Chapter 5: Rehabilitation and Recovery

The Goal of Rehabilitation

The brain heals more slowly than many other parts of the body. Recovery from a stroke is different for each person. It can often take months or years to recover.

Your goal is to be as independent as you can. You may learn new skills, improve your physical condition and learn how to do tasks in different ways.

Because a person with a stroke has specific needs, recovery will be different for each person. The recovery often includes medical care, natural recovery, rehabilitation and the gradual return to your everyday activities.

It is important to follow your health care provider's instructions about recovery.

Rehabilitation usually starts in the hospital. You may continue with it after your hospital stay. Together, you and members of your health care team and care circle will make rehabilitation choices before you leave the hospital.

Rehabilitation Program

Your program may include:

- learning about your stroke
- learning ways to help you safely eat, brush your teeth, get dressed, bathe, do housework and go to the bathroom
- strengthening exercises for arms and legs
- learning how to do recreational activities
- receiving emotional support
- testing and treatment for problems with:
  - vision
  - driving
  - swallowing and eating
  - communication
  - reading and writing
  - memory, attention span and problem-solving skills

- learning how to:
  - take medicines
  - regain bowel and bladder control
  - get in and out of a chair, bed or car
  - position yourself in a bed or chair
  - get around your home and community
  - enjoy your favorite leisure activities.

Planning for Care After Your Hospital Stay

Making plans for when you leave the hospital is an important part of your recovery. Your health care team will work with you and members of your care circle to plan for your discharge. This planning begins early during your hospital stay.

Depending on your needs, your plan for discharge may include rehabilitation after your hospital stay. There are different types available.

The type of rehabilitation you will need depends on:

- your ability to take part in therapy
- your medical and nursing needs
- your care circle
- the resources available in your community.

Possible options for after your hospital stay are listed on page 53. A social worker or other member of your health care team will talk with you while you are in the hospital to help decide which option is right for you.

Rehabilitation Options

Tip

You may not need rehabilitation after your hospital stay. Talk with your social worker about your options.

Not everyone needs rehabilitation after a hospital stay. If you do, you have options. The type of rehabilitation you receive depends on your ability to take part in therapy, your medical and nursing needs, and your caregiver.

- ❑ **Hospital programs**
  These are for people who need doctor and nurse care every day. These programs are done in special rehabilitation hospitals or in "acute care" hospitals.

  You will stay in the hospital where you have therapy. The length of time you stay in a hospital program depends on your needs and goals.
- ❑ **Skilled nursing facility**
  This care is for people who need 24-hour care. You will receive short-term or long-term care for your health needs. Your stay will depend on your needs.
- ❑ **Transitional care unit (TCU)**
  This care is for people who need more help and health care services every day than what they can get at home. Most people stay in a TCU for 2 to 4 weeks. Your stay will depend on your needs.
- ❑ **Outpatient programs**
  These are for people who live at home. They go to a rehabilitation facility for treatment a few times a week.
- ❑ **Home care**
  These programs let people receive services in their own homes when they are unable to leave their homes.

Returning to Driving

Being able to drive may be a priority for you. It is important to know how your brain injury can affect your ability to drive.

Do not drive until your doctor says you are able. Your doctor may want you to take a comprehensive driver assessment to test your ability to drive safely.

Your brain injury may cause changes that could affect your ability to drive.

Vision and perception

Vision is what your eyes can see. Perception is how your brain understands what your eyes (and other body parts) are telling it.

- The following can make it hard to see the road or other vehicles:
  - blurry vision
  - double vision
  - loss of peripheral vision (not being able to see cars next to you)
  - visual neglect (you might miss signs or traffic hazards on the right or left side)
  - light sensitivity (glare from the sun or car headlights).
- You may have trouble judging distance and speed between your vehicle and other objects.

Fatigue

Fatigue (feeling very tired) can make it hard to have enough energy to drive safely.

When you get tired, your brain can't process all of the information it is getting. You can't focus and concentrate.

Fatigue puts you at risk for causing an accident such as not stopping at a stop sign, changing lanes without looking or falling asleep.

