

# TRAUMATIC BRAIN INJURY (TBI)

A RESOURCE FROM THE





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This resource guide was developed by the Brain Injury Association of Rhode Island (BIARI) to help survivors of traumatic brain injury (TBI), and their families understand and navigate the challenges they will face.

Important information is provided about the medical and neurological conditions facing TBI survivors. Guidance on overcoming insurance

barriers and addressing legal ramifications is also included.

This publication was made possible through the generous support of Marasco & Nesselbush, LLP, a Rhode Island-based, personal injury law firm and trusted BIARI partner that has provided compassionate legal support for TBI survivors for more than two decades.





### **ABOUT THE**



Did you know that 10,000 Rhode Islanders will suffer some level of brain injury each year? Sports concussions, trauma caused by falls or auto accidents, assaults and military service can all lead to serious brain injuries.

For a number of years, Marasco & Nesselbush has been pleased to support the fine work of the Brain Injury Association of Rhode Island (BIARI), the only statewide organization dedicated specifically to providing emotional support, guidance, and education to those who are suddenly faced with the effects of brain injury. Marasco & Nesselbush wishes to make our clients aware of the many resources that BIARI can offer people affected by brain injuries.

BIARI seeks to increase public awareness of traumatic brain injury and its consequences. BIARI advocates for appropriate rehabilitation, services and support for survivors of brain injury, their families and natural supports.

Through its Neuro-Resource Facilitation Program, BIARI actively collaborates with state and private entities to educate survivors, family members and professionals on all aspects of brain injury prevention, treatment and support needs. It offers a resource center, professional referrals and other services to survivors of brain injuries and their families / natural supports. For more information, please visit www.BIARI.org or call 401.228.3319.



# WHAT IS A TRAUMATIC BRAIN INJURY?

A traumatic brain injury (TBI) is an injury to the brain that disrupts its normal function. Traumatic brain injuries can be classified as mild, moderate, or severe, depending on the extent of the trauma and location. Different treatments can help repair physical, cognitive and emotional trauma, reduce side effects, and limit the risk of complications.



At its core, a TBI involves damage to the brain that impairs its normal function. Typically, a traumatic brain injury is the result of a sudden bump, blow, or jolt to the head.

While some brain injuries are minor and may resolve on their own, severe TBIs require immediate medical care or surgery to reduce the risk of complications, additional trauma, or even death.

Ongoing treatment and therapy can help brain injury survivors manage symptoms and improve their quality of life. It's crucial to seek proper medical attention and support to ensure the best possible recovery and well-being. Remember, you're not alone in this journey.

# SIGNS AND SYMPTOMS OF A TRAUMATIC BRAIN INJURY

Are you experiencing changes in any of these characteristics?



### PHYSICAL SYMPTOMS:

Have headaches frequently?

Feeling fatigued more than before?

Have trouble sleeping?

Feel weakness on one side?

Have trouble balancing?

Have a loss of smell and taste?

# VISION AND HEARING CHALLENGES:

More sensitive to noise?

Feeling dizzy?

More sensitive to light?

Have trouble hearing out of one ear?

Hear constant ringing?

Have trouble judging distances or height?

Have trouble with peripheral vision?



Find it hard to concentrate?

Have trouble starting activities?

Can't see a task through to completion?

Find it hard to plan ahead?

Have trouble learning new information?

Have trouble recalling information?

Have trouble problem solving?

Find it hard to adjust to change?

# COMMUNICATION CHALLENGES:

Find it hard to organize thoughts?

Find it hard to verbally speak clearly?

Forget words frequently?

Find it tough to use a telephone?

Have a hard time using a computer?

Find it harder to understand written information?



# CHALLENGES WITH EVERYDAY TASKS AND SOCIAL INTERACTIONS:

Find it hard to talk to friends?

Have a tough time fitting in with friends?

Find it hard to know what is expected in social situations?

Find it tough to wake up and get out of bed?

Find it harder to plan daily tasks and complete chores?

Forget to set your alarm clock?

Have a hard time planning daily appointments?

Find it hard to shop for food?

### **EMOTIONAL CHALLENGES:**

Have a tough time regulating your emotions?

Feel sad for an extended period?

Often feel angry?

Often feel lost and depressed?

Find it hard to tell others how you feel?





