



# Traumatic Brain Injury Patient Education Handbook











The journey ahead for TBI survivors and caregivers can be challenging, but with dedication and support, anything is possible. Our Rehab team is here to inspire and guide you toward a successful recovery.



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## Meet your Rehab Interdisciplinary Team

The journey to recovery after a (TBI) can be a daunting one. However, with proper rehabilitation, the possibilities for improvement are endless. The first year after a TBI is the most critical period, as the bulk of recovery typically occurs during this time. But, with consistent effort and dedication, TBI survivors can continue to make progress well beyond the first year. Inpatient Rehabilitation can significantly enhance independence in areas such as self-care, mobility, communication, cognitive, and social skills. By working with rehabilitation specialists under the guidance of a rehabilitation physician, TBI survivors can receive personalized treatment plans tailored to meet their unique needs. With the right mindset and support, the road to recovery can be a rewarding and fulfilling one.



- **Physiatrist:** A physiatrist is a doctor who practices physical medicine and rehabilitation. In the TBI Rehabilitation program, the physiatrist is involved with the evaluation and treatment of patients who have had a TBI. At the start of treatment, they work with each patient and his or her family to identify the patient's medical needs and determine treatment goals. Based on these needs and goals, the team develops and carries out a treatment plan to help you achieve the best possible outcome.
- **Case Manager:** Your care manager will assist you and your family to find any barriers and community resources needed for after your hospital stay. He or she will become involved with your care from the beginning of your stay and work with other agencies to coordinate your care. Your case manager will also set up training with your family.
- **Rehabilitation Nursing:** Rehabilitation nursing consists of registered nurses, licensed practical nurses, and certified nursing assistants who provide care 24 hours a day. They will help you become independent with activities of daily living (ADLs), manage your medicines, and ensure your safety and wound care.
- **Physical Therapist (PT):** The physical therapist will help you move, reduce pain, restore function, and prevent further disability. Your treatment plan may include helping you be mobile through gait training (walking) or using a wheelchair. You will also participate in transfer and balance training and an exercise program to help you get better.
- **Occupational Therapist (OT):** The occupational therapist will help you regain independence with activities of daily living (ADLs). These are the things you do every day to take care of yourself -- bathing, grooming, dressing, feeding, and preparing meals. Your OT will guide you through exercises to improve your ADLs after a TBI. They may also suggest equipment, changes to your home or workspaces, and ways to be safe in your home or community. Your OT will also address upper body function, cognition (thinking skills), and visual processing.
- **Speech Language Pathologist (ST):** The speech-language pathologist (also known as a Speech Therapist) will help you improve speech, language (talking, understanding, reading, and writing), cognition (thinking skills), and swallowing skills. The Speech Therapist evaluates and treats these disorders. The ST will also train you and your family on strategies to improve these skills in your home, work, and community.
- **Rehab Therapy Techs:** The rehab therapy tech assists the therapy team, per their delegation, with your care, which may consist of strength and range of motion (ROM) exercises, balance, or endurance tasks.
- **Respiratory Therapists:** Respiratory therapists specialize in airway management, mechanical ventilation, and treatment of chronic lung problems, such as COPD.
- **Pharmacists:** They recommend appropriate medications in collaboration with physicians, assess for reactions, and participate in rehab team meetings.
- **Dietitians:** Dietitians teach patients about healthy eating and special diets (low salt, low fat, low calorie) as well as educate about diabetes management.

# The Importance of Therapy and Inpatient Rehabilitation

## Goals of Therapy

Our goal is for you to receive three hours of specialized therapy per day during the week, and if needed, we will provide continued therapy on the weekend. The therapy is spread throughout the day between occupational, physical, and speech therapy. If you do not need speech therapy, the three hours will be spread between occupational and physical therapies. Our therapists use specialized neuromuscular re-education training and technology to help you gain as much function as possible.

## Weekend Therapy

Weekend therapy is provided and individualized to each patient. Many factors impact the frequency and time spent in therapy. On Friday each week, your therapist will discuss these factors with you and review your personal weekend therapy plan. On Saturday and Sunday mornings, your board will be updated with the time your therapy is scheduled. If your board is blank, this means you have no planned weekend therapy that day. If you have any questions regarding your weekend therapy plan, please ask any rehab team member.

## Interdisciplinary Team Conference

All team members gather weekly to review information on your functional limitations, skills, and strengths. These meetings help the team form a plan of care and a project on how much time is needed to reach your goals. Your case manager will take the information from these meetings and communicate with you and your family/caregiver so that you feel informed and prepared for continued rehabilitation or discharge to the community.

## Sample Day in Rehab

6:00 a.m. – 7:40 a.m.: Begin getting ready for the day. This often includes showering, grooming, and getting dressed with the help of nursing staff or as part of your occupational therapy treatment.

7:40 a.m. – 8:30 a.m.: Eat your breakfast and take any medication that is ordered

7:00 a.m. – 12:20 p.m.: Attend Physical Therapy, Occupational Therapy, and Speech Therapy, and receive nursing treatments if necessary.