Cognition (attention and memory)

- Driving takes a lot of attention.
  - — You need to be able to focus and switch your attention quickly.
  - — You need to be able to identify what is important (such as vehicles around you, road work or the speed limit) and what isn't as important.
- Memory problems can make it hard for you to remember where you are going or what was happening around you.
- You might have trouble anticipating other drivers' actions or making the right decision on how to react. You might react too slowly or react without thinking about what could happen (such as switching lanes without looking).
- You might have trouble recognizing road signs or understanding written and spoken directions.
- Your insight or self-awareness might be affected. You might think you are OK to drive and know how to operate your vehicle yet you don't know your limits or know that you might not be safe to drive.

Physical ability

You may still be able to drive if you have issues with moving, strength and coordination. Adaptive equipment such as a wheelchair lift, hand controls or swivel seating can be installed into your vehicle.

- Talk with your doctor to learn if adaptive equipment for your vehicle is right for you. This can help you return to driving safely.
- You will need an assessment to identify what equipment you need. You will need training to learn how to use the adaptive equipment.
- You will need to pass the Minnesota road test to have the adaptive equipment added as a restriction on your driver's license.

Emotions

Driving can be overwhelming. You might:

- have trouble staying calm
- get frustrated with other drivers or bad weather
- worry about driving if your brain injury happened in a motor vehicle accident.

Consider talking with a mental health care provider, a driver rehabilitation specialist or both. They can help you get ready to return to driving.

Videos to Watch

Making Lives Work is a series of videos describing how Courage Kenny Rehabilitation Institute can help after a stroke. Scan the QR code with your phone or visit allinahealth.org/courage-kenny-rehabilitation-institute/about-us/making-lives-work.

Medicines can affect your ability to drive

Some medicines cause side effects that can affect your driving.

- Prescription medicines can make you dizzy, blur your vision or relax your muscles.
- Over-the-counter medicines (including vitamins, naturals and herbals) can interact with your prescribed medicines. This means your medicines might work stronger or weaker than they should.

Important: Before you drive, check with your doctor or pharmacist if you:

- have questions about your current medicines
- have changes to your medicines
- have a new prescription medicine
- are thinking about taking a new or different medicine.

Whom to contact for more information

For more information about the Courage Kenny Rehabilitation Institute's Driver Assessment and Training Services:

- go to account.allinahealth.org/services/583
- call 612-775-2829
- send an email to CKRIDrivingService@Allina.com.

Role of Your Care Circle

Tip

See Chapter 7 for information just for members of the care circle.

Members of your care circle are important to your recovery. They need to understand what you are going through and how the stroke has affected you.

The adjustment may be easier if your care circle knows how to handle problems that may come up after you leave the hospital. Your care circle can also help by giving you support and encouragement.

You can let members of your care circle can help you recover by:

- knowing that your progress may be slow
- visiting and talking with you
- sitting with you in silence
- letting you know you are still needed and important
- supporting your rehabilitation decisions
- becoming educated about your condition and recovery
- going or asking to go to therapy sessions
- supporting and encouraging you to meet your milestones during your recovery
- showing confidence in your improvement
- working with members of your health care team to create a healing environment at home
- sharing responsibilities
- being realistic in knowing you may have recovery limits.

Tips for Reducing Stress During Your Recovery

- Take your recovery one day at a time. Be hopeful for a successful recovery.
- Create a regular routine or write lists of what needs to be done to help plan and organize your day.
- Appreciate each small gain. Your emotions and ability to do things may vary from day-to-day because of fatigue. You may need to learn how to do things in different ways or try new ways of doing tasks, talking, speaking and organizing your social life.
- Expect that members of your care circle will improve their skills and knowledge. They are learning right along with you.
- Plan for breaks so you and members of your care circle are not together all the time. Time apart is important for both you and these individuals. Try to do activities that get you both out of the house.
- Ask family members and friends to help.
- Try relaxation, massage or meditation to cope with your stress.
- Track your progress on a calendar with big days. Write what you can do each day. Remember: you will see both good and bad days.
- Join a support group.