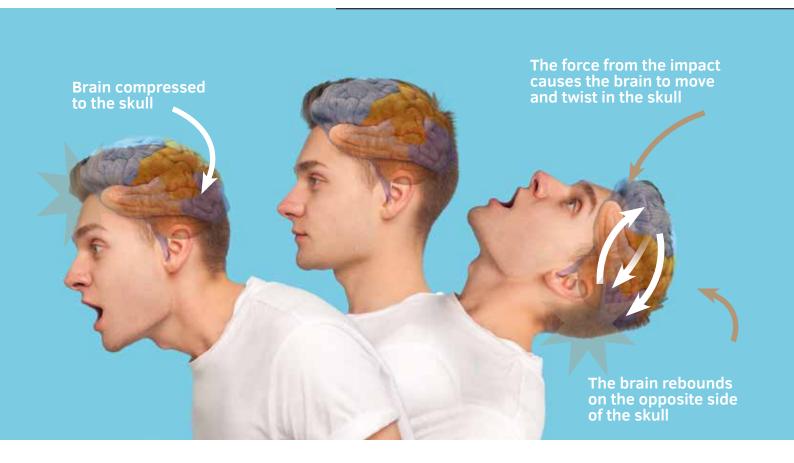
# HOW TRAUMATIC BRAIN INJURIES OCCUR

Common causes of brain injuries after a single impact event include a fall, a motor vehicle collision, or a sports-related incident.

There are two classifications of a traumatic brain injury (TBI):

 Traumatic Impact or Contact Injury: Head struck by or against a hard surface or object

Traumatic Inertial Non-Contact Injury: Brain moves or rotates within the cranium due to a rapid acceleration and deceleration of the head (also known as Hyperextension and Hyperflexion of the skull).



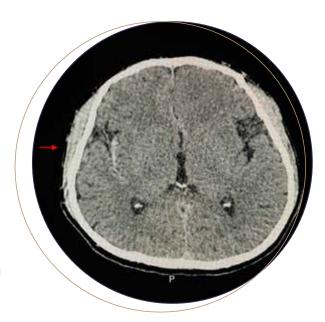


Note: In a motor vehicle collision, your frontal lobe is commonly injured in single event impact activity due to hitting a stationary object such as a steering wheel or airbag or even from the ricochet action of your head and neck when jolted from behind.

