **If you drink, drink only a moderate amount of alcohol.**

What is moderate drinking?

Moderate drinking is defined as no more than one drink per day for women and no more than two drinks per day for men. Count one drink* as:

12 oz regular beer	8-9 fl oz malt liquor	5 fl oz wine	1.5 fl oz 80-proof hard liquor
			
about 5% alcohol	about 7% alcohol	about 12% alcohol	about 40% alcohol

Limit your alcohol use
*Based on the U.S. Dietary Guidelines for Americans, U.S. Department of Health and Human Services, 2005.

✓ Taking Action **Action Plan** Develop your own action plan—see page 39.

- If you are a non-drinker, this is not a suggestion to start using alcohol.
- If you have another health condition that could make alcohol use harmful, you should not drink alcohol.
- If you are more than a moderate drinker, be aware that this increases your risk of stroke. Talk to your doctor about cutting back.

Hormone Replacement Therapy (HRT)



If you are thinking about taking hormone replacement therapy (estrogen or estrogen plus progesterone), talk with your doctor. If you are already taking HRT, stay informed of the risks and benefits of this treatment.

Why is this important?

In the past, HRT was thought to help protect women against stroke and heart disease. Recent findings show that routine use of oral HRT may increase the risk of cardiovascular disease in women.

- Studies have shown that taking HRT can increase a woman's risks of stroke, blood clots and heart attack. Because of this, HRT is NOT routinely recommended.
- For some women, using HRT for short-term relief of menopausal symptoms may outweigh the increased risk of stroke and heart disease.
- Recent findings suggest that taking HRT in a patch form may be safer than taking it by mouth.
- If you and your doctor decide that you will use HRT, it is recommended that HRT be used for as short a time period as possible.

Talk with your doctor to learn more about you and HRT.

Regaining Your Life

Many people are able to live a fulfilling life after a stroke. Much depends on if you take an active role to improve your health.

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Taking Charge— An Action Plan for Health

Changing your daily habits is important.

Here are some hints to make the process easier:

- Change only one habit at a time.
- Set realistic goals.

Remember, nobody's perfect.

- Nobody always eats the ideal diet or gets just the right amount of physical activity.
- Follow a plan that will work for you and will lower your risk of stroke and heart disease.
- Remember to keep at it. Work with your doctor. Ask family members and friends for support. If you slip, try again.

Health is a family affair.

When it comes to healthy living, what's good for you is good for your whole family. If your family members make healthy lifestyle changes together, your chances of success are better.

Taking care of your heart and blood vessels is one of the most important things you can do for your health and well-being.

Make multiple copies of the next page entitled "My Action Plan" to tackle your goals, one at a time.



My Action Plan

Name _____ Date _____

1. What I will do

Choose one goal:

I will _____

(examples: increase my activity, take my medications, make healthier food choices, reduce my stress, reduce my tobacco use)

Choose one action:

I will _____

(examples: walk more, eat more fruits and vegetables)

2. How Much/How Often

How Much:

(example: 20 minutes)

How Often:

(example: three times a week on Monday, Wednesday, Friday)

3. Confidence Level

Circle a number to show how sure you are about doing the activity.

Try to choose an activity that you score a 7 or above.

1	2	3	4	5	6	7	8	9	10
not sure at all			somewhat sure				very sure		

My signature _____ Doctor signature _____



Choose Healthy Foods

You can maintain a healthy weight by keeping a balance between the calories you eat and the calories you burn. If you need to lose weight, you will need to eat fewer calories than you burn. Your body burns calories by being physically active.

Healthy Hints

- Eat a variety of grains daily; half of your daily grains should come from whole grains.
- Eat a variety of fruits and vegetables daily.
- Eat a diet that is low in saturated fat, trans fat and cholesterol.

Remember:

- Choose foods and beverages that are low in added sugar.
- Choose and prepare foods with little or no salt.
- If you drink alcoholic beverages, do so in moderation.
- Keep foods safe to eat (correct refrigeration, good handwashing practices).

Learn More

Healthy eating and portions

The Foods You Choose

Call (866) 609-5183 or
go to www.choosemyplate.gov
for helpful resources.

Nutrition Tips

Lowering your total cholesterol

Total cholesterol is the main cause of the buildup of fat (plaque) deposits on your artery walls. This buildup causes a higher risk of stroke and heart disease.

Choose these more often:

- Fish
- Chicken (without bones or skin)
- Skim or 1% milk and other low-fat dairy products
- Egg whites
- Fruits
- Vegetables

Choose these less often:

- Whole milk and other fatty dairy products
- Butter
- Red meat, sausage, bacon
- Fried foods



Increasing your high-density lipoprotein (HDL)

Increase HDL (the “good” cholesterol) as much as possible. This helps clear your arteries and veins of the fat that can cause clogging, which lowers your risk of heart attack and stroke.

- Increase omega-3 fatty acids, found in deep sea fish (bluefish, herring, mackerel, salmon, swordfish, trout, tuna); eat at least two servings per week.
- Use natural foods such as hickory nuts, soybean kernels, soybeans and flaxseed.
- Increase monounsaturated fats found in food items such as olive oil, canola oil, peanut oil, nuts, natural peanut butter, olives and avocados.

What is trans fat?

Trans fat or trans fatty acids are types of dietary fat that raise your “bad” cholesterol (LDL). Read food labels and buy fewer products that list “hydrogenated oil” or “partially hydrogenated oil” as an ingredient such as:

- margarine or shortening
- Store-bought cookies, cakes, pies, snack food
- Fried foods

Have fun cooking healthy meals.

Driving

Getting out of the house can give you a sense of freedom, control and independence. Driving uses many skills that can be affected by stroke.

Remember:

- Most people can regain the ability to drive safely by getting new training or using special equipment after stroke.
- Talk with your doctor and therapists about returning to driving.
- Contact the Department of Motor Vehicles for the laws regarding driving after stroke.

Your doctor may order an evaluation by a driver rehabilitation specialist (DRS). The evaluation will include a vision exam and a test to see if you can react in ways to keep you safe on the road.

The DRS may offer tips to improve your driving skills and can train you on equipment that will make driving easier and safer.



Unable to drive?

You may not be able to drive after a stroke. There are ways to help maintain your independence and get to the places you want

- Ride with family and friends
- Take a taxi, shuttle bus or van
- Use public transportation such as buses, trains and subways
- Try a scooter, if it's safe for you
- Walk

Helpful hint

To find a driver rehabilitation specialist in your area, contact:

Association of Driver Educators for the Disabled (ADED) at (877) 529-1830 or go to www.driver-ed.org

Emotional Changes

Managing stress

Stress is your body's response to change and what is happening around you. It is natural. When stress gets in the way of your ability to think clearly or to get things done or it does not go away, it is time to act.

As a stroke survivor, it is very important for you to manage your stress. Too much stress for long periods can be harmful and raises your risk for heart attack and another stroke.

Signs of stress:

- Emotionally, stress can make you feel afraid, angry helpless or excited.
- Physically, stress can make you feel sweaty or short of breath, make your heart race or give you a headache.

Consult your healthcare team

After a stroke, you may have changes in the way you feel, act and think.

- These changes may be short- or long-lasting.
- Some people may not have any of these changes, while others may have a lot of these changes.
- Ask your doctor, nurse or therapists about how to deal with these changes.

Dealing with a flood of emotions can be difficult for anybody to manage.

