Rehabilitation After Brain Injury

at Dodd Rehabilitation Hospital

THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

Table of Contents

About Brain Injury

About Your Rehabilitation 3
Types of Brain Injury 4
Stages of Recovery 7
Physical Changes 13
Seizures 15
Cognitive Changes 17
Communication Problems 19
Behavior Changes 20
Emotional Changes 23
Depression 24

Nursing Care and Rehabilitation

Preventing Deep Vein Thrombosis (DVT) 25
Bowel Care 26
Bladder Care 27
Positioning for Impaired Mobility 28
Recommendations for Daily Activities 30
Relaxation Techniques 32
Gentle Seated Yoga 34
You Are Still a Sexual Person after Brain Injury 38

Preparing for Discharge

Planning for Discharge from Dodd Rehabilitation Hospital 40
Brain Injury Resources 43

For a digital copy of this book, please visit go.osu.edu/pted3520.

This is for informational purposes only. Talk to your doctor or health care team if you have any questions about your care.

For more health information, go to **wexnermedical.osu.edu/patiented** or contact the Library for Health Information at 614-293-3707 or health-info@osu.edu.

© 2015 – November 1, 2023, The Ohio State University Wexner Medical Center

About Your Rehabilitation

Starting your recovery

After a traumatic brain injury (TBI), the goal of rehabilitation is to return you to the highest quality of life at home, at work, and in the community. We offer many types of therapy to help you with your recovery.

The therapy is tailored to you, so you will be involved in planning your treatment. While you are at Dodd Rehabilitation Hospital, our health care team will do all we can to support you, your family, and your caregivers as you recover.

This book will be used to help teach you while you are in the hospital and is yours to keep as a resource when you leave. If you do not understand anything, please let your health care team know and they will explain another way.

Rehabilitation overview

We offer many types of therapy to help you with your recovery. You will take part in your own care and practice the skills learned in therapy in your room with the help of nursing staff. The therapy is tailored to you, so you will be involved in planning your treatment.

Therapy goals

We will work with you to improve your ability to:

- Swallow safely
- Communicate with family and friends
- Interact well with family, friends and staff
- Concentrate when doing tasks
- Do more than 1 task at a time
- Stand and walk without help
- Safely move in your environment
    - This includes being able to move in and out of bed, on and off the toilet, in and out of the car, in and out of the shower/ bathtub, up and down stairs, and on and off the floor.
- Do an activity over a long period with no breaks.
- Dress, groom, eat, and bathe.
- Clean, cook, and make plans.
- Do hobbies, leisure activities, and sports.

Therapy strategies

Practice the skills and exercises you learn from your health care team members (doctors, nursing staff, dietitians, and therapists) when you are in your room. Your progress is reviewed by staff each week.

Therapy strategies:

- Are task focused and tailored to your physical needs and lifestyle.
- Improve a skill with repetition.
- Address the different ways in which you move.
- Are challenging so that progress is made over the long term.

You may see the most improvement and recovery the first two years after your brain injury.

Types of Brain Injury

A brain injury can range from a mild concussion to a severe head injury. It is caused by a blow to the head or body, a wound that breaks through the skull, a fall, or another injury that jars or shakes the brain.

With rest, most people fully recover from a mild brain injury. But some people who have had a severe or repeated brain injury may have lasting problems with movement, learning, or speaking. This overview of some types of brain injury includes signs of brain injury and treatment options. Talk to your doctor and health care team if you have questions.

Concussion

A concussion is the most common type of traumatic brain injury. It results from a fall or hit to the head that causes the brain to twist and turn inside the skull.

There are many ways to get a concussion. Some common ways include fights, falls, playground injuries, car crashes, and bike accidents. Concussions can also happen while participating in any sport or activity such as football, boxing, hockey, soccer, skiing, or snowboarding.

Normally, the fluid around your brain acts like a cushion that keeps your brain from banging into your skull. But if your head or your body is hit hard, your brain can crash into your skull and be injured.

A concussion may cause bruising, bleeding, or swelling of the brain. A skull fracture may occur along with a concussion.

It is not always easy to know if someone has a concussion. You don't have to pass out (lose consciousness) to have a concussion.

Symptoms of a concussion range from mild to severe and can last for hours, days, weeks, or even months.

Signs of a concussion include:

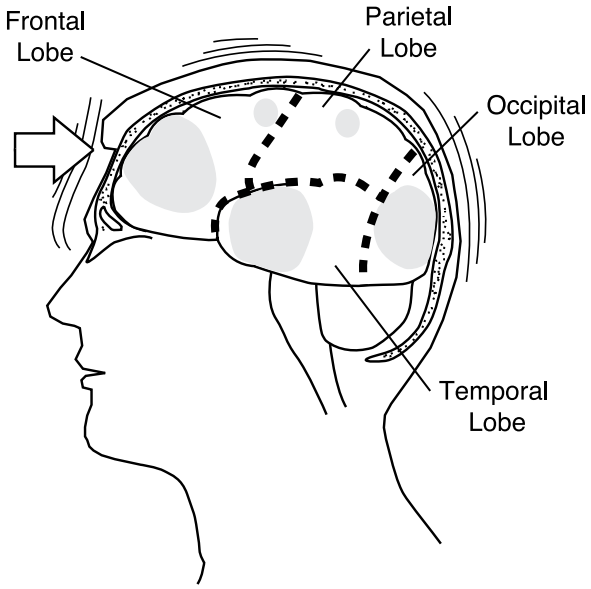
- A brief change in consciousness
- Confusion
- Headache
- Nausea or vomiting
- Fatigue or tired with no energy
- Blurred vision
- Sleeping problems
- Memory loss
- Personality changes

A concussion is normally not life threatening, but it can be serious.

Contusion

Contusion means bruise. It is another form of traumatic brain injury. When the head is hit, the brain moves back and forth inside the skull. When the brain is pushed up against the ridges and sides of the skull, bruising to the brain can occur.

Because a big force is needed to create a contusion, the person may also have other brain injuries. These could include bleeding inside the brain, skull fractures, or more than 1 contusion.



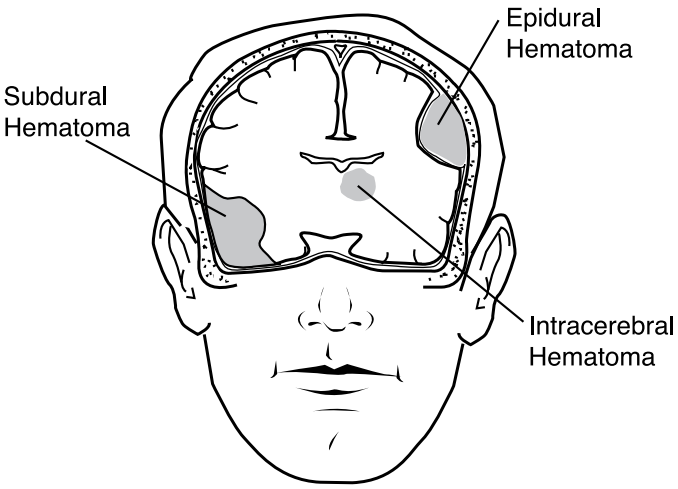
Contusions can cause:

- Brain swelling
- Higher pressure inside the skull
- Coma
- Seizures
- Brain damage

It often takes a long time for the person to recover from this injury. The location of the contusion and the amount of damage impacts recovery time.

Hematoma

A hematoma is a form of brain injury that involves a pool or collection of blood outside of the brain's blood vessels. The blood vessels may be torn as a result of skull fractures or shearing injuries. Hematoma may develop right after a brain injury or later, causing brain swelling, higher pressure in the skull, or coma. More than 1 type of hematoma can occur.



Types of hematoma:

- **Epidural hematoma:** Epidural means above the dura. The dura is the tough outer cover layer on your brain between your brain and your skull. The bleeding is between this layer and your skull.
- **Subdural hematoma:** Subdural is below the dura. The bleeding is between the brain and the dura layer.
- **Intracerebral hematoma:** Intra means inside and cerebral means brain. The bleeding is inside the brain tissue.

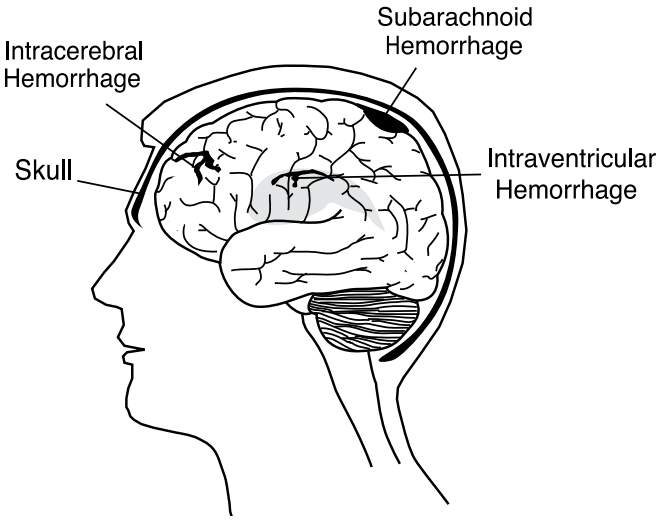
Treatment of hematoma:

Surgery may be done to remove the hematoma. Whether surgery is done depends on where the hematoma is and whether it is getting larger or causing any problems. Recovery depends on the seriousness of the injury and whether other brain injuries occurred with the hematoma.

Cerebral hemorrhage

This means bleeding in the brain. It is a moderate to severe form of brain injury. The site of the bleeding is used to name the type of hemorrhage.

- **Subarachnoid hemorrhage:** Bleeding over the outer surface of the brain.
- **Intraventricular hemorrhage:** Bleeding into the fluid filled chambers of the brain, called ventricles. The cerebrospinal fluid (CSF) becomes blood tinged.
- **Intracerebral hemorrhage:** Bleeding into the brain tissue.



Signs of hemorrhage include:

- Sudden severe headache
- Change in wakefulness or confusion
- Nausea and vomiting
- Irritable
- Restless
- Light sensitivity
- Stiff neck
- Seizure
- Weakness in arms or legs
- Back and leg pain or stiffness
- Fever

Treatment depends on the severity and location of the bleed. Treatment may include surgery and medicines. Recovery depends on how severe the bleeding is and whether there are problems from the bleeding.

Diffuse axonal injury (DAI)

An injury where the brain slides back and forth inside the skull, causing the brain's nerves to be stretched or torn. Damage to the brain may be widespread. When the nerves are torn, they die. It is a moderate to severe form of brain injury.