12:20 p.m. – 1:00 p.m.: Lunch and take any medication that is ordered

1:00 p.m. – 5:00 p.m.: Attend Physical Therapy, Occupational Therapy, and Speech Therapy, and receive nursing treatments if due.

5:40 p.m. – 6:30 p.m.: Dinner and take any medication that is ordered

After 6:30 p.m.: It is time to rest, relax, visit with family and friends, prepare for bedtime, and take any medications or receive nursing treatments that may be due.



*Important Note: Please remember that the above schedule is a sample schedule with approximate times only because we individualize a patient's day based on his or her specific needs.*

# The Brain and Traumatic Brain Injury

Brain injury happens suddenly. We recognize that this is a challenging time for you. You are not alone. According to the Centers for Disease Control and Management, 1.4 million people suffer a brain injury a year in the United States. By learning more about the effects of brain injury and our team of specialists, we hope to ease some of the anxiety that this type of injury causes. We encourage you to ask questions.

## **Defining Traumatic Brain Injury (TBI)**

A traumatic brain injury, or TBI, is an injury that affects how the brain works. Such injuries can result in impaired physical, cognitive, emotional, and behavioral functioning.

## **Causes of TBI**

Common causes of TBI include car accidents, falls, assaults or blows, penetrating injury (such as from a gunshot) to the head, sports injuries, and explosive blasts. A TBI can result in various types of brain damage. For instance, the brain might shake within the skull, leading to contusions (bruises) at the impact sites, which, similar to bruises on other parts of the body, typically heal over time. Extensive bruising may cause swelling that takes longer to subside.

Brain injuries can also occur without a direct impact to the head, such as in cases of whiplash. During such events, rapid acceleration and deceleration of the head can cause twisting or rotational forces that may stretch and possibly sever the brain's long-range connecting fibers. This damage disrupts the communication between nerve cells, impairing the brain's network efficiency.

Another prevalent source of injury is damage to the blood vessels around the brain, which can lead to bleeding between the brain and the skull. Often, this type of bleeding resolves naturally as the blood vessels heal.

Additionally, exposure to sudden pressure changes, like those experienced in explosions, can harm the brain. These rapid shifts in pressure can create air bubbles in the bloodstream, which may travel to the brain and disrupt its blood supply.

## **More about the Brain and Traumatic Brain Injury**

The brain acts as the command center for our bodies. Like any other body part, it can suffer damage from an accident or a disruption in blood flow. The results of such damage can vary, from slight issues with thinking and memory to coma. This injury might also impact speech, vision, and movement capabilities. Changes in behavior, emotions, and personality are common outcomes, often leading to alterations in the individual's overall disposition. These issues can be temporary or permanent, leading to either partial or total disability. The recovery process for each individual is unique and influenced by various factors, such as the patient's pre-injury personality, which part of the brain was affected, the extent of the brain damage, the time elapsed since the injury, and any involvement of drugs or alcohol.

There are three main types of TBI:

- Mild TBI or concussion
- Moderate TBI
- Severe TBI

## TBI Symptoms

Symptoms of a TBI can range from mild to severe, based on the degree of brain damage. A mild TBI may not necessarily involve a loss of consciousness but could lead to brief unconsciousness lasting a few seconds to minutes.

### Symptoms of Mild TBI include:

- headaches
- confusion
- a sense of lightheadedness
- dizziness
- blurry vision or eye fatigue
- ringing in the ears
- an unpleasant taste in the mouth
- tiredness or lethargy
- changes in sleep habits
- changes in mood or behavior
- difficulties with memory, concentration, attention, or thinking

A moderate or severe TBI may exhibit all or some of the mild TBI symptoms, as well as additional, more intense symptoms such as:

- persistent or worsening headaches
- nausea or recurrent vomiting
- convulsions or seizures
- inability to wake from sleep
- pupil dilation in one or both eyes
- slurred speech
- weakness or numbness in the limbs
- loss of coordination
- heightened confusion, restlessness, or agitation
- prolonged loss of consciousness





## Types of TBI

**Skull Fractures** can happen anywhere on the skull and might be classified as either open or closed.

- A closed fracture involves a break in the skull's bone without any tear in the skin or scalp.
- An open fracture includes both a break in the skull's bone and a rupture in the skin or scalp, exposing the brain to external elements and potentially leading to infections such as meningitis if untreated. Additionally, bone fragments from an open fracture may penetrate the brain, creating a depressed fracture, which can harm brain tissue and might necessitate surgical intervention.