Remember: Stroke survivors often have many different feelings.

- Some emotions are normal responses to the changes in your life after a stroke.
- Not all emotions are a normal part of recovery.
- Some emotions are caused by brain injury.
- You should get help dealing with these emotions if they get in the way of your ability to get things done or they do not go away.



Stay active—this can help reduce stress.



Depression

Depression is the most common emotional change experienced by people who have had a stroke. But when sadness turns into depression, it is time to act.

Symptoms of depression are:

- Crying all the time
- Difficulty concentrating
- Feeling easily agitated
- Feeling fatigue or “slowed down”
- Feeling sad or “empty” most of the time
- Feeling worthless or helpless
- Losing your appetite or gaining weight
- Losing interest or pleasure in ordinary activities
- Oversleeping or having trouble sleeping

Anxiety (extreme worry)

Often stroke survivors have both depression and anxiety.

Symptoms of anxiety are:

- Feeling panicky and out of breath
- Feeling sick to your stomach
- Having headaches
- Having low energy
- Having muscle tension
- Experiencing worry, fear, restlessness and irritability that do not seem to let up
- Having poor concentration
- Having a rapid heart beat
- Shaking

Severe emotional changes

Dramatic changes in emotions over short periods and uncontrolled emotions can be sudden and intense.

Someone who has had a stroke may laugh or cry at the wrong times, like laughing at a funeral, crying at a comedy club or even crying uncontrollably for little or no reason. If you experience this, you are not alone.

Every little success should be a reason to celebrate and recognize your progress. Enjoy each precious day.

Coping with Stress and Emotional Changes

Focus on you

- **Eat healthy foods.** Get enough sleep. Try to walk or get some type of physical activity every day, especially outdoors.
- **Prepare for those things you know will be stressful.** Planning for them can help you manage them.
- **Take time every day to do something that you truly enjoy.** People who have had a stroke often find that they discover new interests like drawing or listening to music.

Accept and celebrate

- **Tell your story.** Find a friend or family member who is a good listener to share your experiences. Talking about and sharing your feelings are good ways of dealing with them.
- **Accept your feelings.** Fear, sadness and anger are natural, common responses to a diagnosis of stroke. Accept your emotions as part of your recovery.

Get support

- **Connect with others** going through similar experiences.
- **Consider joining a support group** in your area and invite a friend or family member to go with you (see Local Resources section, page 73).
- **Seek professional counseling.** Sometimes additional support and guidance are needed. Your doctor can help you find a counselor.
- **Talk with a spiritual leader.** Being in touch with your spiritual side may help when you are faced with a serious illness. Your clergy or rabbi may be able to help you and your family with your feelings.



Aphasia

Aphasia is difficulty in using or understanding language caused by damage to the brain.

There are two broad types of aphasia:

- **Expressive** — you know what you want to say but the words do not come out right
- **Receptive** — you may not understand what people are saying to you

Some stroke survivors may have both forms. Aphasia can also make it difficult to read, write or do math. Aphasia can be very frustrating — both for you and for your caregiver and family. The severity of the aphasia will vary from person to person. In some people, it may be temporary and improves quickly after a stroke. Other stroke survivors may be left with permanent language problems. Speech therapy can help you recover your use of language or develop new ways of communicating.

Types of aphasia

- **Wernicke's aphasia:** If you have this type of aphasia you may speak without hesitation but you may use the wrong words and be difficult to understand. You may also have difficulty understanding what is being said to you, or have difficulty with reading or writing.
- **Broca's aphasia:** In severe cases, you may only be able to get out bursts of a few words. Your vocabulary may be limited and when you speak you may be difficult to understand. But you may understand what people are saying to you and may be able to read.
- **Anomic or nominal aphasia:** You may understand what other people are saying and may be able to read, but you have trouble naming objects or people, or coming up with nouns. This can make it difficult for people to understand what you mean.

- **Global aphasia:** There may be total, or near total, loss of the ability to use language. You may not be able to read or write, and it may be hard to understand other people or to express yourself. This type of aphasia is often seen immediately after a stroke has occurred. If the damage to the brain is not severe, it may get better over time.

Other language-related problems

Apraxia

Apraxia is a problem with muscle control or a motor deficit. It can affect all or some of the movements you need to make when you speak. If you have apraxia, it can limit your ability to make hand gestures, such as waving good-bye, beckoning, saluting or pantomiming, such as blowing a kiss or pretending to eat.

Dysarthria

Dysarthria is a speech problem due to weakness, slowness or poor coordination of the muscles used for speaking. If you have dysarthria, your speech is probably slurred and may be difficult to understand.

Dysphagia

Dysphagia is difficulty swallowing. It may be caused by weakness or a lack of sensation in the mouth. Dysphagia involves many of the same muscles involved in speech. It is usually diagnosed and treated by your speech-language pathologist. Dysphagia can make it difficult to eat.

Help for aphasia

It is important for you, your caregiver and your family and friends to know that there are resources to help you. Your speech-language therapist will work with you to help you improve your ability to speak and teach you new ways to communicate. Your speech-language therapist can also help your caregiver or family learn more about your condition and how to help you.

Swallowing and Eating

A stroke can affect the muscles of the mouth, tongue and throat. As a result, you may have trouble swallowing. This is known as dysphagia. Dysphagia may be temporary or permanent. Because it involves many of the same muscles used in speaking, dysphagia is usually diagnosed and treated by your speech language pathologist. If not treated, swallowing problems can lead to serious health problems, such as choking or inhaling food (aspiration).

During the early stages of your recovery, your dietitian may order meals that are easy for you to eat. For example, soft foods such as applesauce or oatmeal may be easier for you to swallow than thin liquids such as water or juice. You may also be given:

- Liquids thickened to the consistency of pudding or honey
- Food that is softer or smoother (such as mashed potatoes)
- Food that has been chopped or minced into smaller pieces
- Food that has been pureed or put in a blender

As swallowing improves, most stroke survivors can go back to eating regular food.

What you can do

Here are some tips if you have difficulty swallowing or eating:

- When eating, sit up straight in your bed or chair
- Take small bites. Try using a teaspoon rather than a tablespoon.
- Chew on the stronger side of your mouth
- Chew each mouthful thoroughly before swallowing
- Clear your throat and mouth of food after each bite
- Do not talk while chewing
- If drooling on the weakened side of your mouth is a problem, wipe your face frequently with a napkin or cloth
- Avoid distractions while eating. Turn off the TV or radio. Avoid busy restaurants and dining rooms if you are easily distracted while eating.
- After eating, remove food trapped in your cheek with your finger. Use a small mirror to see where food is trapped. Brush your teeth and rinse after each meal.
- If you suffer heartburn or acid reflux after eating, try to avoid highly spiced or seasoned foods; citrus fruits and juices and other acidic foods (e.g. tomatoes); drinks with caffeine, such as coffee, tea, chocolate and cola; peppermint or spearmint; or high fat, fried foods.

Helpful Devices and Home Modifications

After a stroke, changes in your home may be needed to make it easier and safer for you to move around and do things. These can be as simple as moving furniture and appliances. Or changes may be needed in almost every room in your home. Some survivors may need to buy special devices to make home life easier or will need to have ramps built.

Your occupational therapist can help you decide what changes you should make in your home. Many adaptations are easy and inexpensive to make. If you need special devices or modifications have to be made, your social worker may be able to help you find funding.