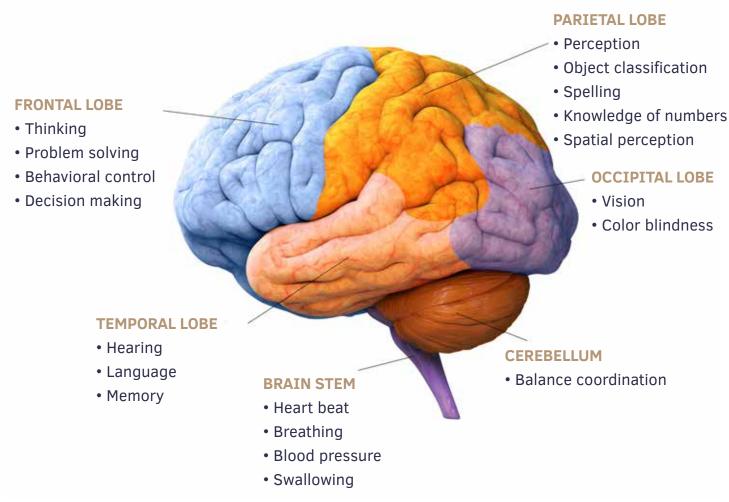
# NORMAL BRAIN FUNCTION

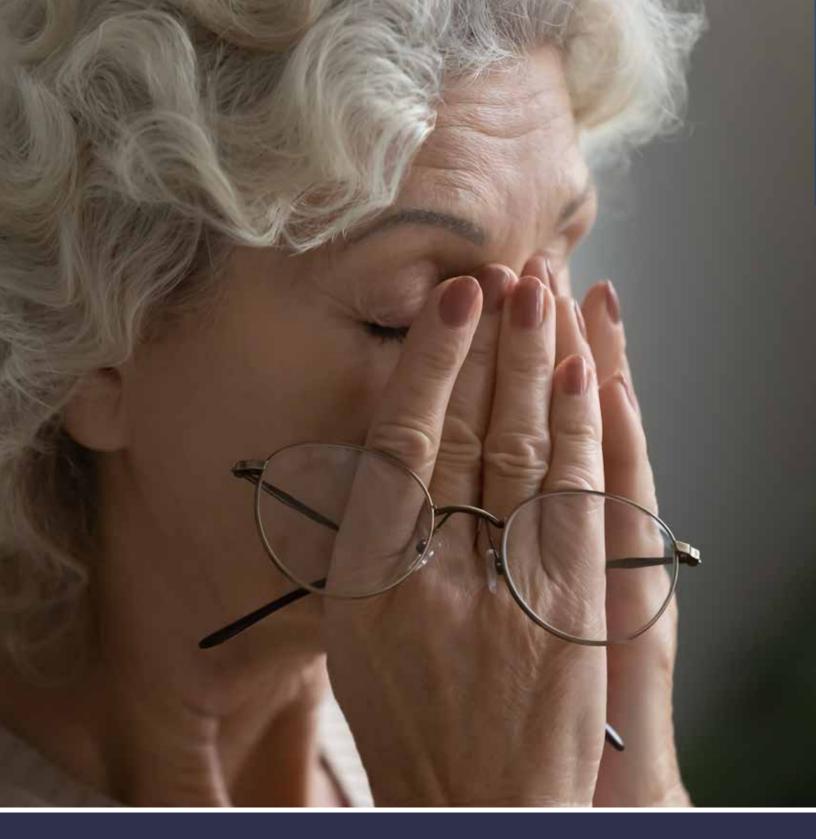
The cerebrum is the largest part of your brain. The surface of the cerebrum is beige and has crevices, called sulci. It is separated into two hemispheres, the right and left.

Each hemisphere has a set of four lobes. Each lobe (frontal, parietal, temporal, and occipital) has a certain location and is associated with a set of functions.



### **BRAIN LOBES**





# Understanding the Short and Long Term Impacts of a TBI

The impact of a brain injury on your life can seem overwhelming. Between both physical and emotional changes, there are many things one could expect after experiencing a brain injury.

# TYPES OF FRONTAL LOBE DAMAGE





Difficulty performing sequencing tasks



Poor organization and planning



Difficulties with reasoning, problem solving, and judgment



Decrease in motivation



Poor impulse control



Drastic changes in personality or behavior



# **SHORT TERM CONSEQUENCES**

### **NEGATIVE EMOTIONS**

Sadness, anger, and fear are often seen as negative emotions that can have destructive effects. However, it's important to recognize that these emotions also hold valuable energy and perspective. Harnessing them properly can not only help us survive after injury but also thrive. Working with a qualified professional can help TBI survivors more effectively manage their anger, sadness and fear.



### Anger

Anger can be a powerful source of energy. It's a common emotion experienced after a brain injury, and it can be channeled into determined action and advocating for your rights and recovery.



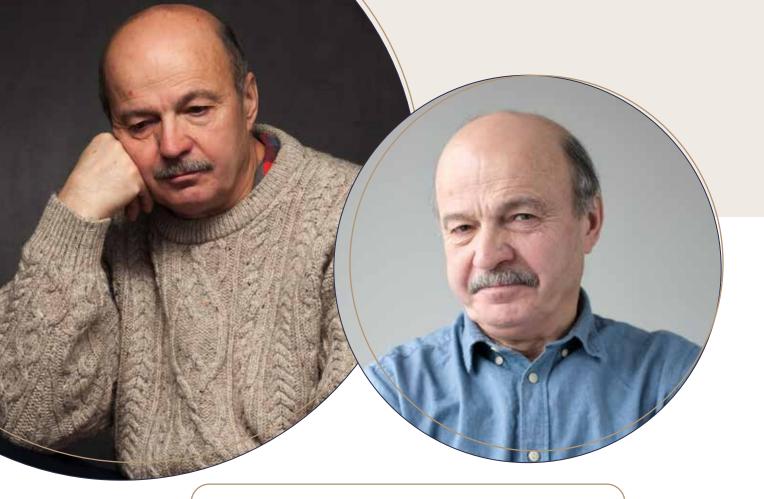
### Sadness

Sadness is a common feeling experienced by both individuals and members of their support system. It's natural to withdraw during tough times, but it's important to remember that seeking support from others is crucial including assistance from a mental health professional.



### Fear

Fear, which often stems from our expectation of pain and loss, can make situations appear worse than they actually are. However, fear can also push us to seek answers, gather information, and establish connections. Knowledge is empowering and can help us overcome fear.



### **POSITIVE EMOTIONS**

Two positive emotions that can greatly aid in brain injury recovery are joy and love.