Signs seen with this injury include:

- Coma
- Abnormal movement of arms and legs
- Higher pressure inside the skull
- High blood pressure
- High body temperature

The recovery process can take a long time. The person with this injury may be in a coma for months.

Anoxia

Injury to the blood flow of the brain may cause anoxia or a lack of oxygen to the brain. The brain does not store extra oxygen and is very sensitive to changes in oxygen levels.

Signs of anoxia may include:

- Memory loss
- Higher pressure in the brain, called intracranial pressure
- Loss of consciousness

Treatment of anoxia includes:

- Supporting breathing and blood pressure
- Giving medicine to reduce brain swelling
- Treating the cause of anoxia, if possible

How long and how much of the oxygen supply was blocked determines lasting effects, which may include:

- Minor loss of function
- Changes in behavior or speech
- Memory changes
- Visual changes up to blindness
- Seizures
- Long term coma
- Brain death

Stages of Recovery

Recovery scale

Recovery after brain injury is a process that occurs in stages. Some people move quickly through the stages, while others make slow, but steady gains. The **Rancho Los Amigos Revised Scale,** also called the **Ranchos Scale**, is 1 scale that measures improvement. There are 10 stages. You may find this scale helpful to follow your loved one's progress.

Progress through the levels may not happen all at once. A person may return to a lower stage because of fatigue, frustration, or other changes during the day. Watch for changes towards the next higher stage. It may be frustrating when you do not see changes from day to day. Remember, gradual progress over time is more important.

Level 1 – No Response: Total Assistance

- The person is in a coma and may appear to be asleep.
- The person may be restless.
- They do not respond to sounds, sights, touch, or movement.

Level 2 – Generalized Response: Total Assistance

- The person is semi-comatose.
- They begin to respond to sounds, sights, touch or movement.
- Response is slow, inconsistent, or occurs after a delay.
- The person responds or mimics what is heard, seen, or felt. Response may include: chewing, sweating, faster breathing, moaning, moving, or increased blood pressure.

To help your loved one during level 1 and 2 recovery:

- **Talk to the person about familiar items** (people, places, activities) in a calm voice. Do not talk about their condition.
- **Do not talk in front of the person as if they were not there.** They may be able to hear you even if they do not respond.
- **Keep messages short when talking to the person.**
- **Stimulate the person's senses.** Use touch, smell, light, sound, and temperature for 5 to 15 minutes. Play their favorite music, television show, and taped messages from family members. Bring in familiar, favorite items, such as cologne, flowers, and scents from foods. Take breaks between stimulation bouts, so you do not overwhelm the person.
- **Change the person's surroundings to prevent too much stimulation or too little stimulation.** For example, when visiting, turn off the TV. When no visitors are present, request that the nursing staff play favorite music or turn on the TV for short periods of time.
- **Touch the person gently when talking.**
- **Tell the person who you are every time you enter or leave the room.**
- **If the person's eyes are open, encourage eye contact.**

Level 3 – Localized Response: Total Assistance

- The person appears more alert. They may react to what is seen, heard, or felt. For example, the person may follow you with their eyes or turn the head towards or away from a sound.
- When the person feels pain, an arm or leg may move, and they may cry out.
- The person may follow simple commands, like “close your eyes.”
- The person may show signs of knowing family or friends.
- The person may start to respond to discomfort by pulling tubes or drains.
- Responses are inconsistent.

To help your loved one:

- **Try Level 1 and 2 activities.**
- **Call the person by name and introduce yourself to help orient them.**
- **Keep interaction simple.** Use short and simple sentences.
- **Encourage the person to do simple tasks**, such as nodding their head to mean “yes or no.” Allow enough time for a response. Check back to make sure you understood movements correctly if the person cannot speak.
- **Provide basic information.** Keep the person oriented by stating the place, day of the week, time, and daily activities.
- **Give visual cues.** Keep a clock and calendar nearby. Decorate the room with pictures of family, friends, and pets.
- When interacting, **reduce outside noise**. Turn off the TV or radio and pull the privacy curtain.
- **Establish a routine for the person.**
- **Always give the person praise when progress is made.**
- **Allow the person scheduled and routine rest periods** to support the sleep-wake cycle and to reduce stimulating them too much.

Responses may not always be the same. The person may be able to follow a command or voice a response one day, but not the next day. Be patient. They may be frustrated just as you may be frustrated.

Level 4 – Confused/Agitated: Maximal Assistance

- This stage can be hard on families and friends.
- The person may not understand what is happening (gets confused) and be scared.
- They may try to remove all restraints; kick, hit, or bite others; pull out tubes, and crawl out of bed.
- The person may overreact due to confusion by screaming or saying things that are not appropriate. They may make up stories to overcome internal confusion and fear, also known as confabulation.
- The person’s mood may swing from pleasant to aggressive without clear warning.
- Often, the person’s attention span is very short and they may lack short term recall. Memory may be limited only to past events.
- The person may be focused on basic needs like eating, going to the bathroom, or dressing, and they need help with these activities.

To help your loved one:

- **Provide a calm, orderly, structured, and consistent environment.** Tell your loved one they are safe. Avoid bright lights and loud noises. Limit visitors to 2 people in the room at a time.
- **Keep conversation and interaction simple.** Keep messages short. The person's ability to stay focused and keep attention may be short.
- **Frequently orient the person to place, date, and time, and what is happening.** Provide a written schedule of daily events, such as times for different therapies. Provide the person with a watch or clock. Hang a calendar in their room and keep it current. Decorate the room with familiar pictures.
- **Help the person to remember past events as they happened.**
- **Allow the person simple choices**, such as what clothing to wear or what food they want to order.
- **If the person becomes upset or agitated, stop the interaction.** If needed, change the subject or leave the room for a short time. It is safer to redirect the person than to try to reason or argue with them. If the person becomes aggressive, call the nurse for help.
- **If the person has a safety belt on, do not unbuckle or remove it.** Often, safety belts are needed for the person's safety. Medicines may be used if the person is at risk of harming them or others.
- **Avoid upsetting the person**. Do not yell or raise your voice to get their attention.
- **Do not agree with confused statements.** Direct the person back to reality. Give simple and clear information to aid in memory recall.
- **Provide positive feedback and support.** Give praise for tasks finished.

Level 5 – Confused, Inappropriate Non-Agitated: Maximal Assistance

- The person is not as explosive or combative.
- The person is more alert and can follow simple commands most of the time.
- The person is still not consistently oriented to person, place, or time.
- Complex or multiple step commands may lead to frustration. Attention to any task may be limited.
- Long term memory of past events may be better than short term recall of daily events. To fill in the gaps of memory, the person may make up stories.
- They may have confusion due to problems learning or organizing information.
- Most days, common activities of daily living, such as eating or dressing, can be done with few problems. However, the person may have a hard time starting an activity or get stuck on 1 step of a task. Step by step instructions for specific tasks are very helpful.
- The person is also seldom aware of their limitations. As a result, a person may not understand the purpose of rehabilitation. They are better able to understand physical injury than problems with thinking or memory. It is not uncommon to hear requests to leave the hospital or "go home."

To help your loved one:

- **Help write down daily events and ask questions about what has happened during the day** (activities, feelings). Therapists may provide the person with a memory book to help.
- **Practice new and old self care skills**, such as dressing, brushing teeth, and combing hair.
- **Practice memory exercises**, such as reviewing family pictures. Repeat information to reduce confusion.
- **Use simple, short, concrete sentences and directions.** Help to get organized for each activity. Avoid treating the person like a child. For example, after setting out toothpaste and a toothbrush say, "John/Jane brush your teeth."
- **Encourage the person to make choices**, especially with grooming, dressing, and food.
- **Limit the number of visitors and noise** to reduce confusion and help with attention to interactions.
- **Encourage the person to participate in leisure activities.**

Level 6 – Confused, Appropriate: Moderate Assistance

- The person's behavior is more functional.
- They can remember time, events of the day, and major life events.
- There is improvement in the care of basic needs and the person is showing more consistent orientation to time and place.
- The person can follow simple commands more consistently and can keep attention for 30 minutes on a task.
- It is easier to learn information at this stage, but details may be forgotten. For example, the person may remember talking with a family member, but forget what was said.
- Response time to finish activities may still be slow.
- The person may have trouble connecting thoughts with specific words or say things without thinking.

To help your loved one:

- **Encourage independence in tasks.** Limit the amount of help you give.
- **Keep your conversion simple and short.** Use clear directions for tasks.
- **Use memory aids**, such as a daily schedule, memory book, and pictures. Use current events, such as the news or favorite TV shows, to help with memory. Give help with memory as needed. Do not "drill" the person with memory questions.
- Problem solving may be a challenge. New situations or information can be stressful. **Give positive support to encourage participation.**
- **Encourage the person to be active in rehabilitation.** If the person does not understand limitations or problems, they may not participate.
- **Follow a routine every day.** Follow a schedule at home similar to the one in the hospital. For example, have meals and rest periods about the same time every day. **Ask the staff about any restrictions or specials instructions.**

Level 7 – Automatic, Appropriate: Minimal Assistance for Daily Living Skills

- The person is able to do most daily activities automatically when tasks have structure.
- Concentration, judgment, and problem solving may be hard.
- Safety is a concern. The person may feel "better" but lacks judgment for some activities. For example, driving a car is not recommended.
- The person is likely unaware of others' needs and feelings.
- When prompted, the person may refuse or not cooperate.
- When something is new, complex, or different from the normal routine, it can cause frustration or anxiety.
- Learning new information takes time and practice to retain.
- Counseling may be needed before returning to work or school.

To help your loved one:

- **When home, provide a safe environment.** They may still need supervision 24 hours a day. Discuss ways to help the person stay safe with the health care team, family, and friends.
- **Talk to the doctor about any restrictions**, such as driving, drinking, working, or being left alone.
- **Encourage independence in all self care tasks.** Practice simple household chores and tasks with structure and routine. Slowly add more tasks, allowing the person to make choices and decisions.
- Interaction will be more normal. **Encourage social events for short times.** Choose events that are less stressful. Be careful with slang or jokes as meaning can be missed and the person may become upset.
- **Encourage participation in a rehabilitation program.** Problems with behavior, memory and judgment may continue for several months or years.

Level 8 – Purposeful, Appropriate: Stand By Assistance

- The person has purpose in daily living.
- They can recall and integrate past and present. Carryover for new learning is evident.
- The person may focus up to an hour in distracting environments.
- The person needs no supervision once activities are learned and can be independent at home and in the community. They benefit from external memory aids, such as schedules and to do lists to support role.
- The person may continue to show decreased abilities, reasoning, judgment, stress tolerance, and emotional and intellectual capacity compared to pre-injury, yet be functional in society.
- Depression and anxiety may be present.