Depending upon your needs, you may find it helpful to following these tips for home safety:

- Move thermostats, plugs and switches to make reaching them easier
- Rearrange furniture that blocks where you walk
- Raise the height of chairs using wooden platforms or double cushions
- Remove loose mats, area rugs or older style shag rugs that you could trip over

Doorways

- If required, install handrails and a wheelchair ramp
- If you use a walking aid or a wheelchair, you may want to remove door sills or thresholds, as well as excess trim or molding

Staircases

- If your house requires going up and down a lot of stairs, consider a chair-lift or elevator
- Build a ramp where there are four stairs or fewer
- Install handrails

The bathroom

- Install grab bars near the toilet, tub and shower
- Put non-skid tape or a suction mat on the bottom of bathtubs and showers
- Use a chair the same height as the tub to help moving in and out
- If you find it hard to safely get in and out of the bathtub, consider a tub bench and a hand-held, flexible shower hose
- Raise the toilet seat by loosening the bolts and placing a “shim” underneath the regular seat, or purchase a raised toilet seat
- Try using soap-on-a-rope in the shower
- A bath mitt and long-handled brush can make



The bedroom

- Use a low bed (removing the box springs is an easy way to reduce the height) to make getting in and out easier
- If you have trouble walking, consider using a commode or portable urinal at night
- Use a nightlight

The kitchen

- Purchase and install faucets that can be turned on and off with the wrists
- Use a hot plate on a table if the stove is too high for you to reach
- Drive rustproof nails into a breadboard to hold food you want to cut or peel
- Use a chair to work at a high counter or install a lower counter
- Store dishes and pot lids on vertical plate holders
- Place kitchen items on low shelves or in places where they are easily reached
- Purchase a revolving shelf (a “lazy Susan”) so it is easier to reach items
- Install casters or wheels on utility carts so you can use them to carry items to the stove or refrigerator
- If your kitchen floor is slippery, change to a no-wax, non-slip linoleum
- Long reachers or tongs can help you reach items on high shelves
- To keep plates from sliding, put wet washcloths or paper towels under them to keep them in place
- Special eating aids, such as utensils with wide handles, are available



Mobility devices

Mobility devices are tools to help you get around at home or outside the home. The type of device you should use depends upon your unique needs. Talk with your physical and occupational therapists to find out which one is right for you.

If the device you need is expensive, your social worker may be able to find programs to help cover the costs. Or in many cases, mobility devices can be borrowed. Depending upon your needs, you may benefit from using:

- Canes
- Braces
- Orthotics (inserts in the shoes)
- Walkers
- Wheelchairs (manual or electric)
- Electric scooters

Your needs may change over time. If so, a reassessment by a physical or occupational therapist could be helpful. Talk with your doctor. You may need a referral to be reassessed.

Incontinence

Incontinence is trouble controlling your bowels or bladder. Many stroke survivors experience incontinence after their stroke. The good news is that over time, many survivors regain control over their bowels or bladder.

Your stroke rehabilitation team can help you understand what is causing incontinence and what can be done to help you. Adaptive devices are available to make toileting safer and easier. They include:

- Raised toilet seats
- Grab bars on the wall next to the toilet
- Commode chairs
- Portable urinals



Here are some tips to help you:

- To help re-establish bladder control, try going to the bathroom at regular intervals (e.g. every two hours).
- If you are having trouble with bladder control, limit fluids before going to bed.
- Consider keeping a commode or portable urinal next to your bed at night.
- Have a night light in your bedroom.
- Special disposable bed pads and absorbent underclothing are available.
- If you are having bowel problems, speak with the dietitian on your stroke rehabilitation team. Maybe you need more fiber in your diet.
- Certain medications can affect your bowel habits. Speak with your doctor or pharmacist.

Sometimes, people will try to prevent problems by limiting the amount of fluids they drink. This is not a good idea. Most adults need six to eight glasses of fluids a day. Drinking too little could lead to dehydration or increase the risk of urinary tract infections.

Symptoms of a urinary tract infection:

- Increase in frequency of urinating or accidents
- Change in behavior, especially increased agitation when unable to communicate an urgent need to urinate
- Burning or pain when urinating
- Cloudy, strong smelling urine

If any of these symptoms occur, speak to your doctor.

Pain and Mobility

After a stroke, you may have trouble with movement because of paralysis or muscle weakness. If they are not used, muscles and limbs may stiffen and tighten. This can cause painful joint stiffness or contracture.

Another problem you may experience is spasticity or muscle stiffness in your affected limb. A spastic limb is difficult to move and it may hurt when being moved. These difficulties may interfere with everyday activities or with your physical therapy.

If one arm is weak and hanging down, it can pull the muscles of the shoulder. This can contribute to a painful shoulder (sometimes commonly referred to as a “frozen shoulder”). The paralyzed arm should be supported when you are standing or sitting to keep the blood circulating.



How can you lessen the pain?

Usually, muscles are not completely paralyzed by a stroke. It is important to work with your therapist to regain as much movement and control as possible. Pain can be caused by the stress on the muscles and joints because of muscle weakness and stiffness. Keeping your body and joints properly positioned (lined up) and supported can go a long way to preventing pain.

You should never be lifted by your affected arm or shoulder. This could cause serious damage to your arm or shoulder.

Your physical therapist can help you to regain your mobility and manage any pain you might have. This may involve special exercises or functional activities to retrain the weak muscle, or to help control your posture and movement. Your family or friends may be able to help you with these. Your physical therapist can give them ideas.

What to do if the pain gets worse

Tell your doctor or therapist about your pain, especially if it comes on suddenly. Follow his or her advice about looking after the affected part of your body. Do not let your joints get too tight or stiff. Appropriate activity can help to reduce the pain, even if you do not regain all your normal movements.

Hand, Foot and Skin Care

Care of your affected hand

A stroke can cause lack of sensation or movement in the hand. Because the hand is not being used, fluids may pool in it. This causes swelling and may result in pain and skin problems. To reduce hand problems:

- When sitting, make sure your affected arm is supported. The hand should be positioned in front, with the fingers opened and the wrist supported.
- Use foam wedges or arm supports placed on a tray to elevate the hand and reduce swelling.
- Try to use your other hand to gently bend and open the fingers of your affected hand, and to place the hand on the supporting surface.
- If the hand is extremely contracted, tight or spastic, do not force it open. Gently stroke the back of the hand and wrist. This should help the fingers start to open.
- Do not squeeze soft balls. Squeezing a ball encourages the hand to close and the fingers to tighten.

Care of your feet

Changes in the way a person walks are common after a stroke. These changes can eventually lead to problems with the feet. However, most of these problems can be avoided by taking a few very simple steps:

- Check your feet every day for cracks, blisters, sores, swelling or any changes in skin color. This is especially important if you have diabetes or circulation problems or reduced sensation in the feet. Any sign of infection such as redness, swelling or discharge should be seen by your family doctor.
- Always wear socks. Socks made of natural fibers (e.g. cotton or wool) will help to absorb sweat and keep the feet cool and dry.
- Poorly fitting shoes can cause foot problems. When buying shoes make sure your shoes are wide and deep enough, but fit snugly at the heel. Shop for shoes at the end of the day, when your feet are naturally swollen and have both feet measured.
- Ideal shoes for stroke survivor have low heels, shock absorbing soles, laces or Velcro, deep, rounded toe boxes, and leather or canvas uppers. Many stroke survivors require special footwear to give support and to accommodate braces or orthotics. Footwear advice, modifications and orthotics can be prescribed by a podiatrist or a stroke rehabilitation specialist.