### Joy

Joy is a state of openness, relaxation, and happiness. It provides a much-needed respite from sadness and worry. Celebrating milestones and finding joy in smaller aspects of the recovery journey can make it easier to navigate the challenges along the way.



### Love

Experiencing love during tough times can be a catalyst for healing, both emotionally and physically, after a brain injury. Feeling accepted and cherished, even when our own feelings may be conflicting, is incredibly powerful during the recovery process. It's important to receive love and learn to love ourselves, even though it may be challenging at times.



# **SENSORY OVERLOAD**

One important function of the brain is to filter incoming information from every part of the body. Damage to the brain can mean that sometimes this filter function is reduced or removed, and the brain no longer has clear ideas on what to pay attention to.





### SOUND

- Music and announcements while shopping and in other public venues.
- Groups of people talking or shouting.
- Sounds of the city (traffic, sirens, trains, etc.).
- At times, one's own voice can be difficult to tolerate.



### SIGHT

- Busy, multicolored venues.
- Classrooms with lots of display and decoration.
- Art galleries, museums, and other sightseeing events.
- Bright/flashing lights.
- Computer use.



### SMFII

- Scents/perfumes.
- Household and hardware chemical substances, cleaning supplies, glues, paints, etc.
- Food markets, new smells.
- Strong smells, good or bad.



### MOVEMENT

- Being bumped or moved in a crowd. Crowded areas.
- Tipping, rocking boat rides, amusement rides.

## **NEURO-FATIGUE**

In the early days after a brain injury, a survivor is likely to find that they will tire easily after any activity, even chatting with friends or watching television, but particularly after tasks that require concentration or physical effort. In addition, stimulation to the senses, audio, visual, and other stimulation may also lead to neuro-fatique.

Neuro-fatigue is one of the most debilitating consequences of a brain injury, as it influences everything a person does, both mentally and physically.

Neuro-fatigue can encompass

two different areas: Physical and Psychological.

Traumatic brain injuries (TBIs) can have a wide range of long term effects, from mild to debilitating. These injuries may lead to various physical symptoms that may not be immediately apparent. It's important to note that the severity of a TBI can change over time, and what may initially seem minor could turn out to be more severe.

TBIs can profoundly impact numerous aspects of a person's life for long periods of time, affecting balance, mobility, coordination, muscle strength, tone, and control. They can also disrupt the body's senses and give rise to conditions such as fatigue, seizures, spasticity, and difficulties with swallowing and bladder/bowel function. Headaches are common, with some being constant while others come and go. In more serious cases, TBIs can result in seizures, paralysis, and complete loss of

motor skills.





### **PHYSICAL**

"I'm tired, I need to rest. I am dragging today."

- Can come from muscle weakness.
- The body needs to work harder to do things than before TBI (TRAUMATIC BRAIN INJURY).
- Worse in the evening, better after a good night's sleep.
- Can lessen as survivor gets stronger, more active, and back into a routine.



### **PSYCHOLOGICAL**

"I just can't get motivated to do anything. I just don't want to do anything."

- Associated with depression, anxiety, etc.
- It gets worse with stress.
- Sleep may not help.
- Worse in the morning.





# **NAVIGATING THE ROAD TO RECOVERY**

Neuro-Resource facilitation is a partnership program provided by BIARI (Brain Injury Association of Rhode Island) that assists individuals in receiving information that will enable them to make informed choices for services and support to meet their individual needs. The Neuro-Resource Navigator helps with accessing and coordinating services including rehabilitation, medical, neurological, mental health/counseling, employment/vocational training, transportation, and applications for housing, medical benefits, and financial supports.





- Have a diagnosis of Traumatic Brain Injury or Acquired Brain Injury.
- Be expected to benefit from the services.
- Have a family member, guardian, or natural support to assist you in the process.
- Have goals or objectives that you need assistance with.



Neuro-Resource Navigator

# ROLE AND RESPONSIBILITIES

The Brain Injury Association of Rhode Island (BIARI) is the only statewide organization in Rhode Island serving individuals with traumatic and acquired brain injuries and their families/natural supports. Historically, BIARI has provided information and referrals to individuals who contacted the BIARI Resource Center. Over time, it became increasingly evident that more intensive support was needed to help TBI survivors transition through each stage of recovery from onset of injury through return to community and long-term function. This realization prompted BIARI to establish the Neuro-Resource Navigator and has hired a dedicated team member to serve as the Neuro-Resource Navigator.