Level 9 – Purposeful, Appropriate: Stand With Assistance on Request

- The person is aware of and acknowledges limits when they get in the way of completing tasks. They may still need help to anticipate or prevent problems.
- The person can shift back and forth between tasks and complete, accurately for longer periods of time. For example, the person may start laundry, address other household chores, and remember to return to laundry.
- The person is able to think about consequences of decisions. They may still need help to make safe decisions.
- The person has increased awareness of social skills, manners, and appropriate behavior returns.
- Low frustration tolerance and depression/anxiety may persist into this stage.

Level 10 – Purposeful, Appropriate: Modified Independent

- The person is able to handle multiple tasks at the same time in any environment, but may continue to need breaks.
- The person can recognize the need to use memory aids, such as calendars and to do lists, without help.
- More time may be needed for problem solving.
- Socially, the person is appropriate in all settings.
- Depression and irritability may persist and be worse when the person is tired.

To help your loved one during recovery levels 8 to 10:

- **Encourage note taking, mobile device calendar alerts and medicine reminders, and other self help tools** to improve daily function.
- **Encourage decision making.** Give help when needed but treat choices made as functional adult decisions.
- **Talk with community resources or social workers about long term adjustment and lifestyle needs.**
- **Promote rehabilitation treatment** as part of recovery, even after they feel that they are able to function normally. It may benefit memory, thinking, and judgment skills.
- **Continue to give positive feedback and support.**

Physical Changes

A brain injury can affect other parts of the body to cause physical changes. Some patients may also have physical injuries that occurred along with the brain injury. Through rehabilitation and other treatments, the person will work toward the greatest level of independence.

Changes in movement

The brain controls the movement of the body. With brain injury, your loved one may have changes in the ability to move due to:

- Physical injury to the brain, altering the signals being sent to the body's muscles. This causes problems with movement
- Physical injury to bones, joints, muscles, and other tissues
- Lack of endurance or having less energy
- Poor balance due to altered signals coming from the brain
- Weak muscles from altered signals coming from the brain or prolonged bed rest, which is common after brain injury
- Loss of muscle control or paralysis
- Contracture where muscles or tendons tighten, causing movement in a joint to be limited
- Spasticity where there is an abnormal increase in muscle tone or stiffness of muscle, causing jerking and twisting of muscles

Treatment may include:

- Physical and occupational therapy to improve movement, function, and independence. This may include:
  - Braces, splints, or casts to protect the injury and support healing
  - Range of motion and stretching exercises to improve movement
  - Strengthening exercises to improve muscle performance
  - Balance training to reduce fall risk
  - Electrical stimulation (e-stim) to manage pain and improve movement
  - Practicing skills and tasks to improve independence
- Medicines
- Surgery

Changes to senses

Brain injury may affect the senses causing problems with:

- Vision, including blind spots, double vision, or problems processing and interpreting what you see
- Hearing, including ringing in the ears
- Taste, including a bad taste in the mouth
- Smell, including the loss of the ability to smell

These problems may cause issues with recognizing objects, hand-eye coordination, and balance.

The health care team will check your loved one's senses and their effect on their ability to do daily tasks. The team will work with your loved one on strategies to compensate for these changes with therapy and other treatments. Patients with vision and visual/perceptual problems may be referred to the NeuroVision Clinic for further assessment and treatment.

Bowel and bladder problems

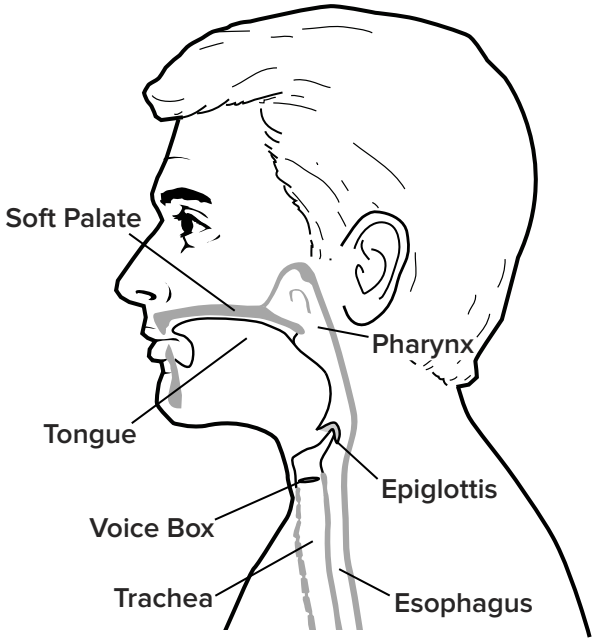
Bowel and bladder function is controlled by the brain. It is common to have problems after a brain injury. Your loved one will work with the health care team to create a program to improve control and address issues, such as incontinence, diarrhea, constipation, and retention. Bowel care and bladder care are discussed more, later in this book.

Swallowing problems

If your loved one has problems swallowing, also called dysphagia, they will work with a speech language pathologist (SLP) to learn strategies to make swallowing easier and safe. These may include:

- Changes to food texture or liquid thickness
- Exercises to strengthen muscles within the face, mouth, and throat
- Training your loved one to swallow with a different head or neck position to reduce the risk of food or drink from entering the trachea when swallowing

Other treatments, such as surgery or feeding tubes, may be used to ensure the person's body gets the nutrition it needs.



Seizures

Some patients have seizures after a brain injury. Seizures are sudden, uncontrollable, electrical changes in the brain that disrupt normal function.

- Seizures can cause signs, such as staring spells and convulsions.
- Most seizures last from 30 seconds to 2 minutes and do not cause lasting harm. If a seizure lasts longer than 3 minutes or if the person does not wake up between seizures, it is a medical emergency.
- People who have reoccurring seizures may be diagnosed with epilepsy.

Seizures

Seizures are one of the problems that can happen after brain injury. Seizures are sudden, uncontrollable, electrical changes in the brain that disrupt normal function. Most seizures cause a loss of awareness and uncontrolled body movement. There are many types of seizures, and signs may differ based on the part of the brain affected. Most seizures last from 30 seconds to 2 minutes.

Signs of a seizure

Before the seizure, a warning sign, called an **aura**, may occur. The aura may be a headache, changes in vision, hearing noises, or smelling a scent, such as smoke.

During the seizure, these signs may occur:

- Staring spells
- Facial twitching
- Problems breathing
- Black outs, loss of memory or confusion
- Drooling
- Problems controlling the bowels
- Convulsions or uncontrollable body motions, such as chewing motions, body stiffening, jerking, or lip smacking
- Changes in sensation or vision

After the seizure, the time before you or your loved one wakes up is called the **postictal state**. Most people are very tired and confused during this time.

If you or your loved one has never had a seizure before or if the seizure lasts longer than 3 minutes:

- In the hospital, **push the call button**.
- At home, **call 911 right away**.

A person with epilepsy should always wear a medical alert necklace or bracelet.

Types of seizures

Knowing the type of seizure you or your loved one has helps the doctor find the best treatment. There are two main types of seizures:

- **Partial seizures**, also called focal seizures, that affect 1 part of the brain.
- **Generalized seizures** that affect both sides of the brain.

Sometimes, a seizure may start in one part of the brain then spread to another part. This is called a **secondary generalized seizure**.

Testing and treatment

Your doctor will ask you about your signs and may order 1 or more tests to check the cause of the seizure. An electroencephalogram (EEG), a test that looks for abnormal brain activity, is the most common test. Brain scans, blood tests, and other tests to measure motor skills, behavior, and cognition may also be done.

Anti-seizure medicines may be ordered to control seizures. Your doctor may discuss other treatments with you.

Seizure triggers

For patients with epilepsy, some factors may make a seizure more likely to occur. These include:

- Lack of sleep
- Stress
- Alcohol and drug use
- Smoking cigarettes
- Hormonal changes, such as with a menstrual cycle

Talk to your doctor if you have a seizure. Your medicine, how often you take the medicine, or the amount of the medicine you take may need to be changed.

How to help your loved one

During the seizure:

- Keep calm and let your loved one know you are there to help.
- **Do NOT** hold them down.
- Time how long the seizure lasts. Seizures can last from seconds to several minutes.
- Protect your loved one from injury by moving nearby objects.
- Loosen tight clothing, especially around the neck.
- Turn your loved one on their side.
- **Do NOT** put anything into your loved one's mouth.
- **Do NOT** start CPR. If your loved one does not start breathing after the seizure has stopped, call 911 and then start CPR.
- Stay with your loved one until their breathing is normal, and they are fully awake.

After the seizure, allow your loved one to lie quietly. It may take some time for them to be fully alert. When your loved one wakes up, call them by name. Speak calmly and tell your loved one what happened and where they are.

If your loved one is injured, call their doctor's office, or take them to an urgent care or emergency department.

Take a video of the seizure or write down what happened during the seizure. Share this with the health care team along with:

- Any warning signs before the seizure started.
- The parts of the body the seizure affected or injured.
- How long the seizure lasted.
- What your loved one was doing before and after the seizure.

Call 911 if:

- The seizure lasts more than 3 minutes.
- A second seizure starts shortly after the first one stopped.
- Your loved one is not breathing or does not wake up after the seizure has stopped.

Living with seizures

Seizures can affect daily living, self esteem and freedom in daily activities. You may not, for example, be able to drive for 6 months after a seizure.

If you or your loved one has depression, trouble sleeping, eating, or functioning, talk to the doctor or any member of the health care team. Seek out support groups to share experiences, frustrations, and tips on how to cope with seizures.

Cognitive Changes

Cognitive changes can occur after a brain injury. Cognition is comprised of the thinking skills that help a person process, and use information. It includes problem solving, safety awareness, memory, organization, and decision making, also known as executive function. In therapy, the person will work on strategies to improve these thinking skills.

Cognitive changes may affect the ability to:

- Pay attention
- Solve problems
- Remember
- Learn
- Organize thoughts
- Act on what is being said
- Recognize people
- Know where they are and what time and day it is
- Control impulses and make good decisions
- Understand sequencing or the order of when things happen
- Respond well to what is being said
- Know when and how to start a task
- Plan the steps needed to carry out a task
- Keep track of time with appointments and routines
- Know when to correct behavior
- Know what to say and do when with others

Tips to help your loved one

- Face the person when you speak to them.
- Talk in a place that is quiet and free of distractions.
- Be sure you have the person's attention before you start to speak.
- Speak slowly, clearly, and at a normal volume.
- Give the person time to think and respond to what you have said.
- Repeat what you said if the person did not understand. You may need to say it in another way.
- Let the person speak for themself.
- Encourage the person to be part of the conversation.
- Try to have only 1 person talk at a time.
- If the person is getting off topic, use spoken reminders to get back to the topic.
- If the person is talking too much, use gestures or spoken reminders to signal your turn to talk.
- Limit the amount of conversation when the person is tired or uncomfortable. Encourage visitors when the person is rested and relaxed.