Be patient with and kind to others. You may feel irritated or upset some times, but do not blame anyone. Do not take your frustrations out on others. Talk with a family member, friend, professional or support group about your feelings.

Progressive Muscle Relaxation

Progressive muscle relaxation is a short and easy exercise to help you relax and relieve some of your pain.

Getting started

Find a relaxing position. You may sit down or lie on your back in bed. Be sure your legs and hands are not crossed.

You may close your eyes. If you prefer, you can keep your eyes open, but focus on one spot in front of you.

Bring your attention to your breathing. Think about where your breath comes in and out of your nose or mouth. Think about how your chest moves up and down with each breath.

Imagine a gentle, safe wave of relaxation that will slowly and warmly flow through your body. The wave can help you find those places that need to relax and give them permission to relax.

You can also imagine this wave in any way you find most comfortable. You may see it as light, water or just a feeling.

If your mind wanders, gently bring it back to your breathing.

Relax from your head to your feet

- Bring your attention to the top of your head and begin to imagine a wave.
- With your next breath out, feel the wave flow through your head. Feel your jaw soften and relax.
- Breathe in.
- With your next breath out, focus on the back of your neck. Let it soften and relax.
- Breathe in.
- With your next breath out, imagine the wave moving through each arm all the way to your hands. Feel your hands become slightly heavier where they are lying.
- Breathe in.
- With your next breath out, imagine the wave of relaxation roll gently and safely down your spine. Let all of your back muscles relax and soften.
- Continue to breathe. Feel the wave flow as you breathe out.
- Let the wave flow through your pelvic area and hips into your upper legs and thighs.
- Breathe in.
- With your next breath out, allow the wave to find those areas in your legs and knees that need to relax. Give them permission to relax.
- Breathe in.
- With your next breath out, feel the wave move into your calves, then your feet. Feel your feet become a little heavier.
- Take two deep breaths. Imagine any remaining stress gently flowing out the bottoms of your feet.

Take a moment to observe the still place you created.
With practice, relaxation will become easier.

Nutrition

General Tip

According to the United States Department of Agriculture, you should:

- eat smaller portion sizes
- make half of your grains whole
- make half of your plate vegetables and fruits
- drink fat-free or low-fat milk
- eat lean proteins.

Be sure to drink six to eight 8-ounce glasses of liquids (especially water) each day.

Visit myplate.gov for more information.

Important

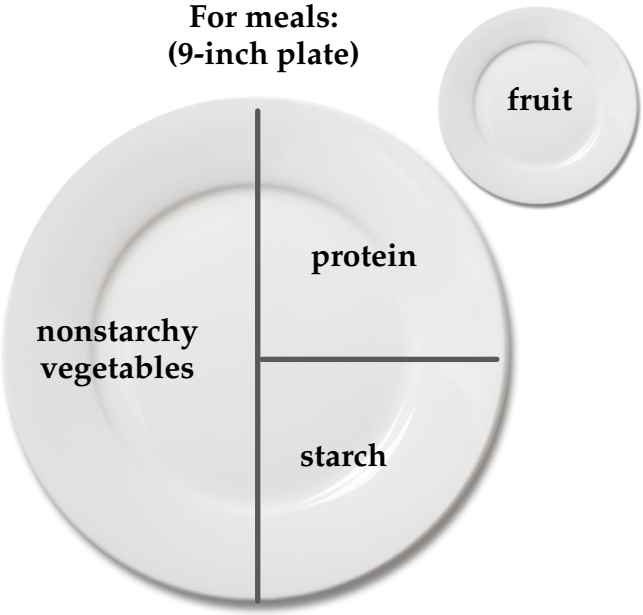
Talk with your health care provider if you have questions about your nutrition and recovery.

Eating well-balanced meals and snacks will help you recover quickly and help you feel your best. What you eat after your brain injury affects your well-being.

