

# What is Traumatic Brain Injury (TBI)

and can I recover from it?

## WHAT IS THE DEFINITION OF TRAUMATIC BRAIN INJURY?

In medical terms, a Traumatic Brain Injury is a “nondegenerative, noncongenital insult to the brain from an external mechanical force, possibly leading to permanent or temporary impairment of cognitive, physical, and psychosocial functions.” (*Medscape, Dr. Segun Toyin Dawodu, JD, MD, MS, MBA, LLM*).

More simply put, TBI is a blow or jolt to the head, or a penetrating injury, that disrupts the function of your brain, either temporarily or permanently. TBI is not hereditary, congenital or degenerative.

“Brain injury” is often used synonymously with “head injury,” but this is not the correct use of the term because head injuries may or may not be associated with neurologic deficits; whereas TBI always is.

## HOW MANY PEOPLE HAVE TRAUMATIC BRAIN INJURY?

Unfortunately, TBI is a prevalent injury: According to the CDC, approximately 1.5 million people in the U.S. suffer from a traumatic brain injury each year, and currently more than 5.3 million people are living with disabilities caused by TBI.

## WHAT ARE THE CAUSES OF TRAUMATIC BRAIN INJURY?

The top causes of TBI are: falls (47%), car accidents or struck by car accidents (29%), and assault, such as with a firearm (9%).

Doctors may speak about the cause of your TBI using words like: open head injury (injuries from bullet wounds and other penetrating objects), closed head injury (a result of a fall or car crash where nothing penetrated your brain, but you sustained significant head trauma), deceleration injury (where your brain is shaken inside your skull), stroke, tumors, and infections - these are the “mechanisms” that caused your brain injury.

## WHAT IS THE IMPACT OF TBI ON DAILY LIFE?

The brain is the “control center” for all of our human activity including thinking, sensing, judgment and emotions, as well as breathing and moving. Therefore injuries to your brain can have a significant impact on daily functioning.

The effects of Traumatic Brain Injury are divided into three categories:

- **Physical Impacts** – Depending on what part of the brain was injured, TBI can have varying degrees of impact on mobility and can cause spasticity (increased muscle tone that interferes with normal movement), hemiparesis or hemiplegia (weakness or paralysis impacting one side of the body more than another), ataxia (uncontrolled tremors), sensory impairment, fatigue and difficulties with speech.
- **Cognitive (Thinking) Impacts** – Depending on what part of the brain was injured, TBI can cause problems with attention & focus, memory, language (for example, aphasia or organizing your thoughts and ideas), impairment in visual perceptual skills, initiative-taking, problem-solving, and reduced perception and empathy.
- **Emotional / Behavioral Impacts** – Finally, TBI can take a toll on emotional and behavioral capacity. Common changes seen in those with brain injury include: loss of inhibition, impulsiveness, irritability and/or aggression, obsession, apathy, and egocentricity.

## CAN I RECOVER FROM TRAUMATIC BRAIN INJURY ?

The short answer is “yes.” The longer answer follows. The fastest improvement happens in about the first six months after injury, although rate of improvement varies from person to person. During this time, survivors of brain injury will likely show many improvements. There is further improvement beyond six months after injury, but this varies by person.

The good news is that improvements can still occur even years after injury. In fact, based on information of people with moderate to severe TBI who received acute medical care and inpatient rehabilitation services at a TBI Model System, two years post-injury:

- Most people continue to show decreases in disability.
- 93% of people are living in a private residence.
- 34% are living with their spouse or significant other; 29% are living with their parents. [Spaulding-Harvard Traumatic Brain Injury Model System, Model Systems Knowledge Translation Center (MSKTC), 2010]

## WHAT IS THE TREATMENT NEEDED TO RECOVER FROM TBI?

After a TBI, you may receive inpatient or outpatient treatment. For some, the initial treatment you'll receive immediately after injury is to stabilize your system at a hospital or other acute care facility. Trauma staff may monitor vital functions, respond to potential life-threatening changes and coordinate care with other hospital personnel, depending on what's needed. Others may receive treatment from a medical team on an outpatient basis where the physician will coordinate care and refer to rehabilitation professionals as needed.

Rehabilitation is an integral part of the recovery process where treatment helps restore the functions of daily life. Some will receive treatment at an inpatient care facility. The goals of this stage of care are to prevent secondary complications, restore lost functional abilities through physical, speech, and occupational therapy, and provide advice to families as to what changes may be needed once you go home.

Once back at home, you may receive home health therapy or visit an outpatient clinic for regular appointments, where you'll set goals for your recovery and continue physical, occupational and speech therapy to achieve those goals. Mobile therapy apps like Constant Therapy may be used to provide customized rehabilitation programs to address **cognitive issues** like memory, attention, and problem-solving, and **speech and language issues** like reading, writing, word retrieval, and auditory comprehension.

Once in-clinic therapy stops, you can continue your therapy on your own with iPad and tablet-based apps like Constant Therapy. Studies show the more you practice therapy like this, the more you'll recover lost brain function.

## ADDITIONAL RESOURCES FOR LEARNING ABOUT BRAIN INJURY

- The Centers for Disease Control (CDC)
- The Brain Injury Association of America
- Brainline

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Constant Therapy is an award-winning, customizable cognitive and speech therapy app, created for survivors of stroke, brain injury, aphasia, and other neurogenic disorders. Patients can use Constant Therapy in-clinic with a clinician, or at home for additional practice. Download Constant Therapy now.