- If the person gets confused or forgets, remind them of the correct information. For example, the person talks about a visit from a friend on Sunday when the visit had been on Friday. You may say, “Yes, you’re right. She did come to visit on Friday afternoon.”
- If you do not understand what the person has said, tell them. Explain what you did not understand and why.
- Write out the tasks that need to be done and break each task down into simple steps. Keep instructions short and simple. Instead of saying, “Get the trash ready for pick up,” review each step:
  - Get the waste baskets from the kitchen and bathroom.
  - Empty the waste baskets into the garbage can.
  - Take the garbage can down to the curb.
- Avoid distracting the person when they are working on a task.
- Lay out items needed to complete a task to make it easier.
- Give extra time to complete tasks.
- Recheck a completed task so that the routine gets easier.
- Create safety stickers as reminders for areas where injury can happen, such as in the kitchen when cooking.
- Keep social contact to a few people at a time.

About mental fatigue

Mental fatigue is a common problem after brain injury. It can cause your loved one to feel weary, tired, or lacking in energy. It can make thinking and doing tasks more difficult.

To help, encourage your loved one to:

- Do tasks that are physically or mentally demanding in the morning when they are “fresh.”
- Break a large task into several smaller tasks. Rest between these small tasks to manage energy.
- Do activities they enjoy.
- Gradually increase the time spent on an activity as stamina improves, such as working a few hours a day to start, then increasing hours over time.
- Exercise. Talk to the health care team about the best and safest activities.
- Get a good night’s sleep.
- Eat a healthy, well-balanced diet.
- Get help for feelings of depression or anxiety.
- Talk to the health care team if they have chronic pain.
- Manage stress.

If your loved one’s fatigue does not improve or if it prevents them from doing daily activities, **talk to a member of the health care team**.

Communication Problems

Causes of communication problems

A brain injury may cause problems with the ability to express ideas through speaking or writing, The person may also have trouble reading and understanding their communication partners. Problems with social communication may affect the person's ability to take part in conversations or understand subtleties of conversation like sarcasm or a change in tone. The person may seem overly emotional or lacking in emotion and be unaware of how these problems are perceived by others.

Physical changes can also affect communication. Weak muscles of the face, mouth, and tongue can make it hard to speak clearly or loudly enough to be understood. Problems with the coordination of speaking and breathing may also affect speech.

The speech language pathologist (SLP) will check speech patterns, issues, and concerns. They will develop a treatment program and give suggestions to help with communication (speech and language).

Tips to help your loved one

- Try not to talk for the person.
- Talk in a place that is quiet and free of distractions. Turn off the TV and close the door.
- Be sure you have the person's attention before you start to speak. Use gestures or verbal cues to remind the person to look at you.
- Allow extra time for communication.
- Speak slowly, clearly, and at a normal volume.
- Encourage the person to be part of the conversation. Ask questions that need more than a yes or no answer.
- If possible, have the person tell you when they need help. Give them a chance to communicate on their own, and give help when they ask for it.
- Limit the amount of conversation when the person is tired or uncomfortable.
- Try to have only 1 person talk at a time.
- If the person is getting off topic, use spoken reminders to get back to the topic.
- If the person is talking too much, use gestures or spoken reminders to signal your turn to talk.
- Repeat or write down important information.
- Give positive feedback.

Behavior Changes

Changes in behavior are common in people with brain injuries. Over time, some of the behaviors may lessen or stop. Others may be long term. There are things you can do to help your loved one with these behavior changes.

Agitation and aggression

Your loved one may be restless, irritable, and confused. This can make them seem more aggressive or reactive to others. Too much stimulation can make their agitation worse.

To help your loved one:

- Keep tasks simple and directions short.
- Limit stimulation. Dim the lights, reduce noise, and limit visitors.
- Be consistent with the schedule.
- If possible and safe, let your loved one move around or talk during times of agitation. This may help them release some energy.
- Plan rest periods in a quiet space with little to no stimulation (turn down the lights, turn off the TV and no visitors).
- Stay calm.
- Maintain a relaxed posture and position yourself to maintain safety.
- Do not get in your loved one's personal space and avoid towering over them.
- Remain flexible.
- Be direct, but there is no need to tell them not to argue. Identify what you need your loved one to do in a calm, simple, and positive way.
- Redirect your loved one to a less frustrating or stimulating task until the agitation lessens. End the task if redirection is unsuccessful.
- Watch for a build up of tension. Intervene before your loved one is ready to fight by redirecting or taking a rest break. Be consistent with the strategies you use to intervene.

It is not easy to see your loved one in this state. They will not likely remember this stage of recovery. If you feel overwhelmed, take a break. Staff are here to provide supervision and structure to keep your loved one safe. Social work and rehabilitation psychology are also available as resources.

Confusion

After your loved regains consciousness after brain injury, They may have post-traumatic amnesia (PTA). PTA is a period of recovery where your loved one has confusion and is not able to remember recent events. This confusion should lessen over time.

To help your loved one be aware of where they are, what time it is, and what they will be doing:

- Have a calendar and clock in the room where they can easily see them.
- Plan a consistent schedule of activities.
- Reorient to correct date, time, and place.
- Practice a consistent routine within and between activities.
- Remind your loved one of what is next on the schedule by telling them and pointing to it on the schedule.
- Before you help with an activity, tell him or her what you are going to do. Use simple words that are easy to understand.

Impulsive

Your loved one may have problems with impulse control and self-awareness. They may often act before considering consequences. These actions may disregard their own personal safety.

To help your loved one:

- Stay one step ahead and be consistent with the strategies you use to intervene.
- Have your loved one pause before starting a task. Remind them to think about how to do the steps of the task.
- Use words to review the steps of an action before starting a task.

Lack of inhibition

Your loved one may lack judgment or behave in an inappropriate way. This may be sexual in nature.

To help your loved one:

- Use the term "self control" to cue your loved one to decrease or stop the behavior.
- Give calm, direct feedback right away. Be specific about the behavior that is not appropriate. For example, "I do not like your comments about my appearance."
- Suggest other options for behavior.
- Do NOT reward behavior with negative attention or an emotional response.
- Do NOT reward the behavior with a humorous response.
- Be consistent with the strategies you use.

Perseveration

Your loved one is focused on one thing and is not able to transition from one task to another. They may say the same word or phrase over and over. They may do the same movement or task over and over.

To help your loved one:

- Do NOT use logic to stop repetitive behavior. Instead, redirect your loved one to another task. Pace your intervention to allow your loved one time to transition.
- Use of a schedule may help your loved one attend to the task at hand.

Confabulation

Your loved one may create stories about their injury or life events. They are not aware that these stories are false and are not actively lying. Your loved one's brain is creating stories to fill in information that is hard to recall.

To help your loved one, ignore the stories they create. If your loved one is a higher functioning patient, give calm feedback about the story, and then redirect to another task.

Apathy

Your loved one may not be motivated and may not see that anything will help. You may notice a lack of interest and may seem numb to life.

To help your loved one:

- Encourage your loved one to take part in an activity.
- Do activities your loved one enjoys often.
- Let the person choose what activity they want to do.
- Avoid overwhelming your loved one with choices. Present two options to choose from rather than a yes or no choice where they'll most often say no. For example, "Do you want to go for a walk or would you rather do your arm exercises now?" rather than "Would you like to go for a walk now?"
- Remind them of the progress they have made and show them on a graph or chart.

Does not comply (noncompliance)

Your loved one may refuse or fail to follow instructions or a request. This refusal may be as a means of gaining control of their situation or because they do not understand what is being asked of them.

To help your loved one:

- **If your loved one is trying to gain control**, give them 2 task options to choose from rather than a yes or no choice.
- **If your loved one lacks understanding**, give a different explanation of how to do task. Use visuals or demonstrate what you would like them to do. Written instructions may be helpful or make the request again later to give your loved one extra time to process the information.

Lack of insight

If the part of the brain that controls judgment is injured, your loved one's ability to make safe choices can be affected. Your loved one may think they can do more than is realistic, such as drive a car or go back to work.

To help your loved one:

- Talk with your loved one's therapist about limits and recommendations before discharge from the hospital.

Lack of initiative

Your loved one may want to do an activity, but they cannot figure out how to do it. They may not know the first step to getting started or cannot figure out the correct order of steps to follow to do something. Often, they may not be aware that this is the problem and make other excuses about why they cannot complete the task.

To help your loved one:

- Set up a routine. This will help your loved one relearn behaviors over time.
- Limit distractions.
- Give word cues to help your loved one move to the next step. Use the same word cues with the activity each time.
- Move to other cues that do not require you to be there. For example, post a list of how to set up for dressing in the room where your loved one dresses. Keep the cues simple and easy to read from a distance.
- After success with written cues, give simple word statements that your loved one can say out loud or think to himself as they do the activity. These become self reminders. Keep them simple and easy to learn.

Emotional Changes

Emotional changes are common in people with brain injuries. You may notice that your loved one feels or expresses their emotions differently. This may include mood swings and feelings of anxiety, depression, anger, and frustration. There are things you can do to help your loved one with these emotional changes.

Mood swings

After a brain injury, it may be hard for your loved one to control their emotions. They may fluctuate between feelings of happiness and sadness. Your loved one may express emotion in a way that is unrelated to how they are actually feeling, such as laughing or crying for no apparent reason. They may also lack empathy if emotions are hard for them to recognize.

Anxiety and depression

Feelings of anxiety or depression are common and may occur from changes to the brain or from problems adjusting to life after brain injury. Depression and resources, such as support groups, are discussed more later in this book.

Anger and frustration

Your loved one may:

- Have angry outbursts or be quick to anger.
- Be verbally or physically aggressive.
- Be easily frustrated.
- Be less patient.
- Have a hard time with change or new situations.

How to help your loved one

- Talk to the health care team about treatment options, such as counseling and medicines. Consult with a psychologist to learn strategies to help.
- **Seek help right away if your loved one is greatly distressed or has thoughts of suicide.**
- Learn relaxation techniques to reduce stress and anxiety. Practice these techniques with your loved one.
- Learn what triggers an emotional outburst. Avoid these triggers or redirect your loved one when they occur.
- Set rules for healthy communication, such as no yelling, threatening, or hurting. Encourage your loved one to take a break and go for a walk when they begin to feel out of control.
- When emotions are under control, talk with your loved one. Help to identify what caused the distress. Encourage your loved one to share their feelings and help to problem solve a solution in a calm, non-judging way.
- Find a support group.
- Encourage structured activities like exercise and leisure activities.