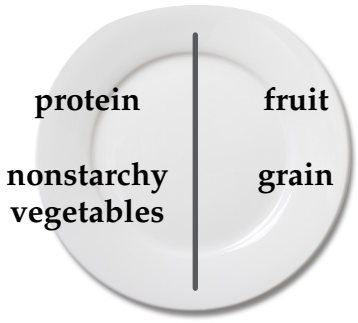
If you do not eat enough of the right foods, you will become tired and less able to take care of yourself. Be sure you make time to eat — even if you do not feel hungry.

When you are planning your meals and snacks, try to think about what your plate should look like.

For meals:
(9-inch plate)



For snacks:



Non-starchy vegetables: broccoli, green beans, cauliflower, carrots, salad

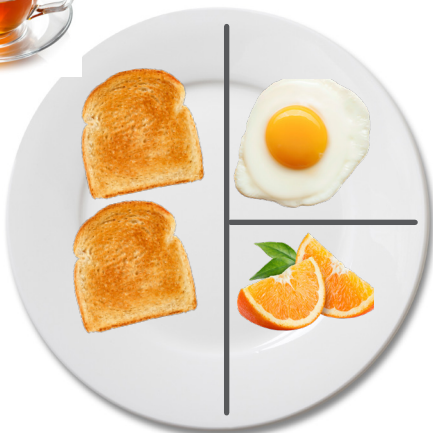
Protein: meat, poultry, fish, nuts/seeds, eggs, tofu

Starch: potato, rice, pasta, legumes, corn

Here are some examples of well-balanced meals and a snack.

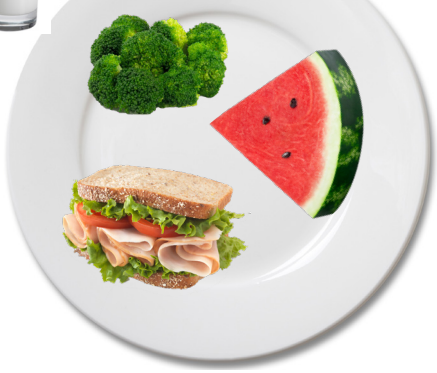
At breakfast:

- plain tea
- 2 pieces dry toast
- 1 fried egg
- 2 orange wedges



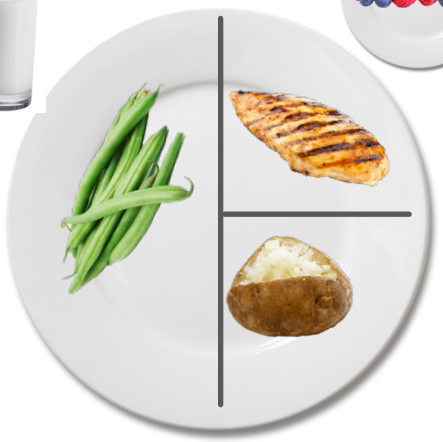
At lunch:

- 1 glass low-fat milk
- 1 turkey sandwich with 2 pieces whole grain bread, tomato and lettuce
- side of broccoli
- 1 slice watermelon



At dinner:

- 1 glass low-fat milk
- 1 grilled chicken breast
- 1 baked potato, plain
- green beans
- 1 serving of mixed berries



For a snack:

- 1 glass water
- 1 apple
- 2 slices cheddar cheese

Tip

Eat foods high in vitamin C to help absorb the iron that comes from plants such as spinach.

For example, eat an orange with an iron-fortified cereal.

Good sources of vitamin C are broccoli, tomatoes, kiwi, strawberries, peppers, potatoes and cabbage.

Nutrients important for your recovery

Eating foods rich in the following nutrients are important for your recovery.

- **Protein:**
  Protein helps repair and build healthy tissue.
- **Iron:**
  Iron works in each of your body's cells to help make energy.
- **Vitamin C:**
  Vitamin C helps your body repair damaged tissues, keeps your bones and teeth strong, and helps your body absorb iron.
- **Calcium:**
  Calcium helps build and maintain your bones, your muscles move, your blood clot, and your nerves send messages.
- **Fiber:**
  Fiber helps your body produce regular bowel movements.