**Contusion** is a bruise on the brain resulting from the brain striking the skull during an impact. There are two types of brain contusions:

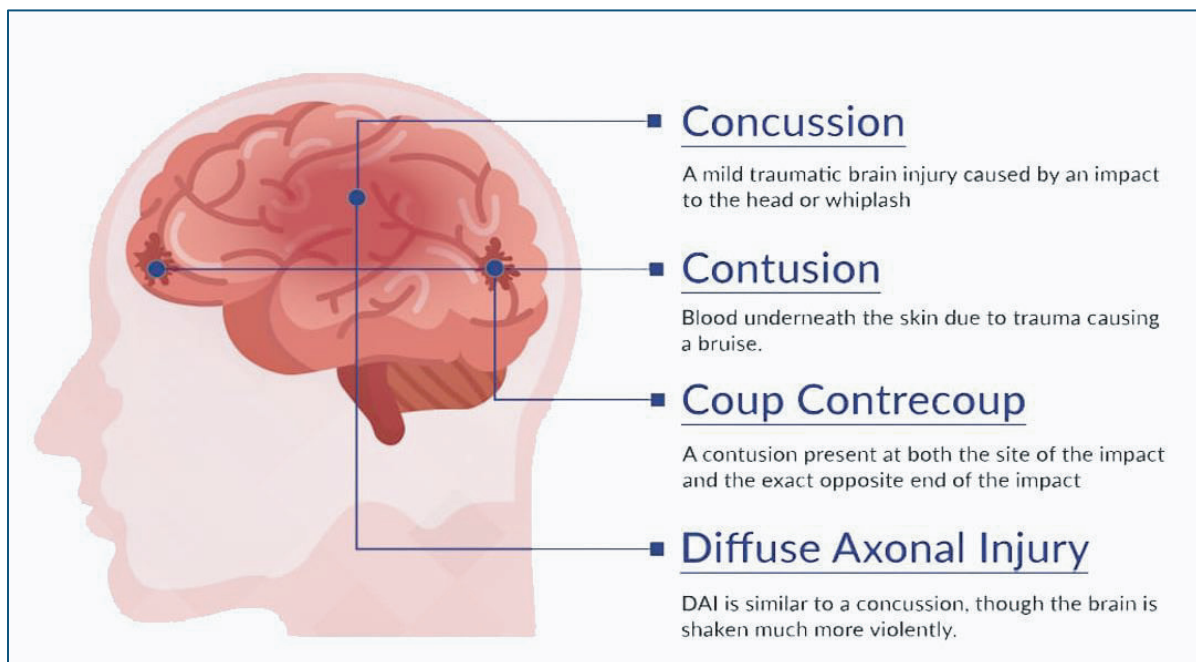
- Coup contusions, which occur at the impact site.
- Contrecoup contusions, which happen on the opposite side from where the impact occurred due to the transfer of force.

**Concussion** is a deep brain injury that can disrupt consciousness and is often considered a mild TBI.

**Anoxic brain** injury occurs when events such as cardiac arrest or severe blood loss prevent oxygen-rich blood from reaching the brain. If the brain is deprived of oxygen for about five minutes, brain cells begin to die, leading to anoxic brain damage. Once brain cells perish, they do not regenerate, although other neurons may sometimes compensate for some of the lost functions. If they cannot, the neurological impairments remain permanent.

**Penetrating head injuries**, such as those from gunshots or other projectiles, can cause significant brain damage as the projectiles penetrate deep into the brain and deliver considerable energy.

**Hematomas**, also referred to as blood clots, arise when a blood vessel breaks during an injury. If a hematoma is large enough, it can compress or shift the brain, sometimes requiring surgical removal.





## Managing Specific TBI Symptoms

### Poor Concentration:

The primary reason for poor concentration is fatigue. When focusing becomes challenging, it's beneficial to take a break and relax. Allocating 15 to 30 minutes daily for relaxation might suffice. If issues persist, consider reducing your workday, class schedule, or daily routines temporarily. Persisting without breaks generally worsens the situation.

Reducing distractions can enhance focus. Lower the volume of the radio or choose a quiet workspace. Initially, avoid loud environments and reintroduce them gradually. Avoid multitasking, such as writing while on the phone or taking notes during conversations, as these can overextend your concentration initially. Concentration improves significantly after adequate rest, so tackle important tasks when you feel most alert.

### Fatigue:

Feeling more tired than usual after a head injury is normal, and many people experience fatigue as they recover. The most effective treatment for fatigue is rest. Gradually increase your activities without overexerting yourself. Extra sleep can be beneficial, and many find they have more energy in the morning. Consider an afternoon nap if evenings feel more challenging. Typically, both physical and mental fatigue decrease over six months post-injury.

A thoughtfully increased exercise regimen can also improve endurance. Start with manageable activities and integrate rest periods, monitoring your fatigue levels to avoid exhaustion.

### Sleep Difficulties:

Despite expectations, sleep issues are common after a brain injury. Many individuals struggle with falling asleep or maintaining sleep, resulting in excessive daytime sleepiness. Lighter and frequently interrupted sleep is typical. Quality sleep is crucial for recovery, as insufficient sleep can worsen other symptoms like irritability and concentration difficulties.

Tips to enhance sleep include maintaining a consistent wake time, avoiding caffeine in the evening, and ensuring a comfortable sleeping environment. Brief daytime naps are recommended but should not interfere with nighttime sleep.

### Irritability and Emotional Changes:

Post-injury, some individuals may express emotions more readily or react strongly to minor irritants. This heightened emotionality often stems from the brain's reduced capacity to regulate feelings. If you notice increased irritability or emotional reactions, it might be time to step back from stressful situations. Employing relaxation techniques or channeling emotions into physical activities can help. Often, irritability links back to fatigue, so adjusting your schedule for more rest can mitigate these emotional responses.