Depression

Common reaction

Depression is a common emotional reaction to brain injury. Sometimes, depression is caused by the physical damage that the injury causes to the brain. Depression often appears in the first 3 months, but the risk can be there for a year or longer.

It is common for depression to occur during the later stages of recovery when there is less confusion and the person becomes more aware. Depression can hamper recovery and rehabilitation.

Signs of depression

When a person is depressed, they have several signs nearly every day.

Check for any signs you or a loved one has had for 2 weeks or more:

- Loss of interest and pleasure in activities you have enjoyed.
- Feeling sad, irritable, empty, or down in the dumps.
- Restless, unable to sit still, or feeling slow
- Feeling worthless or guilty.
- Feeling pessimistic or hopeless.
- Thoughts of death or harming oneself.
- Changes in appetite, weight loss, or weight gain.
- Change in sleep patterns, such as not sleeping or sleeping too much.
- Problems concentrating, thinking, remembering, or making decisions.
- Loss of energy or always feeling tired.

If you have any of these symptoms for more than 2 weeks, or if you have had thoughts of suicide or of trying to harm yourself or others, talk to your doctor.

Preventing depression

- Learn about brain injury to help lessen your fears. Talk to your health care team about your questions and concerns.
- Make the most of rehabilitation and keep a journal to track your progress. The more you recover, the better you will feel.
- Spend time with family and friends. Talk about your feelings.
- Maintain interests and hobbies.
- Exercise.
- **Talk to your doctor or other members of your health care team as soon as you notice signs of depression.**

Where to get help

- **In the hospital**, talk with your nurse, doctor, psychologist, social worker, or therapist. They can provide or recommend help for you.
- **After discharge**, talk to your primary care doctor or social worker.
- **To make an appointment or get a referral**, call Ohio State Rehabilitation Psychology at 614-293-3830. They can give you information about available mental health services.
- **In an emergency**, call 911 or go to or call the Emergency Department at Ohio State University Hospital at 614-293-8333.

Treatment for depression includes counseling, medicines, or both. If you start medicines for depression, do not stop taking them without talking to your doctor first.

Preventing Deep Vein Thrombosis

Deep vein thrombosis (DVT) occurs when a blood clot forms in a large vein. It most often occurs in the legs as a result of slow circulation. Part of a clot may break loose and travel to the lungs, causing a pulmonary embolism, a serious medical condition.

Sitting or lying for a long time can increase your risk for DVT. Treatment includes medicines to ease pain and inflammation, break up clots, and keep new clots from forming.

Learn to recognize early signs of DVT and how to prevent it.

Signs of DVT

Deep Vein Thrombosis

Most people have no signs. When signs occur, they tend to be in the affected part of the body, such as the leg.

Common signs include:

- Swelling
- Pain or tenderness
- Increased warmth in the area that is swollen or painful
- Redness of the skin

Pulmonary Embolism

Common signs include:

- Shortness of breath
- Pain with deep breathing
- Coughing up blood
- Rapid breathing
- Faster than normal heart beat

If you have any of these signs, seek medical help right away.

How to prevent DVT

- Move around as much as possible. You may be told to do these exercises:
  - Raise and lower your heels.
  - Raise and lower your toes.
  - Tighten and release your leg muscles.
- Wear compression stockings during the day time hours to prevent swelling.
- Wear sequential compression devices (SCDs) when in bed or sitting in a chair. The sleeves wrap around your legs and inflate with air to compress your legs and improve circulation.
- Take medicine, called anticoagulants, to prevent DVT. This medicine is given by mouth or as a shot into your stomach based on your risk for blood clots.
- Wear loose clothes.
- Drink plenty of water, at least eight, 8-ounce glasses a day. Avoid drinking anything with alcohol or caffeine in it.
- Exercise regularly.
- Maintain a healthy weight.
- Do not smoke.

Bowel Care

Causes of bowel problems

The area of the brain that receives nerve signals from the rectum to have a bowel movement may be damaged after a brain injury. The brain may not recognize the signals, and you will not have awareness of the need to have a bowel movement. This causes loss of control (**incontinence**).

Your diet, less activity, and certain medicines may also affect stool consistency. Stool may be loose (**diarrhea**) or hard (**constipation**).

Work with your doctor and nurse to create a daily bowel care program. This will help you avoid embarrassment and spend less time on bowel care.

Bowel care program

- Keep a record of your bowel movements.
- Have a routine. Pick a regular time for sitting on the toilet or commode, such as after a meal or shower. You may be given a rectal irritant, such as a suppository, to help you empty your bowel. The goal is to train your bowel to empty at the same time each day.
- Learn to be aware of small signs that you need to have a bowel movement, such as feeling restless or cranky, passing more gas, or having nausea or bowel cramps.
- Gently rub your stomach to help stool move through your colon.
- When you feel the urge to have a bowel movement, use the toilet right away.
- Be patient. It may take 15 to 45 minutes to have a bowel movement. Sit on the toilet until you feel that your bowel is empty.
- Drink plenty of water, at least eight, 8-ounce glasses a day.
- Eat fiber-rich foods such as fruits, vegetables, and whole grains.
- **Talk to your doctor or nurse about taking medicine to help.**

Diarrhea

- Limit milk, fruit juice, raw fruits, beans, and peas. These foods irritate the bowel and can cause diarrhea.
- Talk to your doctor about the medicines you are taking. Some medicines, like antibiotics, can cause diarrhea.

Constipation

- Keep active. Walk if you can, or if you use a wheelchair, ask your health care team about exercises.
- Drink prune juice daily.
- Use K-Y Jelly, petroleum jelly, or mineral oil to lubricate your rectal opening.
- Talk to your doctor or nurse about taking an enema, stool softener, or laxative to make bowel movements softer and to help empty the bowel.
- Talk to your doctor about the medicines you are taking. Some medicines, like pain pills, diuretics (water pills), and anti-seizure medicines, can cause constipation.

Bladder Care

Causes of bladder problems

Bladder function is controlled by the brain. Brain injury may cause bladder problems, such as:

- **Incontinence:** Not being able to control when the bladder empties of urine or not being aware of the need to use the toilet.
- **Retention:** Not being able to fully empty the bladder of urine.

Work with your doctor and nurse to create a daily bladder care program to improve bladder control and reduce your risk of urinary tract infection (UTI).

- **Signs of UTI include:** pain or burning when you urinate, fever, an urge to urinate often, pressure in your lower belly, urine that smells bad or looks cloudy or reddish, and pain in your back or side below the ribs.

Bladder care program

- Keep a record of when and how much you urinate.
- Have a routine. Use the toilet or bedside commode at regular times, at least every 2 to 4 hours during the day and night. Use the toilet before therapy and exercise.
- If your skin gets wet from urine, wash it with soap and water and rinse well. Keep skin clean and dry to prevent skin irritation, and sores.
- After bathing, use a moisturizer and a barrier cream, such as petroleum jelly, zinc oxide, or diaper cream, to keep water and urine away from the skin.
- Drink plenty of fluids, at least eight, 8-ounce glasses a day, to help wash out bacteria out of the urinary tract and prevent infection. Water and cranberry juice are helpful.
- Do not drink anything 2 to 4 hours before bedtime. Empty your bladder before bedtime to prevent an accident at night.
- **Talk to your doctor or nurse about taking medicines to help.**

Incontinence

- Use the toilet or bedside commode at regular times, at least every 2 to 4 hours.
- Look at your record of how often you urinate. See if there is a common time of the day that incontinence occurs. Use the toilet 30 minutes before that time.
- Practice your rehab exercises to improve pelvic muscle tone.
- Talk to your doctor or nurse about using **urinary incontinence products**, such as pads and adult diapers. Change these regularly, even if you are dry, to keep your skin healthy. You may also want to use **washable waterproof pads** over sheets and on chairs to protect furniture.
- Patients may use external catheters to collect urine.

Retention

- Take prescribed medicine as ordered by your doctor.
- Nursing staff may use a bladder scanner to assess your post-void residual (PVR). This measures the amount of urine left in your bladder after urinating.
- Use **intermittent catheterization**, also called self catheterization or straight cath, if ordered by your doctor. This type of tube is put into the bladder only long enough to drain urine. Once the bladder is empty, the tube is removed.

Positioning for Impaired Mobility

Sitting up

These guidelines for sitting up will help you relax, prevent or decrease pain, and prevent muscle tightness.

- Sit up straight and balance body weight evenly. Do not slouch.
- Position buttocks all the way to the back of the chair or wheelchair. Keep hips and knees at a right angle and feet flat on the floor.
- Keep head and body in line with hips. You may need to use a pillow or wedge to help keep weight spread evenly across both buttocks.
- Support weak arm with pillows, a table, or half lap board, if in a chair.
- Place the weak shoulder slightly forward, weak elbow away from body, and forearm slightly forward.
- Support the wrist and hand, keeping palm down.
- Placing a rolled up washcloth in the hand will keep the fingers more open and help protect skin of the palm.
- Check the skin often for redness, bruising, or breakdown.

Image used with permission from Stroke Foundation of New Zealand, www.stroke.org.

Sitting in a wheelchair:

Use the same steps as sitting in a chair, with added supports:

- Use a lap tray for support.
- Place the foot of the weak side on the foot rest while the wheelchair is in motion.

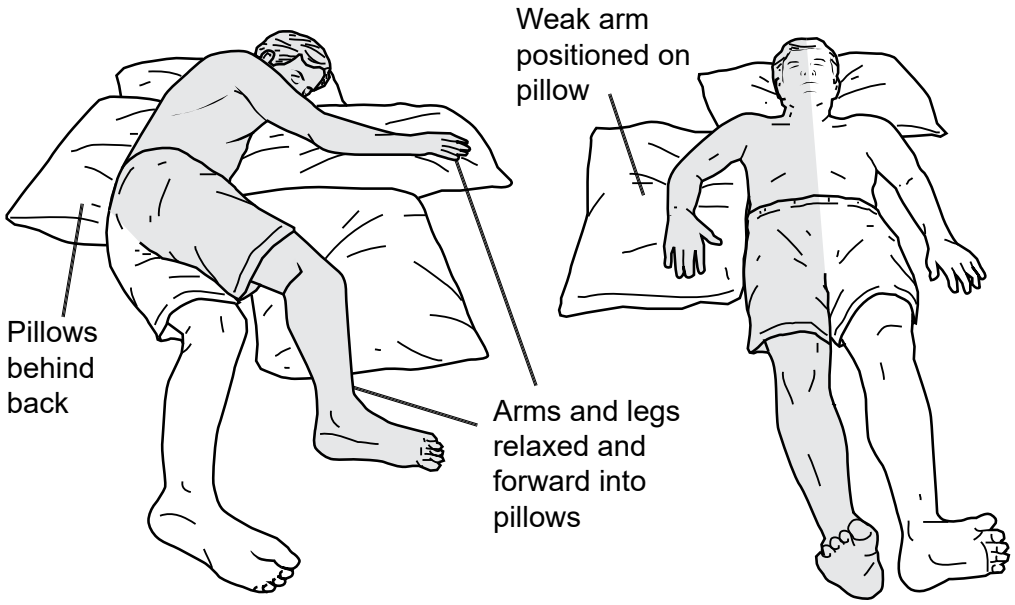
Lying down

These guidelines for lying down will help you relax, prevent or decrease pain, and prevent muscle tightness. The shaded areas in these pictures show the side that has impaired mobility.