The Neuro-Resource Navigator provides support, assistance, resources, and education to individuals, their families, and the professionals working with them. This includes providing individualized problem-solving, brainstorming and assistance with accessing and coordinating services such as rehabilitation, medical, neurological, mental health/counseling,

employment/vocational training, transportation, and applications for housing, medical benefits, and financial support. Providing individualized assistance to navigate the system yields positive outcomes, including a lower rate of readmission to the hospital and less reliance on the system over the long term. Ultimately, the Neuro-Resource Navigator educates, strengthens, and empowers individuals and their families to navigate their day-to-

day endeavors, resulting in improved self-determination, enhanced quality of life, and improved overall function.

Since initiating the Neuro-Resource Navigator position, there has been a significant increase in referrals to BIARI, resulting in the expansion of the number of individuals who benefit from the support of the Neuro-Resource Navigator. This has been and will continue to be accomplished through a multi-pronged approach. The Neuro-Resource Navigator is available to be at each inpatient rehabilitation unit in RI. While at the in-patient unit(s), the Neuro-Resource Navigator meets with the client and their family/natural support, participates in discharge planning meetings, and coordinates with discharge planners. Follow-up phone calls to check on each



client's status take place and the individual will continue to work with a navigator as long as necessary in order to address any issue before it impacts progress and function.

In addition to having a presence early in an individual's recovery and during their inpatient stay, each individual/family/natural support is given a tote bag with information regarding BIARI and the support that the association offers. Tote bags are different colors for different populations making it easy for doctors and discharge planners to identify that the materials/information in the bag is for adult clients, pediatric clients or for individuals diagnosed with concussion. The Neuro-Resource Navigator will continue to expand on this awareness program by delivering the tote bags to primary care providers, subacute nursing facilities, emergency departments, neurologists offices, and neuropsychologists' offices throughout the State.

The Neuro-Resource Navigator will continue to collect data regarding trends, gaps, and

barriers. This information will allow BIARI to collaborate with the Governor's Permanent Advisory Commission on Traumatic Brain Injury to advocate and legislate for programs and services to address the needs of this vulnerable population.

Referrals to BIARI will also be obtained from the TBI registry. The Neuro-Resource Navigator will be available to connect with the individuals in the hospitals who have been identified to manage the registry. A discussion regarding BIARI's Neuro-Resource Navigator playing a larger role in this process would be welcomed.

The Neuro-Resource Navigator position will allow BIARI to build relationships with community providers. Relationships will yield partnerships and contribute to achieving the long-term goal of diversifying BIARI funding, an outcome that can help sustain the program and enable the hiring of additional navigators.

For further information about the resources offered by the Brain Injury Association of Rhode Island, please visit www.BIARI.org.



# LEGAL, FINANCIAL AND INSURANCE IMPLICATIONS OF TRAUMATIC BRAIN INJURY

At Marasco & Nesselbush, we take immense pride in our well-deserved reputation for excellence in handling complex cases involving traumatic brain injuries. This reputation is the foundation of our valued partnership with the Brain Injury Association of Rhode Island, whose clients have depended on our firm for more than two decades.

Our reputation for handling traumatic brain injury cases has also led to numerous referrals from other law firms that recognize our expertise in successfully resolving cases involving concussions, severe brain trauma, and life-altering injuries.

The combination of our expertise in TBI cases and the compassion we show our clients help ease their burden at one of the most challenging times they'll ever face.

We are proud to further the Brain Injury Association of Rhode Island's vital mission of providing valued support and resources to TBI survivors and their families. To that end, we're pleased to share the following information about the legal, financial and insurance implications of traumatic brain injuries.

Joseph P. Marasco Donna M. Nesselbush

For more information please visit M-N-LAW.com.





If you or someone you know has suffered a traumatic brain injury, we're here to help. Let us guide you through your case and fight for the justice and compensation you deserve.

# WHAT WILL INSURANCE COVER?

Most people receive health insurance through their employer, and the coverage a person receives is contingent on their selected plan, pre-existing conditions, deductibles, and other factors. There are some items, however, which can be expected to be covered by insurance, no matter what kind of coverage you have.

### **EMERGENCY ROOM CARE**

Under the Affordable Care Act, health insurance plans are required to cover emergency services. They also cannot charge higher copays or coinsurance for going to an





out-of-network emergency room. Following an accident, a trip to the E.R. will be covered under insurance, including all testing and treatment performed while in the care of emergency services.

