



Traumatic Brain Injury

Awareness and Prevention Fact Sheet

A traumatic brain injury (TBI) can happen anytime, anywhere, and to anyone.

Each year TBI contributes to a substantial number of deaths and cases of permanent disability. This fact sheet was developed to accompany the Defense and Veterans Brain Injury Center's (DVBIC) brain injury awareness and prevention video, understanding Traumatic Brain Injury.* It provides: (a) a general overview of TBI, (b) prevention tips to help you and your family reduce the risk of TBI, and (c) a list of organizations that can provide you with additional resources and information on TBI.

What is a TBI?

A traumatic brain injury (TBI) is caused by a blow or jolt to the head or a penetrating head injury that disrupts the normal function of the brain. Not all blows or jolts to the head result in a TBI. The severity of a TBI may range from "mild" (a brief change in mental status or consciousness) to "severe" (an extended period of unconsciousness or amnesia after the injury).

What causes TBI?

The leading causes of TBI are:

- Bullets, fragments, blasts
- Falls
- Motor vehicle-traffic crashes
- Assaults

Blasts are a leading cause of TBI for active military personnel in war zones.

Who is at highest risk for TBI?

Everyone is at risk of having a TBI. However, recent data shows that:

- Males are about twice as likely as females to sustain a TBI.¹
- The two age groups at highest risk for TBI are 0 to 4 year olds and 15 to 19 year olds.¹
- Certain military duties (for example, paratrooper) increase the risk of sustaining a TBI.²

What are the long-term consequences of TBI?

TBI can cause a wide range of changes affecting thinking, sensation, language, or emotions such as:

- Thinking – memory and reasoning
- Sensation – touch, taste, and smell
- Language – communication, expression, and understanding
- Emotion – depression, anxiety, personality changes, aggression, acting out, and social inappropriateness

TBI can also cause epilepsy and increase the risk for conditions (such as Alzheimer's disease, Parkinson's disease, and other brain disorders) that become more prevalent with age.³

How can TBI be prevented?

There are many ways to reduce the risk of a traumatic brain injury (TBI), including:

1. Wearing a seat belt every time you drive or ride in a motor vehicle.
2. Buckling your child in the car using a child safety seat, booster seat, or seat belt (according to the child's height, weight, and age).
 - Children should start using a booster seat when they outgrow their child safety seats (usually when they weigh about 40 pounds). They should continue to ride in a booster seat until the lap/shoulder belts in the car fit properly, typically when they are 4'9" tall.⁴
3. Wearing a helmet and making sure your children wear helmets that are fitted and maintained properly when:
 - Riding a bike, motorcycle, snowmobile, scooter, or all-terrain vehicle;
 - Playing a contact sport, such as football, ice hockey, lacrosse, or boxing;
 - Using in-line skates or riding a skateboard;
 - Batting and running bases in baseball or softball;
 - Riding a horse; or
 - Skiing, sledding, or snowboarding.
4. Ensuring that during athletic games and practices that you and/or your children:
 - Use the right protective equipment (equipment needs to be fitted and maintained properly in order to provide the expected protection);
 - Follow the rules for safety and the rules of the sport;
 - Practice good sportsmanship; and
 - Do not return to play with a known or suspected traumatic brain injury or concussion until you have been evaluated by an appropriate health care professional and given permission to return to play.

For more information about TBI contact:

• **Defense and Veterans Brain Injury Center (DVBIC)**

The Defense and Veterans Brain Injury Center (DVBIC) develops and provides advanced TBI-specific evaluation, treatment and follow-up care for military personnel, their dependents and veterans with brain injury. DVBIC conducts clinical research that defines optimal evaluation and treatment for individuals with TBI. It also develops and delivers effective educational materials for the prevention and treatment of TBI and management of its long-term effects. Call DVBIC toll-free at 1-800-870-9244, or visit DVBIC on the web at DVBIC.org.

• **National Center for Injury Prevention and Control (CDC)**

The National Center for Injury Prevention and Control (CDC) works to reduce morbidity, disability, mortality, and costs associated with injuries. CDC has a wide variety of resources and materials about TBI and other types of injuries. Call CDC toll-free at 1-800-CDC-INFO (1-800-232-4636), or visit CDC's Injury Center on the web at cdc.gov/injury.

References

1. Langlois JA, Rutland-Brown W, Thomas KE. Traumatic brain injury in the United States: Emergency department visits, hospitalizations, and deaths. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2006.
2. Ivins BJ, Schwab K, Warden D, Harvey S, Hoilien M, Powell J, et al. Traumatic brain injury in U.S. Army paratroopers: Prevalence and character. *Journal of Trauma Injury, Infection and Critical Care* 2003;55(4):617–21.
3. National Institute of Neurological Disorders and Stroke. Traumatic brain injury: Hope through research. Bethesda (MD): National Institutes of Health; 2002 Feb. NIH Publication No.: 02-158.
4. Centers for Disease Control and Prevention. Warning on interaction between air bags and rear-facing child restraints. *Morbidity and Mortality Weekly Report MMWR* 1993;42(No.14):20–2.

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