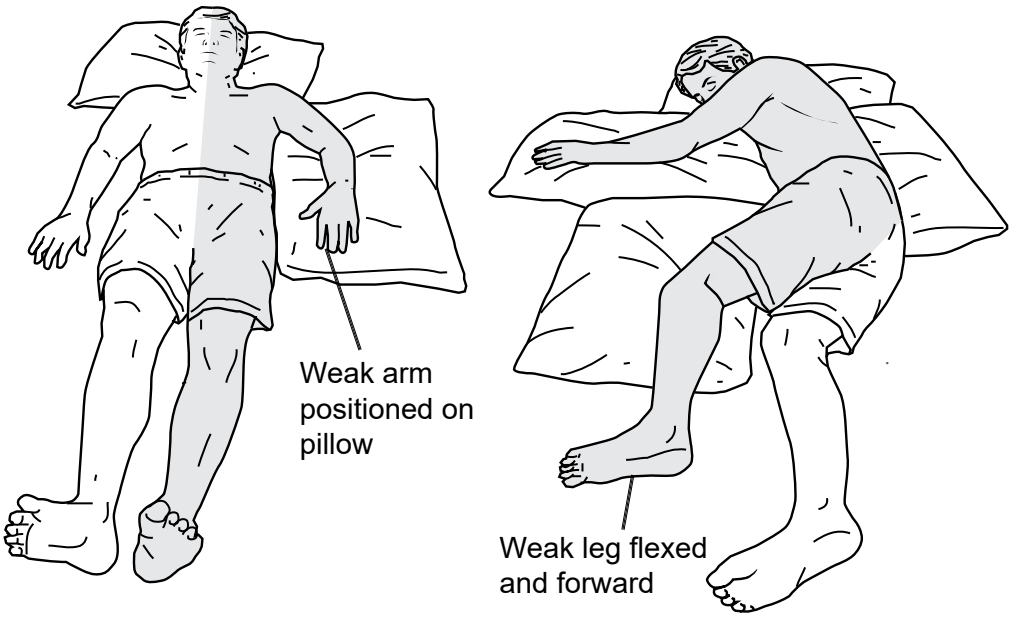
- Place flat pillows under head and weak arm for support.
- Place the weak shoulder slightly forward, weak elbow away from body, and forearm slightly forward. Support the wrist and hand, keeping palm down and fingers straight.
- The hand should not be drooped or in a fist, and palm should be facing down. Placing a rolled up washcloth in the hand will keep the fingers more open and help protect skin of the palm.
- **Do not lie in 1 position for longer than 2 hours.**
- Check skin often for redness, bruising, or breakdown.

- Place flat pillows under your head and limbs for support. Place your wrist and hand straight on a pillow, not drooped or fisted.
- Keep your shoulder forward.
- Keep your hips and knees bent.
- **Do not lie in 1 position for longer than 2 hours.**
- Check the skin often for redness, bruising, or breakdown.

Positions for impaired mobility on right side



Positions for impaired mobility on left side



Recommendations for Daily Activities

To keep you safe, we will discuss recommendations for things you can complete independently (no one else present), with supervision (someone else present), and activities you should avoid at this time. Please continue to follow these recommendations until advised otherwise by your doctor or therapists.

Activity	Independently	With Supervision	Avoid at This Time	Comments
ADLs (Activities of Daily Living)				
Using the bathroom				
Getting dressed				
Taking a shower				
Mobility				
Walking in the home				
Walking outside the home				
Using the stairs				
IADLs (Instrumental Activities of Daily Living)				
Grocery shopping				
Meal prep: cold meal prep				
Meal prep: microwave				
Meal prep: cooktop or oven				
Laundry				
Light housework				
Return to work				
Child care				
Pet care				
Manage medicine: prescriptions				
Manage medicine: over the counter drugs				
Money management				
Driving				
Lawn work				
Heights, such as using a ladder or footstool				
Operating power equipment, such as drill or mower				

Activity	Independently	With Supervision	Avoid at This Time	Comments
Operating farm equipment				
Leisure Time				
Drinking caffeine				
Games/puzzles/ reading				
Computer/television				
Smoking or using tobacco products				
Drinking alcohol				
Recreational drugs				
Leisure Activities				
Amusement park rides				
Fishing				
Hunting/firearms				
Riding motorcycle or ATV				
Video games				
Physical Activities				
Aerobic activity				
Running or jogging				
Bicycling				
Contact sports				
Non-contact sports				
Swimming or diving				
Golf				
Weight lifting				
Yoga				
Other				

Relaxation Techniques

Learn relaxation techniques to reduce stress and anxiety. Try different techniques to find what works best for you. Practice these techniques often and your ability to relax will improve over time.

Listening to music

Listen to your favorite music by itself or play music while using another relaxation technique. Look for new music that is soothing to you and helps you to feel calm and relaxed, such as classical music or nature sounds.

Physical exercise

Exercise is a good way to lower stress. It can help you relax by releasing muscle tension in the body. Exercise also releases endorphins, which are chemicals (hormones) your body makes to that help relieve pain, reduce stress, and improve your sense of well-being.

Positive thinking

Thinking negative thoughts can affect your health, causing stress and muscle tension. Create some positive statements to replace negative self-talk. Repeat these statements to yourself and use them to motivate you as you cope with changes. Some examples:

- I am doing the best that I can.
- I respect myself.
- I care for my well-being.
- I will try again.

With practice, positive thinking will help you to reduce stress as you learn to view yourself and your situation in a positive light.

Breathing exercises

1. Find a quiet room.
2. Turn on music that you find relaxing.
3. Get into a relaxing position. Do not fold your arms or legs as this may cut off your circulation, causing numbness and tingling.
4. Close your eyes and think of an image in your mind that will help you to relax, such as a calm, peaceful setting or a place you have enjoyed visiting.
5. Breathe in deeply. Hold your breath and tense your muscles. Keep them tense for a second or 2.
6. Relax your muscles as you breathe out.
7. Starting with the muscles in your lower legs, work your way up your body to your head, tightening and relaxing each muscle group.

Progressive muscle relaxation

Focus on a muscle group. Alternate tensing and relaxing these muscles. Use this technique on different muscle groups throughout your body.

Imagery exercises

Close your eyes and think of a time and place when you felt safe and comfortable. Imagine those surroundings, sights, smells, and sounds. Bring as much of that experience back to the here and now as possible. When you feel ready, take a deep breath and open your eyes.

Aromatherapy

Aromatherapy is the use of essential oils from plants as therapy to improve well-being. Some oils, such as lavender, are thought to produce a calming effect. The oils can be inhaled or applied in a diluted form to the skin. The hospital has aromatherapy machines and 3 oils, including:

- **Lavender** for insomnia, congestion, headaches, and stress
- **Peppermint** for nausea and headaches
- **Lemon** for air purification and nausea

Please let staff know if you are interested in aromatherapy.

Other resources

- Look for other resources, such as books, music with guided meditation, and mobile apps to support relaxation and stress reduction.
- It is good to practice relaxation techniques often, even when you are not stressed or anxious. We can help you and give you more information to help you practice correctly and safely.
- Visit Integrative Health for free recordings and resources: wexnermedical.osu.edu/integrative-health/resources.
- Learn tools to relieve stress, including breathing exercises, progressive muscle relaxation, yoga, and other techniques at go.osu.edu/stress_tools.
- Practice mindfulness and meditation at go.osu.edu/less_stress.

Gentle Seated Yoga

This set of yoga poses is designed to increase your strength and range of motion, improve your breathing, and calm your mind and body.

Instructions

- Sit on a firm chair that supports your back. Your feet should rest on the floor.
- For each pose, take 3 to 5 deep, slow breaths (inhales and exhales).
- If any pose or movement causes you pain, stop right away.
- If you have any questions, ask your occupational or physical therapist.

Watch this video at go.osu.edu/yogachair

Yoga poses

Grounding with Belly Breathing

1. Sit up tall and relax your body.
2. Place 1 hand under your belly and 1 hand on your chest.
3. Take a slow, big breath in, filling up your belly like a balloon. Feel your belly and chest rise.
4. Exhale slowly. Feel both hands fall on your belly and chest.
5. Do this 5 times, while feeling your body relax. Notice if you feel more grounded and connected to yourself.

Cat/Cow Poses

Cow (A)

1. Breath in, arch your back, and stick your belly forward.
2. Squeeze shoulder blades and together and look up.

Cat (B)

1. From cow pose – exhale, round your back and tuck your chin to your chest.
2. Move smoothly back and forth between these 2 poses.

Side Bends

1. Inhale as you reach both arms to the sky.
2. Exhale as you reach 1 arm up and over, dropping the other arm.
3. Feel the stretch between your armpit and hip.
4. Take 3 to 5 breaths in this pose.
5. Repeat on the other side.

Trunk Twist

Do not do this pose if you had a surgery or procedure or have another medical reason to limit movement of your spine, such as no twisting (spinal precautions).

1. Inhale as you sit up tall and reach 1 arm to the back of the chair.
2. Twist your body to the side. Look to the side or back over your shoulder, if it feels good in your neck.
3. Reach your other arm to the outside of your knee.
4. Take 3 to 5 breaths in this pose.
5. Repeat on the other side.

Hamstring Stretch with Strap

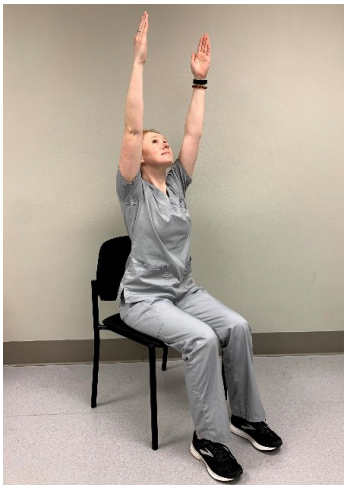
You will need a gait belt or a long strap.