Never give a person with a TBI any alcohol or medications that have not been prescribed in order to calm the person.

### Depression:

Depression is more prevalent following a brain injury, affecting over a third of individuals in the first year post-injury. This increase may be due to chemical imbalances and disruptions in brain networks responsible for mood regulation. Losses in social connections, abilities, or work can also contribute to depression. Engaging in daily enjoyable activities can help alleviate depressive symptoms.

### **Memory Problems:**

Memory issues post-injury can stem from direct brain trauma or from related symptoms like poor concentration or fatigue. Employing strategies such as writing down important information, using recording devices, and setting reminders can aid memory during recovery.

### **Headaches:**

Headaches are a common recovery symptom, often induced by stress or tension, which can arise weeks after the initial injury. If headaches persist, reducing stress and adjusting your daily routine might help. Techniques like progressive muscle relaxation can alleviate muscle tension linked to headaches..

### **Anxiety:**

Worries about recovery or work can lead to anxiety, which is best managed by understanding that symptoms are a normal part of recovery, ensuring sufficient rest, and gradually resuming responsibilities.

### **Confusion and Thinking Difficulties:**

Feeling confused or having trouble thinking are typical reactions to a head injury. Discussing these feelings with a trusted person can help. Like other symptoms, these cognitive challenges often suggest you might be resuming activities too quickly

### **Dizziness, Visual and Sensory Sensitivity:**

Dizziness and visual issues should be evaluated by a doctor. Medications for motion sickness or corrective eyewear might be prescribed. Sensitivity to light and noise, although common, is often exacerbated by focusing on the symptoms. Reducing attention to these issues can hasten recovery.



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## Behavior Management after a TBI

After a TBI, a patient's behavior may change in ways that can challenge both the individual and their caregivers. It is critical to address these behavioral issues to enhance the effectiveness of rehabilitation.

### Common behavioral issues observed post-TBI include:

- **Impulsivity:** Acting without considering the consequences.
- **Disinhibition:** A reduction in socially appropriate restraints.
- **Agitation:** Intense emotional responses to over stimulation, such as excessive noise or activity, or feelings of frustration, confusion, or irritation.
- **Perseveration:** The repetition of a particular thought, idea, or action.
- **Confabulation:** Filling memory gaps with fabricated stories that the patient believes are true.
- **Misperception:** Holding erroneous beliefs about the nature of events, sometimes of a paranoid nature.

### Key points to remember:

- Such behaviors are not deliberate; they are manifestations of brain damage, particularly in the frontal and temporal lobes.
- This damage can lead to symptoms such as frustration, impulsivity, aggression, suspicion, memory issues, and disorientation.
- Healthcare teams, including therapists, doctors, and nurses, collaborate to develop effective behavior management strategies. Consistency in responses and attitudes from everyone involved is essential to managing these behaviors effectively.

### Strategies for managing problematic behaviors include:

- Assessing the frequency and severity of the behaviors. Infrequent episodes may be manageable, but more frequent or severe behaviors can obstruct recovery.
- Considering the patient's age in all interactions to avoid inducing frustration or hostility.
- Providing clear and immediate feedback. Feedback should be straightforward and can be either positive (praise for good behaviors) or negative (intervention to stop harmful behaviors).
- Adapting interactions as the patient's behavior improves while striving to maintain consistency.
- Creating a supportive environment that minimizes over stimulation and frustration. For example, limit the number of visitors, and reduce noise from TVs or music.
- Focusing on praise and encouragement rather than punishment.
- Setting attainable, incremental goals to foster a sense of progress.
- Offering encouragement, especially as behaviors might initially worsen when changes are being implemented.
- Consulting with a doctor if persistent negative behaviors disrupt the recovery process, to possibly integrate medications with behavioral strategies.

## Alcohol Use After TBI

There is a significant correlation between alcohol use and TBI. Research indicates that up to two-thirds of individuals with TBI have a history of alcohol abuse or engage in risky drinking behaviors. Between 30-50% of TBI incidents occur while the individual is intoxicated, and roughly one-third of these cases also involve other drugs. Post-injury, about half of those affected, reduce their alcohol consumption or quit drinking entirely. However, some continue to consume alcohol excessively, elevating their risk of adverse outcomes.

### Alcohol and TBI recovery

- TBI recovery goes on for a lot longer than we used to think was possible. Most people see improvements for many years after injury.
- Drinking can slow down or stop TBI recovery.
- Not drinking gives the brain the best chance to heal.
- People's lives often continue to get better many years after TBI. Not drinking can increase the chance of improvement.

### Alcohol, brain injury and seizures

- People with TBI are at risk for seizures.
- Drinking may increase the risk of having seizures and can trigger seizures.
- Not drinking may reduce the risk of seizures



### Alcohol and the risk of having another TBI

- People who have had a TBI are at high risk of having another one.
- People who have an alcohol-related TBI are more than four times as likely to have another TBI. This may be because both TBI and alcohol can cause problems with vision, coordination, and balance.
- Not drinking can reduce the risk of having another TBI.