Skin care

The skin is the body's largest organ. It provides a defense against infection. It is important to keep your skin healthy. A number of factors can increase a stroke survivor's risk of skin damage such as: loss of sensation or the ability to move, dry skin, poor nutrition, dehydration or friction on the skin because of improper positioning. Moisture from perspiration or incontinence can also irritate the skin.

What can be done to prevent skin damage:

- You, your caregiver or your family should check your skin each day. Pay particular attention to bony areas such as heels, hip bones and elbows. Look for redness and signs of abrasion, scraping or bruising.
- Regularly wash with mild cleansing agents. Clean soiled skin promptly. Do not scrub the skin. Be sure to rinse off all soap residue, which can irritate the skin.
- Treat dry skin with moisturizers.
- Minimize your skin's exposure to moisture from incontinence, perspiration or wound drainage. Ask your nurse about ways to protect the skin, such as using incontinence products, wound dressings or barrier creams.
- Use proper positioning, mobility, transfer and turning techniques to minimize skin injury due to friction. Your nurse or physical therapist can help you, your caregiver and your family learn proper positioning and mobility techniques.
- Do not sit or lie in one position for long periods of time.
- If you are confined to bed for long periods of time, a water pillow, thick foam or specialty boot can be used to relieve pressure on the heels.
- Make sure you are eating a healthy diet and drinking enough fluids. Ask your dietitian for help.
- If the problem persists, talk with your stroke rehabilitation team about special devices that could help, such as pressure-reduction mattresses, alternating air mattresses, elbow pads or pressure reduction seat cushions for wheelchairs.



Sexual Activity

Many people who have had a stroke or other serious conditions wonder if they can still have sex. The answer is yes. Check with your doctor before leaving the hospital to find out when you can safely resume sexual activity.

To increase your ability to enjoy sex, try the following:

- Talk openly with your partner about your sexual needs and concerns.
- Pick a time for sex when you feel rested and comfortable.
- Avoid sex after eating a big meal or drinking alcohol.
- Have sex in a comfortable room that is not too hot or too cold.
- Have sex in less strenuous positions such as lying on your back or lying side by side with your partner.

If intercourse is difficult for you, find other ways of being physically close and intimate.

For example:

- Find other ways to show affection.
- Try mutual forms of sexual stimulation other than intercourse.
- Increase non-sexual affection and communication with your spouse or partner.

Certain medications may cause problems with sex, including:

- Decreased sex drive, problems with ejaculation, impotence or inability to have an orgasm or climax



If you are having sexual difficulties, discuss these issues with your doctor.

Fatigue

Recovering from a stroke and having to learn new ways to do things can be tiring. If fatigue is a problem for you, here are some helpful tips.

- Make sure you are eating enough to fuel your body.
- Eat a healthy balanced diet.
- Drink plenty of fluids.
- Plan your day to take advantage of the times when you have the most energy.
- Every day, make a 'to do' list and decide which jobs are the most important to you. On days when you feel tired, do only the things you must. On high energy days, you can work your way a little further down the list.
- If necessary, take short rest breaks when you become tired.
- If you nap during the day, keep your naps short. Save your longest sleep for the night.
- Try to go to sleep and wake up at the same times each day.
- Try to be as physically active as you can. Ask your stroke rehabilitation team what sort of activity would be suitable for you.
- Do something you enjoy every day.
- Know when to ask for help. Don't think you have to do everything yourself.



Hobbies and Recreational Activities

Having a stroke doesn't mean that you have to give up your old hobbies or leisure activities — or can't develop new interests. In some cases, assistive devices may be helpful.

- **Cards:** Card-holders (available at games stores) can help if you have problems handling small objects
- **Reading:** Use book holders, large-print books, and audio books
- **Photography:** Most cameras today can be operated with one hand
- **Pets:** Animals are great companions; a trained dog will give you a reason to get out and walk every day; for cats, put the litter box on a shelf or a stand so you don't have to bend over to clean it
- **Sewing/needlework:** There are a lot of specially designed devices to help you work with needle and thread or you may be able to rig up your own; for example, spring clamps (available in most hardware stores) can help to hold objects in place



Active hobbies

Physical activity is great for stroke survivors and can help to reduce the risk of another stroke. Talk with your occupational, physical or recreational therapist if you want to return to — or take up — a sport or active hobby. In some cases, your occupational or physical therapist can give you exercises to help prepare your muscles for specific sports or activities. Here are some suggestions:

- **Bowling, lawn bowling, croquet, horseshoe tossing, or shuffleboard:** All of these activities can be played with one hand
- **Chair fitness classes:** Many community and senior centers offer fitness classes for people in wheelchairs or with balance or leg problems
- **Golf:** Special equipment and techniques are available to enable people with disabilities to participate
- **Walking:** One of the most economical and versatile forms of activity; all you need is a pair of good, supportive shoes; many shopping malls are open for early morning walks — a great way to exercise even in bad weather
- **Yoga, pilates or Tai Chi:** These activities emphasize going at your own pace and only doing what is comfortable for you; some clubs offer special classes for people with disabilities
- **Gardening:** Elevated garden beds that come to hip level are easier to maintain

Returning to Work

If you were employed when you had your stroke, you may be worried about whether you will be able to return to work. This is especially true if you are a younger stroke survivor. There is no easy answer to your question. Returning to work depends on a number of things:

- The kind of job you had
- The effects of your stroke
- Your general state of health
- Your age

Ready to retire?

If you are close to, or over, retirement age, you may not want to return to work. You may feel that you would rather spend more time with your family, pursuing hobbies or interests you enjoy, or doing volunteer work. Congratulations! You may be eligible for a retirement pension, employment insurance, or disability pension.

To help you find out what benefits you are eligible for, talk with:

- Your social worker
- Your former employer's human resources department
- If you are a member of a union, your union representative



Going back to work

If you want to go back to work, or feel you must go back to work, talk with members of your stroke rehabilitation team. Your occupational therapist, psychologist or social worker can help determine if you can go back to your old job. Maybe you will have to change the way you work. For example, this may include learning to do things with one hand.

Employers have a responsibility to make reasonable accommodations in the workplace or in job descriptions for employees who become disabled. These accommodations can range from very simple things, such as creating a handicapped parking space near the door, to more complex changes, such as allowing you to work a flexible schedule, or providing special equipment so you can do your job.

If you want to return to your job, begin by talking to any of the following members of your stroke rehabilitation team: your social worker, psychologist, occupational therapist or vocational rehabilitation therapist. You will also want to talk with your employer's human resources department and, if applicable, your union representative.

Changing Careers

After a stroke, you may consider changing careers. Maybe you feel you cannot return to your previous type of work. Or maybe you feel that you have been given a chance to try something new.

Choosing a new career can be exciting. Spend some time exploring new ideas. Be realistic about disabilities or problems created by your stroke, but focus on the positive. Starting a new career demands that you be patient, positive, proactive and persistent. Don't expect overnight success. But don't give up without giving it your best.

Your family and friends can support you in making a change. You might also want to call upon:

- Members of your stroke rehabilitation team, such as your social worker, occupation therapist or vocational counselor.
- If you think retraining would help you, contact your local temporary or permanent placement agency. Some offices provide aptitude testing and résumé-writing workshops, as well as retraining programs.
- Aptitude testing, career counseling and résumé-writing services are also provided through many community colleges and Boards of Education continuing adult education programs. There are also private agencies that can provide similar services.



