

Traumatic Brain Injury (TBI)

What is traumatic brain injury?

Traumatic brain injury (TBI) typically results from some type of head trauma — when the head suddenly and violently hits an object or when an object pierces the skull and enters brain tissue.

Healthcare providers use terms to classify TBI such as “mild,” “mild-complicated,” “moderate,” and “severe.” Generally, the milder the injury, the quicker you can recover and the fewer lasting effects.

What is mild TBI?

Mild TBI is sometimes referred to as a “concussion” [kuhn-KUHSH-uh n]. With this type of injury, symptoms are often temporary. They can be minimal and last for only a few days or weeks, but in rare cases they last for months. Intermountain’s fact sheet, [Concussion](#), provides more detailed information on how to speed recovery.

A person with mild TBI may remain conscious or may experience a loss of consciousness at the time of injury. Other symptoms of mild TBI include:

- Headache
- Confusion
- Light-headedness or dizziness
- Blurred vision or tired eyes
- Ringing in the ears
- A bad taste in the mouth
- Fatigue or lethargy (feeling out of it)
- A change in sleep patterns
- Behavioral or mood changes
- Trouble with memory, concentration, attention, or thinking

What is moderate TBI?

Moderate TBI can be more serious. Immediately after a traumatic injury, patients are less alert, more lethargic, and less in touch, requiring longer hospitalization and care. Once stable, some will need additional rehabilitation outside the hospital at an outpatient clinic.

A TBI can effect a patient’s ability to return to work or school or to care for dependents. A team of therapists and physicians will work to help set up a plan for you and provide the support needed for a successful recovery.

Those with moderate TBI may have symptoms that appear similar to someone who has had a mild TBI but may also have:

- A headache that gets worse or does not go away
- Repeated vomiting or nausea
- Convulsions or seizures
- An inability to awaken from sleep
- Dilated pupils in 1 or both eyes
- Slurred speech
- Weakness or numbness in the arms or legs
- Loss of coordination
- Increased confusion, restlessness, or agitation

What is severe TBI?

Severe TBI is very serious, usually requiring being in a hospital intensive care unit. Recovery is longer, often taking months or years. Although some people have permanent brain injury, most improve to a degree with intensive inpatient rehabilitation. Because the brain may need time to heal before rehabilitation can begin, you might go home or to a long-term care facility for a while. The rehabilitation team will monitor your responses, level of awareness, and ability to be in an intensive inpatient rehabilitation program.

How is TBI diagnosed and treated?

Anyone with signs of moderate or severe TBI should receive medical attention as soon as possible. Doctors will order imaging tests to help determine the severity of the brain injury and whether or not damage could be permanent. You may have skull and neck X-rays, CT scans, or MRIs to check for bone fractures or spinal problems.

Because little can be done to reverse the initial brain damage caused by trauma, healthcare providers try to stabilize someone with TBI. They will focus on preventing further injury by ensuring that your brain is getting enough oxygen and blood flow and that your blood pressure is controlled.

Rehabilitation for patients with moderate-to-severe head injuries will be individually tailored to their needs and include physical, occupational, and speech and language therapy as well as help from a physical medicine doctor called a **physiatrist** [fi-ZAHY-uh-trist]. If needed, there will also be mental health and social support as part of the rehabilitation plan.

About half of patients with severe TBI need surgery to remove or repair:

- **Hematomas** [hee-ma-TOH-muhs], which are collections of blood that form as a result of trauma
- **Contusions** [kuhn-TOO-zuhns], which are bruised brain tissues

Sometimes, a **pressure monitor** will be placed in the brain to follow and treat any pressure inside the skull from swelling, bleeding, or fluid.

Where can I learn more?

- Centers for Disease Control (CDC)—[cdc.gov/traumaticbraininjury](https://www.cdc.gov/traumaticbraininjury)
- Brain Injury Association of American, Inc.—[biausa.org](https://www.biausa.org)
- Brain Injury Resource Center—[headinjury.com](https://www.headinjury.com)
- Brain Trauma Foundation—[braintrauma.org](https://www.braintrauma.org)

What kind of disability can TBI cause?

How much disability results from a TBI depends on how severe the injury is, where the injury is located, and the age and general health of the person injured. Common disabilities include problems with:

- Thinking, memory, and reasoning
- Sight, hearing, touch, taste, and smell
- Expressing oneself and understanding others
- Depression, anxiety, personality changes, aggression, acting out, and acting socially inappropriate

More serious disabilities result from more severe TBI and include:

- **Stupor**—when someone is unresponsive but can be aroused briefly by something like a sharp pain
- **Coma**—when someone is totally unconscious
- **Vegetative state**—when someone is unconscious but may appear to be “awake” and have involuntary movement



When should I call 911 or go to an emergency room?

Seek emergency help if you have any of these symptoms:

- People can't wake you up
- Fainting or unusual sleepiness
- Confusion or strange behavior
- Can't remember new events
- Slurred speech, not making sense
- Seizure
- Sudden, severe nausea and vomiting
- Blurry or double vision
- Worsening head or neck pain
- Inability to control bladder or bowel function
- Weakness, numbness, or tingling in arms or legs
- Bleeding or draining of fluid from nose or ears

Family or friends may notice these signs before you do. They should take you to the emergency department.

Intermountain Healthcare complies with applicable federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, or sex. Se proveen servicios de interpretación gratis. Hable con un empleado para solicitarlo. 我們將根據您的需求提供免費的口譯服務。請找尋工作人員協助

© 2017 Intermountain Healthcare. All rights reserved. The content presented here is for your information only. It is not a substitute for professional medical advice, and it should not be used to diagnose or treat a health problem or disease. Please consult your healthcare provider if you have any questions or concerns. More health information is available at [intermountainhealthcare.org](https://www.intermountainhealthcare.org). Patient and Provider Publications FS512-03/17 (Last reviewed -03/17) Also available in Spanish.