Many times, traumatic brain injuries do not present with symptoms that could be deemed an emergency, which may delay examination and treatment. In those cases, a person may consider visiting an urgent care center, which would be covered under insurance, as well.

### **SURGERY**

If a surgical procedure is deemed medically necessary, insurance will typically cover a major portion of the costs of surgery. For example, if a brain bleed develops following an accident, the repair of that injury will be medically necessary to save the injured person's life or prevent life-long impairment. Elective, experimental, or cosmetic surgeries are not typically covered under insurance, so if the injury requires surgery that falls under one of those categories, a patient may need to pay for that out of pocket or file appeals to convince their insurance provider to pay.



### TREATMENT AND THERAPY

Oftentimes, TBIs cause lasting injuries that need extended treatment – physical, speech, occupational, mental health, and other types of therapy. However, these therapies have more stringent restrictions on the frequency and provider who can perform the treatment.

Note: With an ongoing long-term treatment plan and therapy to heal from a traumatic brain injury, it is important to speak with medical teams regarding a clear treatment plan. There is no standard treatment plan for a TBI, and every plan must be customized. Treatment plans may include a combination of significant rest and slowly returning to normal activities, physical therapy, cognitive behavior therapy, speech therapy, psychological counseling, vocational therapy,

or occupational therapy. These treatments may involve brain injury specialists including Physiatrists, Neurosurgeons, Neuropsychologists, Speech and Language Therapists, Physical Therapists, Rehabilitation Nurses, and Occupational Therapists.

The details of the individual treatment plan must be discussed with the insurance company to determine the exact coverage. Some treatments are considered a specialty and may have a higher out-of-pocket cost than other medical options.

# LONG-TERM CARE AND THE COST OF RECOVERY

TBIs may be debilitating injuries, and there are times when the injured party needs long-term care from a nursing home or other in-patient





or in-home provider. Understandably, the cost of these facilities or providers can be expensive. Long-term care coverage varies from plan to plan. Some plans cover the room and board for the person's stay, while others do not. Some cover medical treatments and testing, while, for others, additional expenses will be incurred.

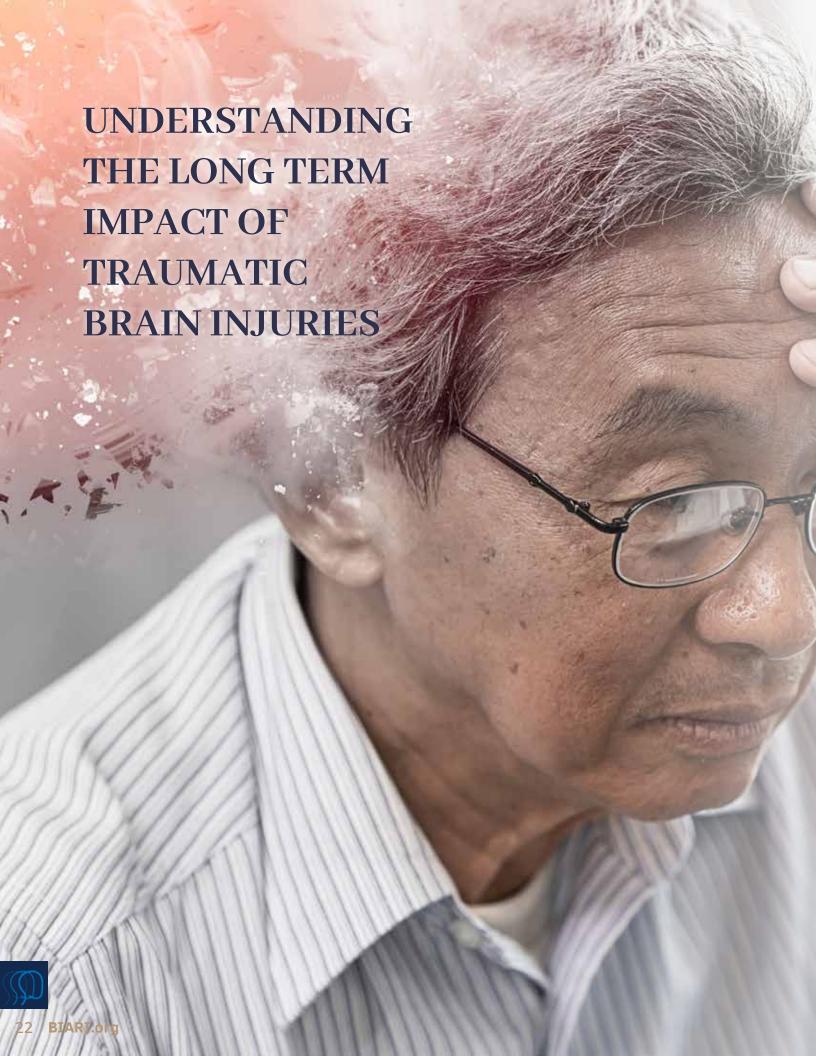
Some insurance providers, like Medicare and Medicaid, allow a per diem allowance for expenses from the facility. This means, for example, if a patient's room and board and daily treatments cost \$185 per day and the per diem amount equals \$170 per day, the patient