Stroke Toolkit

Use the checklists in this section to help you plan, to keep track of important information and to review with your doctor.

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My Stroke Diary

Since you have had your stroke, a lot has happened. You have probably seen dozens of people: doctors, nurses, rehabilitation therapists, and others. It can be hard to keep track. This diary is designed to be your record of your care and recovery. Keep this diary with you. You, your caregiver, family, friends or stroke care team can record information in it. This will help you, your stroke care team and your loved ones share information about your stroke.

There are four parts you can record:

Part 1.

Information about you and your stroke

Part 2.

The names/phone numbers of your stroke care team and other stroke care providers

Part 3.

Information about the history of your care and recovery

Part 4.

Your feelings or any other information you would like to record

Part 1.

Important information about me and my stroke

First name _____ Last name _____

Birth date _____

Address _____

City/town _____ State _____ Zip code _____

Phone _____ Email address _____

Home situation: Alone _____ With someone else _____ Other _____

Do you have a caregiver at home? Yes ☐ No ☐

Name of caregiver _____ Phone _____

Date of stroke _____

Name of hospital where I was first treated _____

Was tPA used? Yes ☐ No ☐ I don't know ☐

Stroke type: Blood clot (ischemic) ☐ Bleeding (hemorrhagic) ☐

Side of brain affected: Right ☐ Left ☐ Both ☐ I don't know ☐

Other details _____

Was a CT/MRI performed? (if yes, describe the results) Yes ☐ No ☐

Write down any other relevant health conditions you have (e.g. diabetes, pain, high blood pressure, etc)

Describe what you are doing to prevent another stroke _____

Part 2.

Important names and telephone numbers

In the following section, you can write in the names and telephone numbers of people who are important in your stroke recovery. You may want to include your doctor and pharmacist, as well as the members of your stroke rehabilitation team. You can also write in the names and phone numbers of services or organizations in your community (e.g. Meals on Wheels, local stroke support groups, respite services, home care, etc).

Emergency Services	NAME	TELEPHONE NUMBER
My family doctor		
My neurologist		
My pharmacist		
My nurse		

My Stroke Rehab Team	NAME	TELEPHONE NUMBER
Doctor		
Nurse		
Dietitian		
Occupational therapist		
Physical therapist		
Social worker		
Speech/language therapist		
Recreational therapist		

Community Services

Other Important Numbers

On these pages, you may want to write about your feelings. Or maybe you would like to write notes about things you want to remember. These are your pages, so use them any way you would like.

This image shows a full page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing. There are no margins, text, or other markings on the paper.

[illegible]

[illegible]

Know Your Numbers

Discuss and fill out this chart with your doctor or nurse.

Risk Factor	Goal	How Often	Why it's important	My Numbers	My Numbers	My Numbers
Blood pressure	Less than 120/80	Every visit	High blood pressure can cause kidney damage and strokes	Date:	Date:	Date:
Overweight	Healthy weight	Every visit	Healthy weight reduces risk	Date:	Date:	Date:
Tobacco Use	No tobacco use	Every visit	Quitting lowers your risk of premature death	Date:	Date:	Date:
Cholesterol	Less than 200	Every year	It is used to estimate your risk of developing heart disease	Date:	Date:	Date:
LDL	Less than 70	Every year	High LDL can cause heart disease and strokes	Date:	Date:	Date:
HDL	Greater than 40	Every year	HDL helps keep "bad" cholesterol from building up in your arteries	Date:	Date:	Date:
Triglycerides	Less than 150	Every year	It can raise your risk of heart disease	Date:	Date:	Date:
Blood Sugar	Less than 100	Every 3 years (more often if needed)	It checks your sugar level in your blood	Date:	Date:	Date:
Hemoglobin A1c	Less than 7.0	Every 3-6 months	It checks for control of your blood glucose levels over the past 2-3 months	Date:	Date:	Date:

High Blood Pressure

Understanding the numbers

Your blood pressure category is determined by the higher number of either your systolic pressure (the amount of force used when the heart beats, the top number) or your diastolic pressure (the pressure that exists in the arteries between heartbeats, the bottom number).

Your Category	Top Number (systolic)		Bottom Number (diastolic)	What to Do
Normal blood pressure	Below 120	and	Below 80	Good job! Keep making healthy choices to keep your blood pressure low.
Pre-high blood pressure	120 to 139	or	80 to 89	Your blood pressure could be a problem. Eat better and be more active. Lose weight if you need to.
High blood pressure	140 or higher	or	90 or higher	Eat better and be more active. Lose weight if you need to. If this isn't enough to lower your blood pressure, talk to your healthcare team about taking one or more medications.

What is pre-hypertension?

If your blood pressure is between 120/80 and 139/89, then you have pre-hypertension. This means that you don't have high blood pressure now but are likely to develop it in the future. You can take steps to prevent high blood pressure by adopting a healthy lifestyle.

Talk to your doctor if you are in the pre-hypertension range.

Medication Chart

This chart is designed to help you keep track of your medications and their doses. Put a check in the box after you take your medication. Make photocopies of this chart, keep the pages in a folder and bring it to your next doctor's appointment.

Month: _____

Morning Medications	Dose	Sun	Mon	Tues	Wed	Thurs	Fri	Sat

--	--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--	--

Midday Medications	Dose	Sun	Mon	Tues	Wed	Thurs	Fri	Sat

--	--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--	--

Evening Medications	Dose	Sun	Mon	Tues	Wed	Thurs	Fri	Sat

--	--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--	--

As Needed Medications	Dose	Sun	Mon	Tues	Wed	Thurs	Fri	Sat

--	--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--	--

Questions for My Doctor

Getting answers to these questions will give you important information about your health and what you can do to improve it.

Bring this list of questions to your doctor's office.

Risk factors:

- What is my risk for another stroke?
- What is my blood pressure? What does it mean for me and what do I need to do about it?
- What is my blood pressure goal?
- What are my cholesterol numbers? What do they mean for me and what do I need to do about them?
- What are my goals for my cholesterol numbers?
- What is my blood sugar level? Does it mean I'm at risk for diabetes?
- What other screening tests for stroke and heart disease do I need? How often should I return for checkups?
- For smokers: What can you do to help me quit using tobacco?
- How can I tell if I'm having a stroke or a heart attack? What should I do if I think I may be having a stroke or a heart attack?



Diet and exercise:

- What is a healthy weight for me? Does this mean I need to lose weight for my health?
- How much physical activity do I need? What kinds of activities are helpful?
- What is a healthy eating plan for me? Should I see a registered dietitian to learn more about healthy eating?

Medications:

- Should I be on blood pressure medications?
- Should I be taking aspirin?

Tips for Caregivers

Caregivers need care too. A stroke changes the lives of those who care for the stroke survivor, too. Caring for someone who has had a stroke is rewarding and very important. It can also be stressful, frustrating, tiring and difficult. As a caregiver, remember to take care of yourself.

The Stroke Caregiver

Being a stroke caregiver is a demanding — but rewarding — responsibility. You may have to take over tasks that in the past were performed by the stroke survivor on a daily basis.

One of the most important parts of your new job is to help the stroke survivor become as independent as possible. You are the key to maintaining the comfort, safety, dignity and self-esteem of the stroke survivor.

