



Overview

Traumatic Brain Injury

A traumatic brain injury (TBI) is a blow or jolt to the head or a penetrating head injury that temporarily or permanently disrupts the normal functioning of the brain.



Major Causes of Brain Injury During Deployment

- Blunt trauma to the head (motor vehicle crashes, firearms, falls).
- Acceleration/deceleration forces joggling the brain within the skull.
- Blast wave impacting the head and body. This is the most common cause of TBI in service members in the war zone.

Major Categories of Traumatic Brain Injury (TBI)

- **Penetrating head injury**—occurs from the impact of a bullet, knife or other sharp object that forces hair, skin, bone and fragments from the object into the brain.
- **Closed head injury**—occurs when the head receives a blow from an outside force, but the skull does not fracture. The brain may swell with no place to expand, causing an increase in intracranial pressure (the pressure within the skull).
- **Second Impact Syndrome (recurrent traumatic brain injury)**—occurs when a second TBI is sustained before the symptoms of the first brain injury have healed. The second injury is more likely to cause brain swelling and damage.

Levels of Severity

Mild

- Altered consciousness or loss of consciousness for less than 30 minutes.
- CT scan or other brain scan is normal.
- Amnesia lasting less than 24 hours.
- May be dazed or “see stars.”
- Short-term brain dysfunction but no permanent damage.



NOTE: Just because the neurological exam and scans are normal does not mean a TBI did not occur.



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Levels of Severity (cont.)

Moderate

- Loss of consciousness lasts from a few minutes to a few hours.
- Confusion lasts from days to weeks.
- Physical, mental, and/or behavioral impairments last for months or may be permanent.
- Individuals generally can make a good recovery with treatment or successfully learn to compensate for their deficits.

Severe

- Extended period of unconsciousness.
- Extended period of amnesia.
- Signs of injury in a CT scan or other brain scan are visible.
- Probable permanent changes in functioning.
- Severe brain injury occurs when a prolonged unconscious state or coma lasts days, weeks, or months.



Signs of Mild Traumatic Brain Injury (mTBI)

The signs of moderate and severe brain injury are generally obvious. However, many service members may have sustained **mild** traumatic brain injury without realizing it.

Physical signs

- Headaches.
- Dizziness.
- Blurred vision.
- Altered sense of smell or taste.
- Tinnitus (ringing in the ears).
- Balance problems.
- Fatigue.

Mental signs

- Attention or concentration problems.
- Memory problems.
- Feeling confused or overwhelmed.
- Slowed reaction to loud noise or flash of light.

Behavior signs

- Impulsivity.
- Aggressiveness.
- Changes in sexual interest or behavior.
- Depression.
- Irritability.
- Listlessness.
- Anxiety.



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Caring for Mild Traumatic Brain Injury: *Do's* and *Don'ts*

Do:

- Get rest and adequate sleep.
- Write things down in a notebook to help remember.
- Increase activity slowly.
- Develop a regular daily routine and try to structure activities.
- Do one thing at a time and avoid multitasking.
- Remove distractions from the environment.
- Reward yourself when you see progress.
- Consult with a trustworthy family member or friend before making decisions.

Don't:

- Risk another brain injury (by climbing on ladders, riding in vehicles with high acceleration rate, etc.).
- Use alcohol or illicit drugs.
- Use caffeine or “energy enhancers.”
- Use cough, cold, or allergy medicines containing pseudoephedrine.
- Take over-the-counter sleeping aids.
- Return too soon to high risk activities (skiing, contact sports, motorcycles, etc.).

Treatment

Approximately 85% of symptoms of mTBI will resolve on their own within three months. However, your doctor may prescribe medicine for some problems that may be bothersome in the meantime, such as headache, insomnia, dizziness, or depression. If problems persist past three months, it may be a sign that you've suffered multiple TBIs, are suffering from post-traumatic stress, or have suffered a more serious injury than originally indicated.

Talking to Your Doctor

After three months, if you are still having symptoms, you will need to let your doctor know. Be very specific about what is bothering you. Look over the list on the next page with a person who knows you well (a spouse, significant other, parent, or friend) and choose the problems that are giving you the most trouble (or that others notice most). Choose problems that have only surfaced since your head injury. For example, if you've always had difficulties getting organized, don't choose “Can't get organized” for this exercise.



If you are still having symptoms after three months, see your doctor.



Problem Worksheet

<i>Problem One: (Most troubling.)</i>	<i>Problem Two:</i>
<i>I am having trouble with:</i>	<i>I am having trouble with:</i>
<i>My goal for this problem is:</i>	<i>My goal for this problem is:</i>

- Frequent headaches.
- Unexplained pain.
- No attention to details.
- Won't take prescribed medicines.
- Lose things.
- Can't keep track of time.
- Impulsive behavior.
- Have panic attacks.
- Feel no emotions.
- Alienate friends.
- Feel stressed out all the time.
- Irritable.
- Sensitivity to light.
- Can't get organized.
- Uninterested in being with others.
- Act childish or silly.
- Forgetful.
- Thinking seems slow.
- Can't control emotions.
- Get frustrated easily.
- Too dependent on other people.
- Have problems with significant other.
- Get angry easily.
- Cry easily.
- Feel restless.
- Can't set priorities with daily tasks.
- Withdrawn from other people.
- Talk too much.
- Have trouble concentrating.
- Suspicious of others.
- Nervous and anxious.
- Can't stop worrying.
- Make inappropriate sexual remarks.
- Too blunt with others.
- Feel depressed.

Resources:

- Deployment Health Clinical Center Traumatic Brain Injury, <http://www.pdhealth.mil/TBI.asp#fs>
Information for Service Members, their families, and health care providers.
- *Living with Brain Injury* webpage of the Brain Injury Association of America, <http://www.biausa.org/living-with-brain-injury.htm>
Information about causes, symptoms and types of TBI.
- National Center for Injury Prevention and Control TBI, <http://www.cdc.gov/ncipc/tbi/TBI.htm>