1. Sit tall on the edge or your chair.
2. Straighten 1 leg and wrap the strap around your foot, right under your toes.
3. Exhale as you pull back on the strap with both hands. Feel the back of your leg get longer.
4. Take 3 to 5 breaths in this pose.
5. Repeat on the other side.

Half Sun Salutation Flow

Do this series 3 to 5 times. Move with your breath as quickly or slowly as you like.

High Mountain



1. Inhale as you reach your arms up into High Mountain pose.

Swan Dive

2. Exhale as you swoop your arms down into Swan Dive.

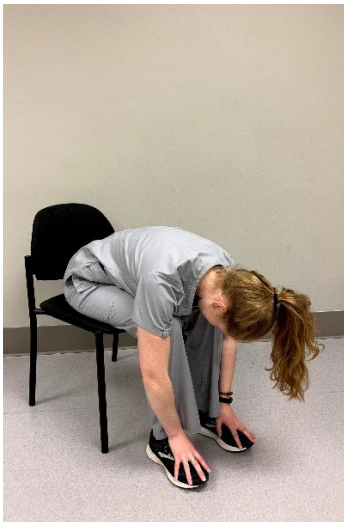
Forward Fold

3. Fold your body forward to let your belly rest on your legs. Relax your head, neck, and arms down towards the floor into Forward Fold.

Lift Halfway

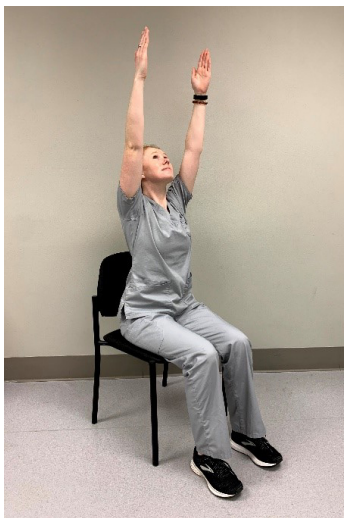
4. Inhale as you lift your body up half way. Keep your back straight and push your arms into your shins.

Forward Fold



5. Exhale into Forward Fold again.

High Mountain



6. Inhale as you swoop your arms up into Swan Dive. Reach your arms all the way up overhead into High Mountain.

Goal Post Arms Flow

1. Inhale as you reach your arms up.
2. Exhale as you bend your elbow to create a football goal post.
3. Inhale as you reach your arms back up again.
4. Move between these 2 poses for 3 to 5 breaths.

Eagle Pose

1. Inhale and sit up tall. Cross 1 leg over the other, as you bring both arms out to the side and into a “T” shape.

   Option A: Exhale as you give yourself a hug. Reach for your opposite shoulders. Stack your elbows on top of each other, if possible.

   Option B: Exhale as you give yourself a hug. Turn your forearms up so your fingers point to the ceiling, with the backs of your hands together or palms together.
2. Lift your elbows off your chest, as much as possible.
3. Take 3 to 5 breaths in this pose.
4. Repeat on the other side.

Figure Four

1. Sit up tall. Inhale as you cross your ankle over your thigh.
2. Pull your toes towards your knee.
3. Exhale as you fold forward with a flat back until you feel a stretch in the outside of the hip.
4. Take 3 to 5 breaths in this pose.
5. Repeat on the other side.

Final Resting

1. Sit up tall, relax your shoulders away from ears. Put your palms on your thighs in comfortable position.
2. Do a big inhale and exhale, then close your eyes.
3. Release and relax.
4. Take 3 to 5 breaths in this pose (or longer if it feels good).

You Are Still a Sexual Person

Each person expresses sexuality in different ways. Being sexual can include your emotions, feelings, experiences, and hopes for the future. Sexual expression can include touching, talking, hugging, fantasizing, kissing, or holding hands.

When is it safe to have intercourse after a brain injury?

You can have intercourse as soon as your doctors think you are medically stable. Most often, if people have sexual problems after a brain injury, they are "thinking" problems rather than "doing" problems. These problems may be due to changes in how you feel about yourself or feelings of depression, fear, or anxiety.

Before you begin sexual activity, talk to your doctor or nurse about protection from unplanned pregnancy and sexually transmitted infections. A woman can still get pregnant after a brain injury even if her menstrual cycle has not returned. Plan ahead as memory problems may cause a woman to forget her daily birth control pill or a partner to forget barrier birth control, like condoms.

Are sexual problems common after a brain injury?

Changes in sexual functioning are common and may be caused by:

- **Medical and psychological problems**, especially if you have feelings of depression. You may have changes in your desire to have sex or your ability to feel arousal or reach orgasm. Low energy and problems moving may make it hard to have sex.
- **Physical problems.** You may need to change how you engage in sexual activity.
  - If you have limited mobility or spasticity, talk to your partner about trying new positions.
  - If you need safety or adaptive equipment, use the equipment during sexual activities as needed.
  - If you have bladder or bowel accidents during your daily activities, you may also have them during sex. Use the toilet before sex and place a washable waterproof pad under your hips.
  - Talk with your partner and practice to enjoy sex after a brain injury.
- **Fear of being unattractive.** Share your fears, wants and needs with your partner. Your partner

can help by being more open and expressive. Even though some things have changed, remember that you are still loved and desired.

- **Cognitive problems.** Make sure you and your loved one are able to give consent for all sexual activities. Ask your doctor if you are concerned about your partner's ability to provide consent. A person's speech or language may also have changed after a brain injury. Encourage communication before, during, and after sex.

Does a brain injury ever lead to inappropriate sexual behavior?

Yes, a brain injury may cause an increase in sex drive with a decrease in inhibition. This may lead to improper sexual behaviors. Examples include:

- Improper touching of others
- Touching of self in public
- Verbal comments that are offensive or hostile
- Unwanted sexual advances

To manage these behaviors, calmly tell the person that this behavior is not appropriate and set boundaries. Talk about:

- Where the behavior is appropriate
- Who the behavior is appropriate with
- Repeated cueing to support memory

Can the drugs I take decrease my desire to have sex?

Yes. Talk to your doctor about your symptoms. As a man, your ability to have an erection and ejaculate may change. As a woman, your ability to achieve orgasm may also change. This varies from person to person and not all people have these changes. Do not stop taking your medicines without talking to your doctor first.

What are some tips for beginning a sexual relationship again?

Talk openly and learn as much as you can. Practice and being willing to try new things are important in any sexual relationship.

Ask any member of your health care team for information about being sexual again.

Planning for Discharge from Dodd Rehabilitation Hospital

Your case manager and social worker will work with you and your family to prepare you for discharge from the hospital. Your care needs will be reviewed by your health care team. They will make recommendations on your length of stay and your date for discharge. **You and your family are the most important members of the team. Talk honestly with staff about your care needs.**

Things to consider

- **Family and caregivers are required to take part in training** to learn the skills needed to provide care at home. Therapists provide training weekdays between 9 a.m. and 3 p.m. Training by the nurses may be done in the evenings. Training can also be scheduled by appointment.
- **Most patients need ongoing therapy, care and support.** Your case manager and social worker will h,elp you to explore insurance coverage for needed services. There is a lot of variation in what insurance will and will not cover. Family members may need to provide 24-hour supervision.

Service options

Depending on your care needs and whether family and friends are available to help, these options may be considered:

- **Home with outpatient therapy:** Therapy appointments outside of the home, often 2 or 3 times each week.
- **Home with home health care:** Home visits by a therapist or nurse, often 1 to 3 times each week. Most insurance providers do not cover the cost of home health aides to help with personal care activities, such as bathing and grooming.
- **Skilled nursing facility:** If more services and special therapies are needed, a stay in a nursing facility may be recommended.

Most services may require a co-payment. Talk to your insurance provider for details. Your case manager and social worker will help you find services and advocate for you to get the care you need.

Medical equipment needs

Your case manager will help you to order the equipment needed for care. Insurance providers vary as to whether they will cover the cost of bathing equipment, commodes, raised toilet seats, and a hospital bed. Often, they will cover either a wheelchair or walker, but not both.

Contact us

Please call your case manager or social worker if you have questions or concerns about your plans for discharge:

- **Case Manager at 614-366-1829**
- **Social Worker at 614-293-7209**

Treatment for Brain Injury after Leaving the Hospital

After leaving the hospital, treatment depends on the patient's ability to take part in rehabilitation or rehab. Recovery happens in many stages. The healthcare team will recommend the best place for your loved one for care.

Care options may include:

- Extended care facility
- Sub-acute rehabilitation
- Outpatient therapy
- Home health care

If the patient has severe injuries that are life threatening, hospice services may be offered. Hospice is available to help with care and comfort. Hospice services may be available at a facility or in the home with caregivers.

Extended care facility

Some patients are not yet able to take part in their rehabilitation, yet they are ready to leave the hospital. The care team may recommend an extended care facility if more healing time is needed. Some therapies and nursing care are available for long, and short term stays.

- **Long term stay:** Some patients need ongoing care for their injury. They may stay for months or longer, or move from one type of extended care facility to another to get the care needed.
- **Short term stay:** The stay may last for several weeks. When the treatment goals are met, the patient is either moved to a sub-acute facility for more rehabilitation or home for outpatient therapy.

Sub-acute rehab

This type of rehab facility is for patients who may still have nursing care needs but can take part in some of their rehab treatment. The goal is to develop skills for daily living, such as how to dress, eat, walk, or speak.

Patients who have IV therapy or other special care needs may benefit from this rehab option. Physical, occupational, speech, and recreational therapies are available. Therapists work with the medical care team to provide rehab services to improve function and quality of life. Programs may last a few weeks to several months.

Outpatient therapy

Outpatient therapy may last months or years after the initial brain injury. The goal of therapy is to improve skills for daily living. There are many types of programs that are part of outpatient therapy.

- **Neurobehavioral Programs**

  These programs can be inpatient or outpatient to address behavior after a brain injury. The goal is behavior management at home, in a social setting, or at work. Behavior management is often combined with physical or occupational therapy.

- **Community Re-Entry Programs**

  These programs focus on work and social skills. Some programs offer training for different job roles than the person had before injury. Others offer support for money management, decision-making, and making goals and plans for daily living. Most have the patient practice going into the community through field trips, such as to the grocery store, mall, or a restaurant. It provides a safe, real world experience to practice their new skills.