At times, you may feel overwhelmed by the responsibilities of being a stroke caregiver. This is a normal reaction to the many changes a stroke can bring. It is helpful for caregivers to learn to do what successful business managers do —delegate. Think about what family members, friends or outside resources can do to lighten your load. Talk with your social worker or doctor about community services that may be able to help.



The stroke caregiver can help in the recovery process:

- Get as much information as possible from the stroke rehabilitation team about how the stroke has affected the stroke survivor. The more you know, the more you will be able to help. Make a list of questions and get the answers you need.
- Become familiar with the survivor's rehabilitation program. Ask therapists, nurses and doctors to demonstrate techniques. Learn how to correctly help the stroke survivor.
- Take a first aid course at an agency such as the Red Cross and learn CPR (cardiopulmonary resuscitation). The skills you learn will be very useful and can reduce any anxiety you may have about caring for the survivor.
- Be patient - a lifetime of learning can be lost with a stroke and it cannot be re-learned overnight. Accept that frustration is likely to be a big part of the caregiving role. But you may discover new strengths and abilities you never knew you had.
- Talk with your social worker, doctor, church or religious group about caregiver support services in your area. Ask if there are programs for:
 - respite care so you can have a break
 - day care/outpatient services
 - community services
 - cultural, church or religious groups
 - aphasia or stroke support groups



An important part of the caregiver's role is helping the stroke survivor rebuild his or her self-esteem. Caregivers can help in the following ways:

- Emphasize the ways in which the stroke survivor can regain his or her independence through rehabilitation therapy.
- Include the stroke survivor in your conversations. Talk with the stroke survivor, not about him or her.
- Keep the stroke survivor informed about family activities. Seek his or her opinion and advice.
- Give plenty of affection, understanding and respect.
- Don't make constant comparisons to the way life was before. Focus on the present and the positive. Encourage the stroke survivor to enjoy what he or she can do, instead of regretting what can't be done.
- Join a stroke support group. This can help you and the survivor share feelings of anger, sadness and frustration with others who know exactly what you're going through.

Taking care of yourself

The physical and emotional changes in the stroke survivor can mean major adjustments in the caregiver's day-to-day life. Caregivers may sometimes feel burnt-out, frustrated, helpless, depressed, afraid and even angry. Such feelings are not bad — they are normal and understandable. Here are some ideas other caregivers have used to help them deal with these feelings.

- Share your feelings with a close friend or another caregiver who can listen to your thoughts.
- Try to have at least one daily conversation about a topic that's not related to stroke.
- Do something you find relaxing, such as taking a walk, reading a book, yoga, Tai Chi, pilates or listening to calming music.
- Keep up with current events and local news to broaden your outlook.
- Enlist the help of family, friends or community agencies. Don't feel guilty if you can't be with the stroke survivor every minute.
- Take care of your physical health. Eat a healthy diet. Try to be physically active most days of the week.
- Get spiritual support. Talk with your clergy or spiritual advisor.

Taking a break

Being a caregiver will take a lot of your time and energy. But being a caregiver does not mean giving up your entire life. It is important to know when to take time off. Taking periodic breaks is essential for both you and the stroke survivor.

You will be able to give better care when you are refreshed through outside contact and stimulation.

Here are some guidelines that can make it easier to get away:

- **Plan well ahead.** Discuss your plans with the survivor well before you leave. It can be upsetting for survivors to find a routine is suddenly being changed.
- **Find out what type of help or relief you need most.** For example, you may find you need household assistance to allow you to go for a walk most days or do outside gardening. If you are planning a longer trip, you may need to find someone who can come in to care for the stroke survivor, or a nursing home where the stroke survivor can stay.
- **Don't be afraid to ask neighbors or friends to help out occasionally.** They may be very happy to help. In fact, they may not be offering to help because they think you always have everything under control.
- **Try to be nearby during helpers' first few visits.** The helpers will need to learn the routine in your home and what you expect them to do. It is helpful if they know how to reach you if a problem arises.
- **Do not worry that the stroke survivor will fall apart without you.** In fact, try to promote independence for the survivor. A break can refresh a stroke survivor, as well as the caregiver.



Depression

About half of all stroke survivors become depressed at some point during their recovery. Caregivers also struggle with new responsibilities and roles that can lead to depression.

Depression is not a sign that you are weak or “not trying.” It is not something you can just “snap out of.” Check the warning signs of depression in Chapter 5. If you have two or more of these symptoms for more than two weeks, contact your doctor or social worker. Depression can be treated and the sooner you are treated, the better the outcome.

Stroke Resources

For more information, please call the Health Education Center at (603) 650-8710 or go to the Dartmouth-Hitchcock Medical Center Cerebrovascular Disease and Stroke Program's website at **patients.dartmouth-hitchcock.org/stroke**

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Stroke Resources

Local/Statewide Resources

American Heart Association and American Stroke Association

2 Wall Street, Manchester, NH
(603) 669-5833

34 Hurricane Lane, Williston, VT
(802) 878-7700

Provides free pamphlets on stroke, heart disease, prescription drug use, exercise and healthy living tips.

DHMC Health Education Center

East Mall, Level 4, Lebanon, NH
(603) 650-8710
patients.dartmouth-hitchcock.org/health_ed.html

Staffed Monday-Friday, 7 a.m. – 4 p.m. Computer access 24/7. Provides a lending library of books and videos. Staff hosts classes and workshops and can help you with your health questions and concerns.

DHMC Center for Shared Decision Making

Main Mall, Level 3, Reception 3P, Lebanon, NH
(603) 650-5578
patients.dartmouth-hitchcock.org/shared_decision_making.html

The Center for Shared Decision Making opened in 1999 as the first center in the United States dedicated to encouraging doctors and patients to make decisions together. A library of DVDs and booklets on more than 30 topics is available. One-on-one decision support counseling to help you work through your important decision.

New Hampshire Tobacco Helpline

(800) QUIT-NOW
www.trytostopnh.org

Provides free, confidential, individualized smoking cessation counseling and information to any New Hampshire caller. Information for friends and loved ones of tobacco users is also provided.

Tobacco Free Vermont

(802) 872-6303
www.tobaccofreevermont.org/index.php

Provides free, confidential, individualized smoking cessation counseling and information to any Vermont caller. Information for friends and loved ones of tobacco users is also provided.

New Hampshire Medication Bridge Program

www.healthynh.com/fhc/initiatives/access/medicationbridge.php/php

The goal of the program is to help eligible uninsured and underinsured patients of all ages to receive needed prescription medications from pharmaceutical companies' Patient Assistance Programs.

Green Mountain Care Prescription Assistance

www.greenmountaincare.org/vermont-health-insurance-plans/prescription-assistance

Vermont has several prescription assistance programs to help uninsured Vermonters and those enrolled in Medicare pay for prescription medicines based on income, disability status and age.

DHMC Aging Resource Center

46 Centerra Parkway, 2nd floor
Lebanon, NH
(603) 653-3460
dhaging.org

Provides older adults, families and community members with information, education and support to help them live healthier and more informed lives. A lending library of books and DVDs, along with many free materials is available. Staff can help you with completing advance directives. Many free community classes and events offered.

New Hampshire Bureau of Elderly and Adult Services

129 Pleasant Street, Concord, NH
(603) 271-4680
www.dhhs.nh.gov/dcbcs/beas/index.html

The Bureau of Elderly and Adult Services (BEAS) provides a variety of social and long-term supports to adults age 60 and older and to adults between the ages of 18 and 60 who have a chronic illness or disability.