### Alcohol and cognitive function

- Alcohol and TBI both affect cognitive skills like memory and flexible thinking (this is thinking about things in a different way).
- Alcohol may make some of the cognitive problems caused by TBI worse.
- Alcohol may affect people with TBI more than it did before their TBI.
- The negative cognitive effects of alcohol can last from days to weeks after drinking stops.
- Not drinking can keep your cognitive abilities at their best and help you stay sharp and focused.

### Alcohol and mood

- Depression is about 8 times more common in the first year after TBI than in the general population.
- Using alcohol can cause depression or make it worse.
- Alcohol can make anti-depressant medicines less effective. People who take these medicines should not drink.
- One way to improve feelings of sadness or depression after TBI is to stop or cut down on drinking.

### Alcohol and sexuality

- A low sex drive is the most common effect of TBI on sexuality.
- Alcohol causes low levels of testosterone in men.
- Alcohol may cause problems with erections and orgasms in men.
- Alcohol reduces sexual satisfaction in men and women.

## Sexuality after a TBI

After having an TBI, you may have a lot of questions about your sexuality. This could include concerns about body changes, sexual activity, and relationships. It's important to know that there are many ways to express your sexuality, and finding what works for you during your recovery is key. However, you may experience various medical, physical, and psychological changes that can affect your sexual health, so it's important to be aware of them and seek help if needed.

### Medical

Comorbid medical conditions alongside your TBI may impact your sexual function. Medicines, medical treatments, and medical issues other than your TBI may also be affecting your interest or ability to take part in sexual activities. Stopping medicines can be dangerous, so talk to your doctor about a plan first.

### Physical

Your physical changes after an TBI can impact your mobility, impacting your sexual function. You may need to adjust how you take part in sexual activity, such as trying new positions, using adaptive equipment, and managing pain or spasticity (muscle tightness or spasms).

### Psychological

Many people have changes in their thinking or mood after an TBI, including feeling sad, worried, frustrated, guilty, or embarrassed. People can also have changes to how they feel about their body, their self-image, or their role in relationships. These feelings can impact their interest or how they take part in sexual activities. Although these topics can be challenging or uncomfortable, dealing with them is a part of a TBI recovery. Many sexual problems after an TBI are “thinking” problems rather than “doing” problems. Talk to your treatment team if you have concerns with sexual functioning.



## Treatment for the physical changes after a TBI

Injury to the brain can affect how you move your body. As a result of injury, you may have little or no control over your body. Muscles may become weak, tighten, or twitch. Therapy can help you relearn how to move and gain strength. Improving posture and the ability to sit is an early goal of therapy. Range of motion exercises can also help to improve movement and help prepare you to perform a task. You may need to wear a splint or brace to hold a joint in a proper position.

The treatment of these physical changes depends on the specific symptoms and their severity. Below are some general guidelines and treatments for the physical changes after a TBI:

Regaining balance and depth perception are common problems. A therapist can help you sit up, stand or walk. They may practice walking on a level surface and then progress to uneven surfaces and stairs. Some patients may need to use a wheelchair, walker, or cane.

### Assistive Devices:

- Depending on the severity of physical impairments, devices such as wheelchairs, walkers, or canes may be necessary to assist with mobility.
- Make sure an affected arm or leg is supported in a proper position.
- Do your prescribed exercise program as the therapists have designed for you
- Help make sure to follow your splint-wearing schedule. (if applicable)
- Communication aids and adaptive equipment for daily living may also be used.

### Lifestyle Adjustments:

- Adequate rest, proper nutrition, and avoiding activities that pose a risk of reinjury are essential.
- Regular medical follow-up ensures that any complications or changes can be addressed promptly.

### Effects on Senses:

Sometimes an injury damages the part of the brain that controls balance, sight or hearing. You may be sensitive to light or have double vision. In these cases, the therapist will continuously assess your ability to see and may refer you to an eye doctor or a neuroophthamologist to suggest sunglasses or special lenses. Some patients lose hearing or vision on one side and can be taught strategies to accommodate.

- Limit distractions (i.e., turn off all electronics such as the TV, mobile phone, and computer, and close the door).
- Adjust the lighting in your room

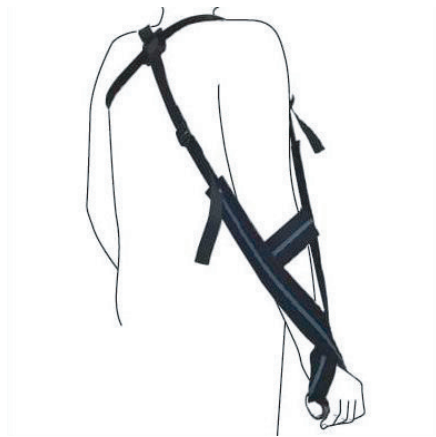
### Medications:

- Pain Management: Over-the-counter or prescription painkillers may be used to manage headaches or other pain resulting from the injury.
- Anticonvulsants: To prevent seizures, which are a common complication following a TBI.
- Muscle Relaxants: For muscle spasms or stiffness, muscle relaxants or other medications might be prescribed.