would have to pay \$15 per day out of pocket.

Private insurance providers often operate using a similar system – they operate with a per diem amount or a percentage of the cost.

To help offset these costs, a person could purchase long-term care insurance, a plan created specifically to cover nursing home or home health services. Like typical insurance, these plans vary, and premiums are largely customized. They will be based on age, gender, health conditions at the time of application, benefits, and expected length of stay.





It's crucial to remember that the initial severity of a TBI doesn't always indicate how severe the long term consequences may be. Signs and symptoms can appear immediately, within 24 hours, or even days or weeks or months after the injury. Sometimes, these physical symptoms are subtle, and a person may not initially connect them to the injury.

Given the wide range of TBI symptoms, addressing the physical manifestations can be complex and should involve a clinical team that includes a physician, and other medical experts as needed. Treatment plans will vary based on the severity of a TBI and may include a combination of significant rest and slowly returning to normal activities along with physical therapy, cognitive behavioral therapy and speech and language therapy. Additional support such as psychological counseling, vocational therapy, and occupational therapy may also be required.

In cases of more severe symptoms such as seizures or incapacitation, standard treatments may not alleviate the TBI symptoms, necessitating surgery in some cases.

The chronic illness and pain that often accompany TBIs can be exacerbated

by depression and anxiety, making access to appropriate support a key component of a person's recovery plan. Long-term care, either in a home or a medical facility, may also be required to help someone recover from a severe TBI.

The cost of long-term care can be very high, so TBI survivors should work with an experienced TBI attorney to ensure that responsible parties are held accountable for these expenses.





# A FIRM FOCUSING ON COMPLEX BRAIN INJURY CASES

At Marasco & Nesselbush, we take immense pride in our well-deserved reputation for excellence in handling complex cases involving traumatic brain injuries. We genuinely care about our clients and are deeply committed to fighting for their rights with compassion, conviction, and unwavering dedication.

For over 25 years, Marasco & Nesselbush has been dedicated to helping individuals whose lives have been forever changed by traumatic brain injuries. We have successfully resolved numerous cases involving concussions, severe brain trauma, and life-altering injuries. Our unwavering commitment to our clients ensures that they receive the highest level of medical care and fair compensation for their suffering.

# EXAMPLES OF FINANCIAL SETTLEMENTS SECURED BY MARASCO & NESSELBUSH FOR TBI SURVIVORS AND FAMILIES OF TBI VICTIMS

We obtained a recovery of

\$4,500,000

for a client who suffered a traumatic brain injury in a car accident.

After holding a hospital accountable for a wrongful death caused by an undiagnosed brain injury, we secured

\$1,500,000 for a grieving family.

A family whose son tragically passed away due to a brain injury sustained in a high-speed car crash was awarded

\$1,400,000.

On behalf of a young woman who endured a traumatic brain injury as a passenger in a recklessly operated vehicle, we recovered

\$1,250,000.

A brain injury survivor who was struck by a vehicle while walking received a pre-trial award of

\$1,025,000.

The family of a youth who suffered a traumatic brain injury after being hit by a drunk driver was granted a

\$1,000,000 award.

We achieved

\$1,000,000

for a child who sustained a traumatic brain injury after falling from a second-floor window due to the landlord's negligence.



### **CAN MAKE A DIFFERENCE:**

Our team of compassionate attorneys, with a combined experience of over three hundred years, is devoted to advocating for individuals who have experienced life-altering injuries. We possess the medical knowledge and understanding required to navigate the complexities of proving the long-term impact that traumatic brain injuries and other serious injuries have on our clients and their loved ones.