Your Exercise Program

Why exercise is important

Getting regular exercise will help:

- prevent another stroke, if you had one
- maintain a healthy weight
- reduce the risk for heart disease, diabetes, obesity, certain cancers and joint conditions
- reduce levels of anxiety and stress
- improve your self-esteem and confidence
- improve concentration and memory
- maintain good blood pressure and cholesterol levels
- give you an overall feeling of well-being
- build endurance and increase your metabolism
- you relax and sleep better
- provide healthy blood flow to your brain
- improve your mood
- improve your thinking and memory
- improve your walking ability
- treat your pain.

Your goals

- Your eventual goal is 30 minutes of exercise at least 3 to 5 days each week. Aerobic exercise uses large muscle groups and raises your heart rate (like biking, walking and swimming).
- During aerobic exercise you should be able to talk (singing would be hard).
  - — Your rate of perceived exertion (how hard you are working) should be between light and somewhat hard.

How you can exercise

- Follow your exercise program from your physical therapist or doctor:
  - ❑ aerobic exercise
  - ❑ strength training
  - ❑ flexibility and balance.
- Ask your physical therapist or primary care provider if you do not have an exercise program or if you are having a hard time starting one.

- Do what you can based on your abilities.
- Walk around your house.
- Walk around your neighborhood.
- Do something you enjoy. Dance to your favorite songs.
- Join a fitness center (if you are able).
- Start small.
  - — Exercise for 5 minutes 5 times a day.
  - — Add 1 to 3 minutes each day as you are able.

Signs you are doing too much

As you exercise you should be aware of your body's response. Signs you are doing too much include:

- feeling dizzy or lightheaded
- nausea (upset stomach) and vomiting (throwing up)
- cold sweat
- being short of breath (unable to have a conversation)
- exhaustion or unusual fatigue (very tired)
- feeling as if your heart is suddenly racing or pounding
- any chest pain or pressure in your teeth, arm, jaw, ear, neck or between your shoulder blades.

Call your doctor if the symptoms do not go away after resting. Call 911 if you cannot reach your doctor. Do not drive yourself to a clinic or Emergency Department.

Tobacco Use is Dangerous

Did You Know

- Smoking doubles your risk for stroke.

  Source: Illinois Department of Health

- Smoking causes nearly 1 out of every 3 deaths from heart disease and stroke.

  Source: Centers for Disease Control and Prevention

- Cigarette smoke contains more than 7,000 chemicals. More than 70 can cause cancer.

  Source: U.S. Food & Drug Administration (FDA)

Tobacco products include cigarettes, electronic nicotine delivery systems (ENDS, includes e-cigarettes), cigars, smokeless tobacco (dip or chew), hookahs, pipes, roll-your-own, and oral nicotine products.

Tobacco use is especially dangerous to your blood vessels and arteries. It can cause atherosclerosis, a build-up of plaque (fatty substances found in your blood). Over time, the plaque hardens and narrows your blood vessels and arteries.

Smoking also makes the blood vessels and arteries sticky. This leads to "obstructions" in blood flow, meaning that your blood cannot flow easily.

The side effects of using tobacco can result in needing stents, coronary artery bypass surgery or both to keep your blood vessels and arteries open. It can also lead to stroke or heart attack.

Tobacco use:

- causes stroke and heart disease
- increases your heart rate
- increases your blood pressure
- lowers your good (HDL) cholesterol
- makes your heart work harder (adding stress to scarred or weakened blood vessels and arteries)
- can interfere with how well your heart medicines work.

Smoking even 1 cigarette a day:

- causes your heart rate and blood pressure to increase, and your major blood vessels to become smaller, causing your heart to work harder
- causes your blood to clot faster; tobacco users have a higher chance of stroke and heart attack
- reduces the amount of oxygen in your bloodstream, making you short of breath
- slows your ability to heal.

Secondhand smoke

Secondhand smoke is a mixture of smoke coming from the burning tips of cigarettes, pipes and cigars and smoke exhaled by someone who is smoking.

Anyone around secondhand smoke breathes in the chemicals from the tobacco smoke. Secondhand smoke causes death and disease in people who do not smoke. Secondhand aerosol from vaping is also not safe. The aerosol has many of the same residual chemicals as cigarettes.