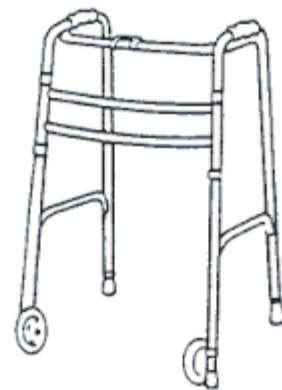
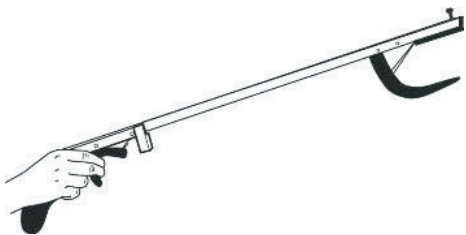
## Braces and Orthotics

Braces and orthotics may be used to support weak joints and assist with mobility.



## Adaptive equipment and Durable Medical Equipment

Your therapist may recommend various equipment to assist with positioning, safety, mobility, and function.



## Preventing Falls

Falls are common and can happen both inside and outside the home. The risk of falling increases after a TBI. To prevent falls, it is important to take action, such as creating a safe home environment, avoiding potential fall hazards, and engaging in physical exercise to improve strength and balance.

### Home Safety

- Set up your home so you do not have to climb steps.
- Have a bed that is low so that your feet touch the floor when you sit on the edge of the bed.
- Keep tripping hazards out of your home.
- Remove loose wires or cords from areas you walk through to get from one room to another.
- Remove loose throw rugs.
- Do not keep small pets that you could trip over in your home.
- Fix any uneven flooring in doorways.
- Good lighting is needed, especially for the path from the bedroom to the bathroom and in the bathroom.

### Stay safe in the bathroom

Put handrails in the bathtub or shower and next to the toilet.

Place a slip-proof mat in the bathtub or shower.

Reorganize the home so things are easier to reach. Keep a cordless or cell phone with you when you need to make or receive calls.

### Exercise to Help Build Your Strength

Weak muscles that make it more difficult to stand up or keep your balance are a common cause of falls. Balance problems can also cause falls. When you stand up from a sitting position, go slowly. Hold on to something stable. If you have problems getting up, ask your provider about seeing a physical therapist. The therapist can show you how to build strength and balance to make getting up and walking easier. Continue to follow the prescribed Home Exercise Program your therapist gave you.





## The Caregiver after a TBI

Caregivers play a crucial role in the post-TBI recovery process. However, they are often overlooked, and their essential contribution to successful home care is ignored. Taking care of TBI survivors at home can result in high levels of physical, emotional, and mental stress. Caregiving can be particularly challenging due to job disruption and family life. While family caregivers can promote positive post-TBI recovery outcomes, they must also prioritize self-care. Every TBI survivor's recovery journey is unique, and even if the survivor returns to work and maintains a high degree of independence, family members may need to play a more significant role in their life than before the TBI.

It is important to remember that you are not alone in this task. Help is available in the community, and it is crucial to seek it out. Rehabilitation can be a lengthy process with slow and sometimes erratic progress. Every person's recovery journey is different. Your role as an advocate will continue throughout this journey. During the recovery process, it is essential to focus on your loved one's capabilities rather than their limitations and show encouragement for every new gain, whether small or large.

Providing care for a loved one can often feel overwhelming, but it's important to be mindful of your own health and how stress can impact it. To prevent caregiver burnout, make sure you're getting sufficient sleep, eating a balanced diet, tending to your own medical needs, and exercising regularly if possible. Remember to prioritize your own well-being while caring for your loved one.



Counseling and respite care, a break provided by a family member, friend, or hired caregiver, can give you some much-needed time to regroup and renew your energy for the tasks ahead. Remember to ask for help when you feel the need. Getting support for yourself and your loved one is essential and beneficial for both of you.

**Please scan the QR code for more information on the TBI Support Group Finder:**



## Returning to Work or School After a TBI

Returning to work after a TBI is a significant step that requires careful planning and consideration. Here are some key things to consider:

- **Medical Clearance:** Before considering a return to work, it's crucial to get medical clearance from your healthcare provider. They can assess your recovery, cognitive functions, and readiness to resume work responsibilities.
- **Gradual Return:** If allowed by your employer, a phased or gradual return to work can be beneficial. This might involve working part-time initially, taking on lighter duties, or working from home to reduce stress and fatigue.
- **Workplace Accommodations:** Communicate with your employer about potential accommodations. This might include changes to your work schedule, modifying your workspace, or using assistive technology.
- **Stress Management:** Returning to work can be stressful, particularly if you feel pressure to perform at pre-injury levels. To manage stress levels effectively, practice stress management techniques such as mindfulness, meditation, or light exercise.
- **Monitoring Symptoms:** Continuously monitoring symptoms is essential. If you experience setbacks, such as headaches, dizziness, or cognitive impairments, consider adjusting your workload or seeking additional medical advice.
- **Support Network:** Maintain a support network, including friends, family, therapists, or support groups. They can offer encouragement and advice, helping you navigate the challenges of returning to work.
- If a patient cannot return to work within 12 months of a TBI, they may consider applying for Social Security Disability benefits. To learn more, visit (<http://www.ssa.gov>) or call 1-800-772-1213.