With the support of our seventy person team of legal professionals, we provide the necessary resources to guide our clients through even the most challenging cases. Our track record speaks for itself, with over \$100 million recovered for our clients in complex serious injury cases.

At Marasco & Nesselbush, we are driven by our genuine care for our clients and their well-being. We are here to provide compassionate support, and secure the justice and compensation they deserve.





### AN ACTIVE GLOSSARY OF TERMS FOR CAREGIVERS AND SURVIVORS

Anosmia: Loss of sense of smell.

Apraxia: Inability to carry out a complex or skilled movement; caused by brain injury, not due to paralysis, sensory changes, or deficiencies in understanding. A motor speech disorder that makes it hard to speak.

Ataxia: A problem of muscles coordination not due to apraxia, weakness, rigidity, spasticity, or sensory loss.

Brain Scan: An imaging technique in which a radioactive liquid is injected into the blood stream so that pictures of the brain can reveal tumors, blood clots, hemorrhages, or abnormal anatomy.

Cerebrospinal Fluid: The liquid which fills the ventricles of the brain and surrounds the brain and spinal cord.

Closed Head Injury: Trauma to the head that does not penetrate or fracture the skull, but damages the brain.

**Cognition:** The conscious process of the mind by which we are aware of thoughts and perceptions, including all aspects of perceiving, thinking, and remembering.

**Cognitive Behavioral Therapists:** use various methods of therapy to treat intellectual and emotional disorders that may help a person change attitudes, perceptions, and patterns of thinking. Additionally, they assist with developing cognitive strategies and mental techniques to compensate for neurological deficits, i.e., using color codes on a schedule board to remember daily appointments.

**Computerized Tomography (CT Scan): A series** of computerized X-rays of the brain at various



levels to reveal its structure. This procedure shows them more obvious changes such as a hematoma.

Diplopia: Double vision; the perception of two images of a single object.

Glasgow Coma Scale: A standardized system for assessing the degree of impairment of consciousness in the critically ill and identifying the seriousness of the injury and its relationship to the outcome. The system involves three determinants: Eye opening, verbal response, and motor response - all of which are evaluated independently according to a numerical value that indicates the level of consciousness and degree of dysfunction.

Hemiparesis: Weakness of one side of the body.

Hemiplegia: Paralysis of one side of the body as a result of injury to neurons carrying signals to muscles from the motor area of the brain.

Magnetic Resonance Imaging (MRI): A diagnostic procedure of the brain's soft tissue. MRI can provide a more detailed picture that the CT scan.

Neurologist: A physician who specializes in the nervous system and its disorders.

Neuro-Ophthalmologist: A physician who specializes in the treatment of diseases and injuries of the eye and the eye's nervous system.

Neuropsychologist: A PhD-trained psychologist who tests thinking, memory, judgment, emotions, behavior, and personality. This information can be used to help guide treatment and determine the amount of supervision that an individual needs.

Occupational Therapist: A therapist who evaluates the patient's ability to perform tasks such as getting dressed, bathing, homemaking, and activities that require memory and organization. They

provide treatment or equipment needed for safe independent living.

Physiatrist: Physical Medicine and Rehabilitation (PM&R) physicians, also known as physiatrists, treat a wide variety of medical conditions affecting the brain spinal cord nerves, bones, joints, ligaments, muscles, and tendons.

Physical Therapist: A therapist who evaluates and treats weaknesses in the patients' strength, flexibility, balance, rolling, sitting, standing, and walking. Treatment many include exercises of instruction in the use of equipment such as walkers, canes, or wheelchairs.

Rancho Los Amigos Scale: The Ranchos Los Amigos scale was developed at the Rancho Los Amigos Hospital in California by the Head Injury Treatment team. This scale is useful to therapists and families to help understand the behavior and progression of the head injury survivor as they go through rehabilitation. These levels are applicable in the first weeks or months following the injury and are not intended to predict improvement over the long term. The scale ranges from Level I (No Response) to Level VIII (Purposeful and Appropriate Response).

Sensory Integration: Integration of two or more sensory processes in a way which enhances the adaptiveness of the brain.

Sensory Stimulation: Arousing the brain through any of the senses.

Shunt: A procedure of removing excessive fluid in the brain. A surgically placed tube connecting from the ventricle deposits fluids into the abdominal cavity, heart, or large veins on the neck.

**Speech Therapist:** A therapists who tests and treats speech deficits, language deficits, cognitive and executive function deficits, and problems with swallowing.



# **NOTES**



# **NOTES**







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