Even briefly breathing secondhand smoke can damage the lining of blood vessels and cause your blood to become stickier. These changes can cause a deadly heart attack.

Did You Know

Smokeless tobacco is not a safe alternative to smoking.

In addition to nicotine, it contains *a lot* of sugar. This can make it harder to control your blood glucose levels.

Smokeless tobacco

Smokeless tobacco is also called spit tobacco, chewing tobacco, chew, plug, snuff or dip. Smokeless tobacco contains a mix of 4,000 chemicals, including as many as 30 or more that are linked to cancer, according to the FDA.

For example, the nicotine levels in 1 tin of smokeless tobacco is roughly equal to 4 packs of cigarettes. These chemicals move from your mouth to all parts of your body through your bloodstream. It affects your heart by increasing your heart rate and blood pressure. This can lead to a stroke.

E-cigarettes

E-cigarettes are known by many names such as e-cigarettes, e-cigs, vapes and electronic nicotine delivery systems (ENDS).

These products use an "e-liquid" found in pre-filled or refillable cartridges, disposables or pods. The liquid is heated to create an aerosol that the user breathes in. The heat can turn some of the chemicals into known cancer-causing chemicals.

- The liquid that goes in the e-cigarettes can contain:
  - **nicotine**
    - Nicotine is the addictive drug in tobacco.
  - **chemical flavorings**
    - Current studies show "flavors" added to e-cigarettes are harmful. They are linked to problems with the heart, lungs and brain.

Did You Know

E-cigarettes can cause many harms to your body such as seizures, lightheadedness, vomiting, nausea, rapid heart rate, and abnormal heart rhythms.

- Users can be exposed to a significant amount of nicotine. Different brands can deliver the same amount of nicotine as low as 2 packs of cigarettes and as high as 19 packs of cigarettes, depending on the number of puffs in the device.

Heated tobacco products

Heated tobacco products heat a processed tobacco leaf. When you take a puff, you breathe the nicotine from the tobacco leaf into your lungs.

These products are marketed as "heat-not-burn" products. Research suggests that heated tobacco products contain many of the same harmful ingredients as regular cigarettes and others.

The chemicals in the air from heated tobacco products contain lower levels of harmful ingredients than the smoke from regular cigarettes. This does not mean heated tobacco products are safe.

Oral nicotine products

Oral nicotine products are available as gum, pouches, lozenges, toothpicks and gummies. These products can deliver nicotine levels as low as 2 milligrams and as high as 12 milligrams.

Beware of any oral nicotine products that market themselves as "safer" or "cleaner" than tobacco. They claim to be "tobacco-free" or promote their products as a safer way to quit using tobacco.

Whether the nicotine comes from a leaf (natural) or the lab (synthetic), it is dangerous.

Benefits Of Quitting Tobacco

Did You Know?

In 1 year of quitting smoking, your risk of heart disease is reduced by more than half. Quitting also reduces the risk of a second heart attack if you've already had one.

Source: National Institutes of Health

Within...

- **8 hours:**
  The carbon monoxide level in your blood drops to normal and the oxygen level in your blood increases to normal. Your breathing starts to improve.
- **24 hours:**
  Your chance of a heart attack decreases.
- **48 hours:**
  Nerve endings start to grow again. Your senses of smell and taste improve.
- **2 weeks:**
  Your circulation improves and your lung function increases.

- **1 to 9 months:**
  Your cough, stuffy nose and shortness of breath decrease. Your energy level increases.
- **1 year:**
  Your chance of heart disease is cut in half.
- **4 to 5 years:**
  Your chance of a stroke is the same as someone who does not use tobacco. Your chance of dying from lung cancer is cut in half.
- **5 to 10 years:**
  Pre-cancerous cells are replaced with normal cells.
- **10 years:**
  Your risk of cancer, stroke, and heart disease is close to the same of someone who has never used tobacco.