### To return to secondary school (college or university):

- **Registration with the Resource Center:** Patients should register with their university's resource center for students with disabilities. These centers offer accommodations such as extra time for tests and note-takers. Patients will need to provide documentation of a TBI to confirm eligibility.
- **Consider Online Classes:** Taking an online class can serve as a steppingstone before returning to a community college or university. Online courses allow therapists to monitor learning styles, develop compensatory strategies, and support the patient's academic journey in a therapeutic environment.

Scan the QR code below for additional information on returning to work:



## Returning to Driving After a TBI

Getting back to driving is often a goal. Although we may take it for granted, driving is a very complex activity requiring a number of cognitive and physical skills, as well as the ability to coordinate these. Any of these skills may be impaired after a brain injury. Muscle weakness, vision changes, slower reaction times, and cognitive problems can require a driving evaluation.

Most states require that someone notify the Motor Vehicle Department (MVD) if their medical status has changed, which could impact their ability to safely operate a vehicle. It is each person's responsibility to notify the MVD, and failure to do so could result in criminal consequences and civil liability in the event of an accident. Returning to driving after a TBI is a gradual process, but with careful planning and support, it can be a safe and manageable transition.

### To initiate the return to driving process:

- **Medical Clearance:** Before returning to driving, it's crucial to get medical clearance from your healthcare provider. This ensures that your cognitive functions, motor skills, and reflexes are adequate for driving.
- **Driver Evaluation:** Consider undergoing a comprehensive driver evaluation. This assessment, conducted by an occupational therapist or driving specialist, tests your reaction time, attention span, cognitive abilities, and physical coordination.
- **Driving Restrictions:** Be aware of any driving restrictions imposed by your healthcare provider or local laws. Restrictions may include limiting driving to daylight hours or avoiding high-traffic areas until you regain confidence and ability.
- **Practice:** Start with supervised driving practice in a safe environment, such as a quiet parking lot or empty streets. Driving in heavier traffic and different weather conditions gradually increases the difficulty.
- **Adaptive Devices:** Depending on the severity of your injury, adaptive devices may be necessary. These devices can assist with steering, braking, or accelerating, making driving safer and more manageable.
- **Refresh Your Knowledge:** Consider revisiting the driving rules and laws specific to your location. This can help build confidence and ensure you're up-to-date with current regulations.
- **Monitoring Symptoms:** Continuously monitor symptoms such as dizziness, headaches, or fatigue. If you experience any issues, stop driving immediately and consult your healthcare provider.



## Discharge from Inpatient Rehabilitation

### Going Home After TBI

Discharge Plan- During your hospital stay, your healthcare team will teach you and your support system how to take care of your needs after you leave the hospital. Before you leave the hospital, you and your support system will be given your discharge instructions.

This information will include:

- Follow-up appointment with your doctor
- Important phone numbers
- Directions for how to care for yourself
- A list of your current medicines and any new prescriptions
- Information on what you can do to help your recovery
- Medical equipment and follow-up therapy information



### What to Expect at Home

Because of injury to the brain from the TBI, you may notice problems with:

- Changes in behavior
- Doing easy tasks
- Memory or Paying attention
- Moving one side of the body
- Muscle spasms
- Sensation or awareness of one part of the body
- Swallowing
- Talking or understanding others
- Thinking
- Seeing to one side (hemianopia)
- You may need help with daily activities you used to do alone before the TBI.

## Discharge from Inpatient Rehabilitation (continued)

### Depression

Depression frequently occurs following a TBI. Approximately half of all individuals with TBI experience depression within the first year post-injury. This number rises to nearly two-thirds within seven years after the injury. Additionally, more than half of those with TBI who suffer from depression also experience significant anxiety.

### Causes of Depression

Depression following a traumatic brain injury (TBI) can stem from several sources, and these factors can vary widely among individuals.

- One primary cause is the physical changes in the brain due to the injury itself. Damage to areas of the brain that regulate emotions can lead to depression.
- Additionally, changes in the brain's neurotransmitters, which are natural chemicals that influence mood, can also trigger depression.
- Emotionally, depression may emerge as individuals grapple with the adjustments to new or permanent disabilities, changes in family dynamics, or shifts in their societal roles.
- Moreover, some individuals are more predisposed to depression due to genetic factors, personal or family mental health histories, and other pre-existing conditions unrelated to the brain injury.

### Addressing Depression After TBI:

It's crucial to seek professional help if you're experiencing symptoms of depression, particularly from healthcare providers who specialize in TBI. Depression is a medical condition similar to high blood pressure or diabetes and is not a reflection of personal weakness or fault. It requires proper treatment and cannot be overcome by mere willpower or desire.