Support Groups

Helps people, caregivers and family members give and receive both emotional and practical support as well as exchange information. To find a support group in your area, please call your local hospital or one listed below:

New Hampshire

Dartmouth-Hitchcock Medical Center

Lebanon – (603) 650-5149

Easter Seals

Manchester – (800) 870-8728

HealthSouth

Concord – (603) 226-8843

Northeast Rehab Hospital

(603) 893-2900, ext. 3218

Parkland Medical Center

Derry – (603) 458-5648

St. Joseph Rehab Center

Nashua – (603) 882-3000

Valley Regional Hospital

Claremont – (603) 558-2123

Vermont

Fletcher Allen Health Care

Burlington – (802) 847-0142

Rutland Regional Medical Center

Rutland – (802) 446-2302

Southwestern Vermont Healthcare

Bennington – (802) 447-5137

National Resources

National Stroke Association

(800) 787-6537

www.stroke.org/site/PageNavigator/HOME

Provides free pamphlets on stroke, heart disease, prescription drug use, exercise and healthy living tips.

Eat Right

www.eatright.org

Provides information on health and nutrition and is run by the American Dietetic Association.

Heart Information Network

www.heartinfo.org

Offers current events, heart facts and special feature guides to different types of disease and how to find a provider.

National Heart, Lung and Blood Institute

Health information Center

(800) 575-WELL

www.nhlbi.nih.gov

Provides toll-free recorded health messages. The website provides information on prevention and treatment. It also offers free materials and helpful tools at the sites listed below:

Act in Time to Heart Attack Signs

www.nhlbi.nih.gov/actintime/index.htm

Heart-Healthy Recipes

www.nhlbi.nih.gov/health/public/heart/other/syah/index.html

High Blood Cholesterol: What You Need to Know

www.nhlbi.nih.gov/health/public/heart/chol/hbc_what.html

Live Healthier, Live Longer

www.nhlbi.nih.gov/chd

Your Guide to Lowering High Blood Pressure

www.nhlbi.nih.gov/hbp/index.html

Shape Up America!

www.shapeup.org

Offers information regarding fitness and weight management.

Medline Plus

medlineplus.gov

Provides a lot of information about stroke. It has a section on medications, an illustrated medical encyclopedia, interactive patient tutorials and the latest health news.

Post-Stroke Driver Evaluation Programs

These groups can be contacted to test if the stroke patient is ready to return to driving and if it may be helpful to add any adaptive equipment to the vehicle.

Adaptive Driving Associates

Bonnie Goodman, OTC, CDRS, CDI
220 Holiday Drive, Suite 24
White River Junction, VT 05001
Tel/Fax: (802) 296-2004

Rutland Regional Medical Center

Sheila McCullough, OTR
135 North Main Street
Rutland, VT 05701
Tel: (802) 747-1840
Fax: (802) 747-3856

Exeter Hospital

DriveAbility Program
Amanda Plourde, COTA/L, CDI, CDRS
4 Alumni Drive
Exeter, NH 03833
Tel: (603) 580-7927
Fax: (603) 580-7931

Fletcher Allen Health Care

Heather Zuk, OTR/L, CDRS, CDI
Fanny Allen Campus
Medical Office Building
792 College Parkway, Suite 102
Colchester, VT 05446
Tel: (802) 847-3140
Fax: (802) 847-5151

Northeast Rehab Center

Sarah Riley, OTR, CDI
70 Butler Street
Salem, NH 03079
Tel: (603) 893-2900, ext. 3212
Fax: (603) 898-8361

Glossary of Stroke Terms

This glossary contains a number of terms you may hear when your doctor talks about stroke.

ADLs	activities of daily living (things you do every day)
Ambulatory	walking or mobility
Aneurysm	weak or thin spot on an artery wall that has ballooned out from the wall and filled with blood, or damage to an artery leading to pooling of blood between the layers of the blood vessel walls
Anticoagulant	drug therapy used to prevent the formation of blood clots that can become lodged in cerebral arteries and cause strokes
Aphasia	inability to understand or create speech, writing or language in general due to damage to the speech centers of the brain
Arteriosclerosis	chronic disease characterized by abnormal thickening and hardening of the arterial walls, making them less elastic
Atrial fibrillation	irregular beating of the left atrium, or left upper chamber of the heart
Brain attack	another name for stroke
Carotid arteries	two major arteries, one on either side of the neck, that carry blood to the head
Carotid stenosis	narrowing of the carotid artery, which can result in blood clots
Cerebellum	back part of the brain that controls body movement (e.g., balance, walking)
Cerebrovascular accident (CVA)	another name for stroke
Cerebrovascular disease (CVD)	reduction in the supply of blood to the brain either by narrowing of the arteries through the buildup of plaque on the inside walls of the arteries, called stenosis, or through blockage of an artery due to a blood clot
CT scan	computed axial tomography scan; this is a test that shows three-dimensional pictures of the brain
Dysphagia	trouble eating and swallowing
Embolic stroke	result of a blood clot forming elsewhere in the body (usually the heart) and traveling through the bloodstream to the brain; in the brain, the clot reaches a vessel it cannot pass through and blocks the flow of oxygen-carrying blood

Hemiparesis	one-sided weakness
Hemiplegia	one-sided paralysis
Hemorrhagic stroke	sudden bleeding into or around the brain
High density lipoprotein (HDL)	another name for the “good” cholesterol; compound that helps remove cholesterol from the blood, preventing it from building up in arteries
Hypertension	abnormally high arterial blood pressure
Infarct; infarction	tissue death resulting from an inadequate supply of oxygen, due to a reduction or lack of blood flow to the area
Ischemic stroke	loss of blood flow to the brain, caused by an obstruction of the blood vessel, usually in the form of plaque stenosis or a blood clot
Low-density lipoprotein (LDL)	another name for “bad” cholesterol; a compound that carries the majority of the total cholesterol in the blood and deposits it on the inside of your arteries
MRI	magnetic resonance imaging test; it is a test like a CT scan that shows doctors images of the brain
Neglect	decreased attention to body and space, most commonly to one side of the body, following stroke
Paralysis	loss of voluntary movement of the limbs due to lack of strength
Paresis	weakness or partial paralysis
Plasticity	ability to be formed or molded; in reference to the brain, the ability to adapt to deficits and injuries
Stenosis	narrowing of a blood vessel due to the buildup of plaque on the inside wall of the blood vessel
Thrombotic stroke	most common type of stroke; this occurs when a clot blocks one of the blood vessels in the brain; it can result from the buildup of fatty deposits or cholesterol
Transient ischemic attack (TIA)	short-lived stroke that lasts from a few minutes up to 24 hours; often called a mini-stroke
Vein	vessel that carries blood back to the heart from various parts of the body; veins have thinner walls than the arteries because the blood they are carrying is under less pressure
Vertebral artery stenosis	narrowing of a vertebral artery, which can result in blood clots

Five Things You Need to Know About Stroke

1. What is a stroke?



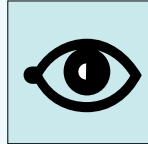


There are two kinds of stroke:

Ischemic ("is-keem-ik"): this type of stroke occurs when a blood vessel in the brain is blocked and brain cells are damaged because they don't get enough oxygen and nutrients.

Hemorrhagic ("hem-o-raj-ik"): this type of stroke occurs when a blood vessel in the brain ruptures and brain cells are damaged by the pressure of the blood.