Source: World Health Organization

Quitting Tobacco

Getting started

- Make a list of reasons for quitting.
- Think positively.
  - — Believe you can.
  - — Remind yourself, "I'm choosing not to smoke today."
  - — Remember that it's "not that I can't smoke, it's that I'm choosing not to."
  - — Tell yourself often: "I can do this."
  - — Visualize yourself as someone who doesn't use tobacco.
- Use relaxation breathing.
  - — Inhale to count of 8.
  - — Hold to count of 4.
  - — Exhale to count of 8.
- Substitute items for cigarettes.
  - — Chew gum.
  - — Suck on hard candy.
  - — Chew on straws or toothpicks.
  - — Eat low-calorie snacks.

- Keep your hands busy.
  - Play cards.
  - Read books.
  - Put together puzzles.
  - Play with rubber binders.
  - Make crafts.
  - Write letters.
  - Draw.
  - Paint.
- Concentrate on the good things in your life!
- Change your environment:
  - Change your routine to help avoid temptation. Even small changes can lower the craving to smoke.
  - Get rid of all cigarettes, ashtrays and lighters in your home, car, desk or office.
  - Change your favorite smoking areas to make them remind you less of smoking.
  - Make your home and vehicles smoke free.
- Get support from others:
  - Talk to your family, friends or coworkers about how to support you while you quit.
  - See if others you know would like to quit with you. This way you can support each other through the tougher times of quitting.
- Plan your reward for each day you do not smoke. Think about small, pleasurable activities you can do during your day that give you joy. Long-term rewards are helpful as well, but the small rewards are just as important.
- Remember that even the most intense craving lasts only 5 to 10 minutes. Wait it out. Tell yourself, "This too shall pass."

Avoiding a relapse

- Think about what you are gaining from quitting tobacco, instead of focusing on what you've given up. For example, "It's easier to play with my kids or grandkids."
- Have a plan for how you will deal with unexpected urges. (Take a walk, make a call.)
- Think your way through difficult situations ahead of time whenever you can.
- Think about past quitting attempts and what was helpful to you. Reuse them again if possible or try something new.
- Explore ways to move your body with safe and realistic expectations. Increasing your physical activity can help you manage weight gain and work through emotions that otherwise would make you want to smoke.
- Avoid foods high in calories and fat. Sugar can increase cravings to smoke. Limit large amounts of sugar.
- Drink lots of water. Ice water may be helpful in getting rid of a craving.
- Reward yourself when you reach milestones: 1 day, 1 week, 2 weeks, 1 month, etc.
- Go to places where you cannot smoke. Stay away from the places you used to smoke.
- Think about the money you saved!
- Think of quitting as an act of love for those you care about and for yourself!

Resources for Quitting Tobacco

Product-specific Resources

- financial aid Nicotrol® inhaler
  - 1-844-989-PATH (7284)
  - pfizerrxpathways.com
- Plant Extracts aromatherapy
  - 1-877-999-4236
  - plantextractsinc.com

***There may be a cost to you. Check with your insurance provider.**

Allina Health (if you had a recent hospital stay)

- Tobacco Intervention Program at Abbott Northwestern Hospital
  - 612-863-1648
- Tobacco Intervention Program at Mercy Hospital
  - 763-236-8008
- Tobacco Intervention Program at River Falls Area Hospital
  - 715-307-6075
- Tobacco Intervention Services at Allina Health United Hospital – Hastings Regina Campus
  - 715-307-6075
- *United Hospital Lung and Sleep Clinic Tobacco Cessation Program
  - 651-726-6200
- *Penny George™ Institute for Health and Healing (LiveWell Center) tobacco intervention coaching
  - 612-863-5178

Other

- Quit Partner
  - 1-800-QUIT-NOW (1-800-784-8669) or quitpartnermn.com
  - American Indian: 1-833-9AI-QUIT or aiquit.com
  - Spanish: 1-855-DEJELO-YA (1-855-335-3569) or quitpartnermn.com/es
  - asiansmokersquitline.org
- online tobacco cessation support
  - smokefree.gov
- American Lung Association/Tobacco Quit Line
  - 651-227-8014 or 1-800-586-4872

My Quit Plan