Immediate action is necessary if you have suicidal thoughts. **If you have feelings of suicide, you should contact a local crisis hotline, dial 911, reach out to the 24-hour National Crisis Hotline at 800-273-8255, or visit an emergency room without delay.**

Fortunately, depression is treatable through medications, psychotherapy (counseling), or a combination of both. These treatments have been effective for many individuals dealing with depression post-TBI.

### Moving Around

- Moving around and doing normal tasks may be hard after a TBI.
- Make sure your home is safe. Ask your provider, therapist, or nurse about making changes in your home to make it easier to do everyday activities.
- Find out what you can do to prevent falls and keep your bathroom safe.





## Discharge from Inpatient Rehabilitation (continued)

### Support of your family and caregivers

TBI recovery can be difficult and confusing for survivors and caregivers. By increasing your knowledge about what a TBI is and what to expect, you can feel more in control and less overwhelmed. TBI recovery is a difficult process, and it can be hard to know how to help someone who had a TBI. It takes constant, dedicated work for survivors to regain function and independence, which can be physically and emotionally draining. That's why it is critical for TBI survivors to have a loved one there to support them through the ups and downs of recovery. As a family member or caregiver, you may be wondering how to best support your loved one as they navigate TBI recovery.

### Positioning

- Exercises to keep your elbows, shoulders, and other joints loose
- Watching for joint tightening (contractures)
- Making sure splints are used in the correct way
- Making sure arms and legs are in a good position when sitting or lying
- If you or your loved one is using a wheelchair, follow-up visits to make sure it fits well are important to prevent skin ulcers.
- Check every day for pressure sores at the heels, ankles, knees, hips, tailbone, and elbows.
  - Change positions in the wheelchair several times per hour during the day to prevent pressure injuries.
- If you have problems with spasticity, learn what makes it worse. You or your caregiver can learn exercises to keep your muscles loose.
- Tips for making clothing easier to put on and take off are:
  - Velcro is much easier than buttons and zippers. All buttons and zippers should be on the front of a piece of clothing.
  - Use pullover clothes and slip-on shoes.

### Communication

- People who have had a TBI may have speech or language problems. Tips for family and caregivers to improve communication include:
  - Keep distractions and noise down. Keep your voice lower. Move to a quieter room. Do not shout.
  - Allow plenty of time for the person to answer questions and understand instructions. After a TBI, it takes longer to process what has been said.
  - Use simple words and sentences; speak slowly. Ask questions in a way that can be answered with a yes or no. When possible, give clear choices. Do not give too many options.
- Break down instructions into small and simple steps.
  - Repeat if needed. Use familiar names and places. Announce when you are going to change the subject.
  - Make eye contact before touching or speaking if possible.
  - Use props or visual prompts when possible. Do not give too many options. You may be able to use pointing or hand gestures, or drawings. Use an electronic device, such as a tablet computer or cell phone, to show pictures to help with communication.

## Tips for Taking Medicines

Have all your prescriptions filled before you go home. It is very important that you take your medicines the way your provider instructed you to. Do not take any other drugs, supplements, vitamins, or herbs without asking your provider about them first.

Remember: Do NOT stop taking any of these medicines without talking to your provider!



## When to Call the Doctor

Call 911 or the local emergency number if the following symptoms develop suddenly or are new:

- A headache that gets worse and does not go away
- Significant nausea or repeated vomiting
- Unusual behavior, increased confusion, restlessness, or agitation
- Drowsiness or inability to wake up
- Blurry Vision: eyes aren't tracking properly
- Slurred speech, weakness, numbness, or decreased coordination
- Convulsions or seizures (shaking or twitching)
- Loss of consciousness (passing out)
- Vomiting or nausea





## TBI Resources

### **BRAIN INJURY ASSOCIATION OF AMERICA**

Provides information on essential resources, tips and tools. Many helpful links.



### **BRAIN TRAUMA FOUNDATION**

Information and resources for persons with brain injury.



### **TRAUMATIC BRAIN INJURY SURVIVAL GUIDE:    [www.tbiguide.com](http://www.tbiguide.com)**

This is an online book about TBI, available free or for a small donation.

### **BRAINLINE**

BrainLine is a national multimedia project offering authoritative information and support to anyone whose life has been affected by brain injury or PTSD: people with brain injuries, their family and friends



### **TRAUMATIC BRAIN INJURY- NEURO SKILLS**

Resource and information on brain injury rehab. How-to manuals are available for purchase. There are some good articles that are available to download.



### **CARING BRIDGE**

CaringBridge is your free online tool for sharing health updates. It is an easy and ad-free way to communicate health news to family and friends—all in one place.



### **TRAUMATIC BRAIN INJURY MODEL SYSTEM**

The University of Alabama at Birmingham Traumatic Brain Injury Model System (UAB-TBIMS) maintains this Information Network as a resource to promote health, and quality of life for people with TBI's, their families, and TBI-related professionals. There are educational materials, fact sheets, tip sheets for wheelchair positioning, pressure relief, lifts, and many more.