The problems experienced after a stroke are the result of this brain damage. The specific problems you feel are related to the parts of the brain damaged by your stroke. These problems could include feeling unable to move one side of the body like you could before, numbness on one side of the body, problems with your speech, or visual problems.

2. Warning signs and symptoms of stroke

				
Sudden numbness or weakness of the 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, or loss of balance or coordination	Sudden, severe headache with no known cause

3. What to do if you're having symptoms and when to call for help



- Not all the warning signs occur in every stroke. Don't ignore signs of stroke, even if they go away!
- Check the time. When did the first warning sign or symptom start? You, or the person who is with you will be asked this important question later. This is very important! The treatments for stroke are much more effective if used early. Some of these treatments must be started in as little as 3 hours from the time your symptoms begin.
- If you have one or more stroke symptoms that last more than a few minutes, don't delay! Immediately call 9-1-1 or your local emergency medical service (EMS) number so an ambulance (ideally with advanced life support) can quickly be sent for you. Do not drive yourself.
- If you are with someone who may be having stroke symptoms, immediately call 9-1-1 or your local EMS. Expect the person to resist going to the hospital. Don't take no for an answer because "Time Lost is Brain Lost."
- When communicating with EMS staff or the hospital, make sure to use the word "**STROKE**."

4. What increases your risk for stroke



High blood pressure

- High blood pressure or hypertension is the number one cause of stroke.
- High blood pressure can damage the small blood vessels of the brain.
- High blood pressure is the most important controllable risk factor for stroke. Many people believe the effective treatment of high blood pressure is a key reason for the fast decline in the deaths from strokes.



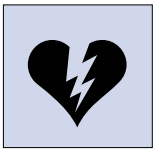
Cigarette smoking

Tobacco use in any form, especially cigarette smoking, is bad for your health. In recent years, studies have shown cigarette smoking to be an important risk factor for stroke. The nicotine and carbon monoxide in cigarette smoke damage the cardiovascular system in many ways. The use of oral contraceptives combined with cigarette smoking greatly increases stroke risk in women. Talk to your doctor about help with quitting smoking.



Diabetes

Diabetes is a risk factor for stroke. Many people with diabetes also have high blood pressure, high blood cholesterol and are overweight; all of these increase their risk even more. While diabetes is treatable, having the disease still increases your risk of stroke. Diabetes causes disease of small blood vessels in the brain and can lead to a stroke.



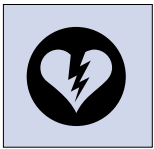
Carotid or other artery disease

The carotid arteries in your neck supply blood to your brain. A carotid artery narrowed by fatty deposits from atherosclerosis (plaque build-ups in artery walls) may become blocked by a blood clot. Peripheral arterial disease occurs when the blood vessels that carry blood to leg and arm muscles become narrow. It is also caused by fatty build-ups of plaque in artery walls. People with peripheral artery disease have a higher risk of carotid artery disease, which raises their risk of stroke. Causes of carotid artery disease are high blood pressure, diabetes, a diet high in fat, high cholesterol, and smoking.



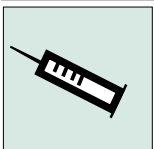
Atrial fibrillation

This heart rhythm disorder raises the risk for stroke. The heart's upper chambers quiver instead of beating regularly, which can let the blood pool and clot. If a clot breaks off, enters the bloodstream and lodges in an artery leading to the brain, a stroke will happen.



Other heart disease

People with coronary heart disease or heart failure have a higher risk of stroke than those with hearts that work normally. Dilated cardiomyopathy (an enlarged heart), heart valve disease, and some types of congenital heart defects also raise the risk of stroke.



High blood cholesterol

People with high blood cholesterol have an increased risk for stroke. High blood cholesterol can be reduced by eating right (avoid fried, fatty foods) and exercising regularly. It may also require medication.



Poor diet

Diets high in saturated fat, trans fat, and cholesterol can raise blood cholesterol levels. Diets high in sodium (salt) can contribute to increased blood pressure. Diets with excess calories can contribute to obesity. A diet containing five or more servings of fruits and vegetables per day may reduce the risk of stroke.



Physical inactivity and obesity

Being inactive, obese, or both can increase your risk of high blood pressure, high blood cholesterol, diabetes, heart disease, and stroke. So go on a brisk walk, take the stairs, and do whatever you can to make your life more active. Check with your doctor first, but try to get at least 30 minutes of moderate physical activity five days of the week, or 20 minutes of vigorous physical activity, three days a week.

**Age**

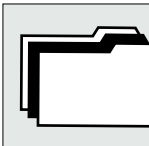
The chance of having a stroke more than doubles for each decade of life after age 55. While stroke is common among the elderly, a lot of people under 65 also have strokes.

**Heredity (family history) and race**

Your stroke risk is greater if a parent, grandparent, sister, or brother has had a stroke. African Americans have a much higher risk of death from a stroke than Caucasians. This is partly due to higher rates of high blood pressure and diabetes in this group.

**Sex (gender)**

Stroke is more common in men than in women. In most age groups, more men than women will have a stroke in a given year. However, more than half of total stroke deaths occur in women. At all ages, more women than men die of stroke. Women who take birth control pills, or are pregnant, have special risks for stroke.

**Prior stroke, TIA or heart attack**

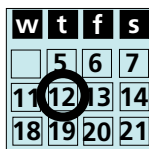
The risk of stroke for someone who has already had one is far greater than someone who has not had a stroke. Transient ischemic attacks (TIAs) are “warning strokes” that produce stroke-like symptoms but no lasting damage. TIAs are strong predictors of stroke. A person who’s had one or more TIAs is almost 10 times more likely to have a stroke than someone of the same age and sex who hasn’t. Recognizing and treating TIAs can reduce your risk of a major stroke.

5. What to do after you leave the hospital: follow-up care

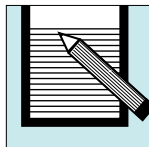


- You need to continue the medications prescribed after you leave the hospital in order to reduce your risk of another stroke or other cardiovascular issue. Medications must be taken as prescribed by your doctor in order for them to be effective.

The medicines are most effective when they help you lower each of the risk factors for stroke. Therefore, the doses of these medicines will likely need to be adjusted in order for them to work correctly, based on blood tests and other measurements made by your doctor after you leave the hospital. Don’t stop your medications without speaking to your physician first.



- It is important that you receive regular medical care after you leave the hospital. This is how the doctors can check to see if your treatments are working and make sure that your medicines are adjusted properly.



- Make sure you have a plan for which doctor(s) you will see and when to see them after you leave the hospital and be sure to have your list of medications with you for all doctor visits.

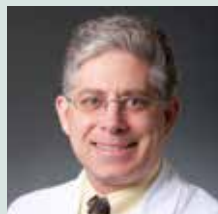


- Recovery after a stroke may continue for many months. You may benefit from working with rehabilitation therapists during your recovery. If a therapy program has not been arranged, please discuss this option with your health care providers.

Questions or Concerns?

If you have questions about stroke care at DHMC, please call one of our team members at **(603) 650-2830**

More information can be found on our website: **patients.d-h.org/stroke**



Dr. Timothy Lukovits



Robin Clark-Arbogast, ARNP



Rebecca Woods, RN, MSN



CEREBROVASCULAR DISEASE & STROKE PROGRAM



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