Home health care

Home health care may be needed during recovery. Nurses may come to the home to help with complicated dressing changes, injections, IV care, or therapies. Home health aides may help with activities such as bathing, grooming, eating, and getting out of bed. These trained personnel help to provide needed care while checking progress made in other rehab programs. Typically, home health aides are only 1 day a week.

Covering the costs of rehabilitation and therapy

You are probably concerned about the cost of the services needed. The cost of services may depend on your income and insurance status. Members of the discharge team will help you explore coverage for needed services within your budget. Insurance plans vary in what they will and will not cover. Medicare, Medicaid, and private insurance may only pay for some of the costs.

Contact your insurance company before discharge from the hospital and before placement in any rehabilitation program or facility. Social workers, case managers, and financial counselors are available to answer questions and help those with limited or no insurance coverage.

If you have issues or concerns after you leave the hospital, please call your doctor or social worker. They can help guide you through the emotional and physical challenges of your illness. Information about community resources in your area will also be provided.

For more information call:

- Social Work at 614-293-7209
- Financial Assistance at 614-293-0860

Brain Injury Resources

National brain injury resources

American Speech, Language, Hearing Association (ASHA) (National Office)
800-638-8255 or www.asha.org
Can connect you to an audiologist or speech language pathologist (SLP) in your area.

Acoustic Neuroma Association
770-205-8211 or www.anausa.org
Can help you find support groups, peer support programs, and patient and caregiver resources.

Brain Injury Association of America
703-761-0750 or www.biausa.org
Provides network access to quality health care and support groups.

Epilepsy Foundation
800-332-1000 or www.epilepsy.com
Learn about epilepsy, get tips for managing epilepsy, and connect with others.

Family Caregiver Alliance (FCA) / National Center on Caregiving
800-445-8106 or www.caregiver.org
Provides caregiver education and online support groups.

National Association for Home Care and Hospice
202-547-7424 or www.nahc.org
Provides a home care and hospice locator.

National Library Service for the Blind and Print Disabled
888-657-7323 or www.loc.gov/nls
Provides free braille and audio reading materials.

Local brain injury resources

Brain Injury Association (BIA) of Ohio
614-481-7100 or www.biaoh.org
Provides resources and education to help caregivers and those living with brain injury.

Epilepsy Alliance Ohio
614-725-1015 or www.epilepsy-ohio.org
Provides information on counseling referral services and supports groups.

General resources

Listed below are some helpful resources in central Ohio.

Home Health Services

Columbus Public Health
614-645-7417 or columbus.gov/publichealth
Offers many services including education, health and wellness, child health services, dental, and vision care for adults, and food services.

LifeCare Alliance
614-278-3130 or lifecarealliance.org
Provides home delivered meals to qualifying central Ohio residents, visiting nurses, nurse practitioners, dietitians, wellness center, senior centers, homemakers, and home health aides.

Ohio Department of Medicaid – The Ohio Home Care Waiver Program
1-800-324-8680 or medicaid.ohio.gov/FOR-OHIOANS/Programs/Ohio-Home-Care-Waiver
Allows people with physical disabilities and unstable medical conditions to receive care in their homes.

Housing

Columbus Metropolitan Housing Authority
614-421-6000 or cmhanet.com
Helps people find affordable housing. Call or go to their website for more information.

Ohio Department of Aging, Home and Community Care
800-266-4346 or aging.ohio.gov/wps/portal/gov/aging/care-and-living/get-help/home-and-community-care/
Provides many services and supports that can help elders who require a nursing home get the assistance they need to remain in the setting of their choice. Programs include PASSPORT Medicaid waiver program and Assisted Living Waiver Program.

Legal Assistance

Columbus Bar Association
614-221-4112 or cbalaw.org
Provides free lawyer referrals. Call 8:30 a.m. to 5:00 p.m. weekdays and the operator will help match a lawyer to your need. Call or go to their website for more information.

Disability Rights Ohio
800-282-9181 (leave a message in the main voicemail system by pressing 2 and your call will be returned by a staff person during regular business hours) **or** disabilityrightsohio.org
Protects and advocates for the rights of people with disabilities who live in Ohio.

Legal Aid Society of Columbus
614-241-2001 or 614-224-8374 or columbuslegalaid.org
Provides legal support in civil cases for people with low income who cannot afford to hire an attorney. If you meet resource and income limits, there is no charge for services. You may need to pay for some court costs. Call for advice on housing problems, domestic violence, and other legal issues. They do not do criminal cases.

Return to Work or School

Columbus Urban League
614-257-6300 or cul.org
Offers programs including career services, education, and housing services.

Opportunities for Ohioans with Disabilities (OOD)
800-282-2695 when asked for an extension, press "0" (zero) **or** ood.ohio.gov
Works with partners in business, education, and non-profit organizations to help Ohioans with disabilities to have quality employment and gain independence.

The Ohio State University Disability Services
614-292-3307 or ods.osu.edu
Offers a variety of services for Ohio State students with disabilities. Services include exam accommodations, specialized adaptive equipment and technical training assistance, counseling, and advocacy.

Financial Assistance

Franklin County Department of Job and Family Services
844-640-6446 or jfs.franklincountyohio.gov
Provides career and support services, and assists with signing up for programs, such as Medicaid and food assistance.

Medicare
800-633-4227 or TTY/TDD 1-877-486-2048 or medicare.gov
Provides health insurance to people aged 65 or older, people under the age of 65 with certain disabilities, and people with permanent kidney failure.

NeedyMeds
800-503-6897 or needymeds.org
Provides information about discounted medicines or pharmacy assistance.

Ohio Best Rx Program
866-923-7879 or ohiobestrxprogram.org
Helps low income, uninsured Ohio residents get free or discounted brand name medicines. Call or go to their website to determine your eligibility. If eligible, you will need to have your doctor approve and sign an application form which you will then mail directly to the drug manufacturer.

Ohio State University Wexner Medical Center Financial Counseling
614-293-0860 or wexnermedical.osu.edu
Provides help with completing applications for government-sponsored programs, explains other assistance programs, or helps create a payment plan for medical treatment if you meet criteria.

Social Security local office
866-964-1723, 800-772-1213, TTY 800-325-0778 or ssa.gov/benefits/disability
Provides financial assistance to people with disabilities with the Social Security Disability Insurance (SSDI) program and the Supplemental Security Income (SSI) program. Those with a brain injury can receive benefits from Social Security, SSI, and SSDI. Apply by calling or applying online as soon as you become disabled.

Drug/Alcohol Counseling Services

Central Ohio Group Fellowship (COGF)
614-253-8501, 800-242-1729 or http://aacentralohio.org/
Assists Alcoholics Anonymous (AA) groups in central and southeastern Ohio. Call or go to their website for more information.

House of Hope
614-291-4691 or hofhope.org
- Alcohol and drug abuse treatment services.
- Adult residential and outpatient programs. Call 614-276-4840.

Maryhaven
614-445-8131 or https://maryhaven.com
Provides drug and alcohol rehabilitation regardless of ability to pay. Provides programs across cultures, ages, and severity of addiction. Call or go to their website for more information.

Nicotine Anonymous
614-487-9025 or nicotine-anonymous.org
- Provides a program built off of Alcoholics Anonymous (12 steps).
- Provides meetings via telephone if you are unable to or if it is difficult to leave your home. Call to get the phone schedule and conference codes.
- Nicotine Anonymous World Services' toll free phone number is 1-877-879-6422.

Mental Health and Addiction Services Department
614-466-2596 or mha.ohio.gov
Call the number listed to learn about treatment options. Have the administrative assistant direct you to the appropriate party for your concerns. They should be able to mail you a list of service options in Columbus or elsewhere.

Parkside Behavioral Health Care
614-471-1601 or thewoodsatparkside.com
Provides alcoholism and drug addiction services. Call for more information.

Traumatic Brain Injury (TBI) Network
wexnermedical.osu.edu/physical-therapy-rehabilitation/traumatic-brain-injury-network
Located at Ohio State Talbot Hall, the TBI Network serves residents of Frankin County with brain injuries who also have a diagnosed substance use disorder.

Other Counseling Services

Catholic Social Services
614-221-5891 or colscss.org
Offers counseling, parenting services, and parenting counseling. Offers career development counseling specifically for the Hispanic Community. Offers social worker consults for the elderly for housing, medical appointments, insurance, transportation, and other health care needs. Provides homemaker and transportation services for seniors. Provides bill payment assistance for seniors and individuals with disabilities.

North Central Mental Health Services
614-299-6600 or ncmhs.org
Provides mental health and recovery services. Offers an outpatient clinic for mental health and chemical dependence. Provides psychiatry consults. NCMHS Hotlines:

- Suicide Prevention Hotline: 221-5445
- Teen Hotline: 294-3300
- Senior Hotline: 294-3309

Ohio State Rehabilitation Psychology
614-293-3830 or wexnermedical.osu.edu/physical-therapy-rehabilitation/rehabilitation-psychology
The Division of Rehabilitation Psychology at the Ohio State Wexner Medical Center is located in Dodd Rehabilitation Hospital and Martha Morehouse Outpatient Care. It has support programs for those with disabilities from injury or illness. Psychologists work with other members of the health care team to ensure the best care.

Syntero
www.syntero.org
Provides behavioral health care services and substance abuse counseling, and community based services to meet the needs of you and your family at 4 locations in central Ohio. Accepts a number of payer sources including private insurance, Medicaid, Medicare, self-pay, and a sliding fee scale for uninsured Franklin, Delaware, and Morrow County residents. Visit the website for a list of locations and contact phone numbers.

General resource directories and coordinating agencies

Action for Children
614-224-0222 or actionforchildren.org
Helps individuals find local child care agencies. This is a free service. Call to request written materials or to make an appointment. You can also go to their website for more information.

Lutheran Social Services (formerly HandsOn Central Ohio)
Call 2-1-1 or visit lssnetworkofhope.org/211centralohio/
Reach thousands of social service, government, and community resources in Franklin County to address any problem you may be facing or to be connected to volunteer opportunities.

Netcare Access
614-274-9500 or 614-276-2273 (Crisis Hotline) or netcareaccess.org
Connects people to mental health, crisis intervention, and substance abuse services. Serves anyone regardless of income.

Ohio Department of Job and Family Services
1-800-852-0010 or 614-466-2100 or jfs.ohio.gov
Assists people by connecting them with programs administered by local agencies. Provides help with cash assistance, food assistance, or child care.

Veterans Administration
1-800-273-8255 (Suicide / Veterans Crisis Line) or www.va.gov
Assists veterans with issues on education, health care, insurance, burials, housing, etc. Helps locate local VA sites. Call or go to their website for more information.

THE OHIO STATE UNIVERSITY

WEXNER MEDICAL CENTER

wexnermedical.osu.edu