

Traumatic Brain Injury Fact Sheet

Traumatic brain injury (TBI) is a major cause of death and disability worldwide and, according to the Centers for Disease Control (CDC), is a “serious public health problem.”¹

TBI is defined as a result of a bump, blow or jolt to the head or a penetrating head injury that disrupts the normal function of the brain. This trauma can lead to temporary or permanent impairments of cognitive, physical and psychosocial functions, and an associated diminished or altered state of consciousness.¹

Basic Facts and Figures

- The CDC estimates that more than 1.7 million Americans sustain TBI each year. Of these, approximately 1.4 million are treated and released from emergency centers, 275,000 are hospitalized, 80,000 suffer long-term disability and 52,000 die²
- TBI is a contributing factor to nearly one-third (30.5 percent) of all injury-related deaths in the U.S.²
- Between 2002-2006, U.S. TBI rates were highest in children aged 0 to 4 years, in adolescents aged 15 to 19 years, and in adults aged 65 years and older²
- TBI rates are higher for males than females across every age group in the U.S.²
- Car crashes and traffic-related incidents are the leading cause of TBI-related deaths. Rates are highest for adults aged 20 to 24 years²
- 5.3 million Americans - approximately 2 percent of the population - are living with a disability from a TBI³
- The total direct and indirect cost of TBI exceeds more than \$76.5 billion per year in the U.S.⁴
- Incidence of TBI in other industrialized countries is comparable to incidence in the U.S., with estimates ranging from 150 to 300+ incidents per 100,000 people^{5[6]}

A Traumatic Brain Injury Can Happen to Anyone, Anywhere, Anytime

- TBI does not discriminate; it can happen to anyone, including car accident victims, athletes, domestic abuse victims, children, and soldiers
- Leading causes of U.S. TBI include accidental falls (35.2 percent), car crashes, and traffic accidents (17.3 percent), accidental collision with an object (16.5 percent), and assault (10 percent)²

Living with Traumatic Brain Injury

- Unfortunately, little can be done to reverse the initial brain damage caused by a TBI. Once a TBI occurs, medical treatment focuses on preventing further injury and promoting rehabilitation⁷

¹ Traumatic Brain Injury Center. (n.d.). Centers for Disease Control and Prevention. Retrieved May 1, 2012, from <http://www.cdc.gov/traumaticbraininjury/>

² Faul M, Xu L, Wald MM & Coronado VG. (2010). Traumatic Brain Injury in the United States: Emergency Department Visits, Hospitalizations and Deaths 2002–2006. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control

³ Traumatic Brain Injury in the United States: A Report to Congress. (n.d.). Centers for Disease Control and Prevention. Retrieved May 1, 2012, from http://www.cdc.gov/ncipc/pub-res/tbi_congress/01_executive_summary.htm

⁴ Traumatic Brain Injury Statistics. Centers for Disease Control and Prevention. Retrieved May 1, 2012, from <http://www.cdc.gov/TraumaticBrainInjury/statistics.html>

⁵ Granacher, R. (2003). Traumatic brain injury: methods for clinical and forensic neuropsychiatric assessment. Boca Raton, FL: CRC Press.

⁶ Tagliaferri F, Compagnone C, Korsic M, Servadei F, and Kraus J. (2006). A systematic review of brain injury epidemiology in Europe. *Acta Neurochir.* 148: 255-268.

- TBI can have a debilitating impact on a person's life, and may require that they receive daily living assistance
- Long-term effects of TBI include functional changes that affect thinking, sensation, language and/or emotion, as well as physical changes that affect overall mobility and motor skills²
- TBI can cause epilepsy and increase the risk for Alzheimer's, Parkinson's, and other brain disorders⁸

Traumatic Brain Injury Research and Treatment

- Despite more than 75 clinical trials in the past 20 years, there is no approved treatment for TBI.⁹ All current TBI therapy is supportive rather than restorative¹⁰
- There are currently 13 treatments in clinical development for the potential treatment of TBI
- Areas of research for potential TBI treatments include progesterone, calcium ion influx, stem cells, hypothermia, and magnesium sulfate⁹
- The National Institutes of Health is conducting research to better understand TBI and the biological mechanisms underlying damage to the brain⁷
- Previous preclinical and clinical trials suggest that progesterone has neuroprotective properties that may improve outcomes for people with TBI^{[11][12][13]}
- A global Phase III clinical trial known as [SyNAPSe](#) is studying BHR-100, a novel intravenous progesterone infusion, with the intent of bringing the first-ever TBI treatment to market
- The U.S. Food and Drug Administration granted BHR-100 orphan drug status and placed the drug on a Fast Track Development Program designed to accelerate its potential approval

⁷ Traumatic Brain Injury Information Page. (n.d.). National Institute of Neurological Disorders and Stroke (NINDS). Retrieved May 1, 2012, from http://www.ninds.nih.gov/disorders/tbi/tbi.htm#Is_there_any_treatment

⁸ Traumatic Brain Injury: Hope Through Research. (n.d.). National Institute of Neurological Disorders and Stroke (NINDS). Retrieved May 1, 2012, from http://www.ninds.nih.gov/disorders/tbi/detail_tbi.htm

⁹ Datamonitor (April 2010). Stakeholder Opinions: Traumatic Brain Injury

¹⁰ Park, E. et al., (2008). Traumatic brain injury: Can the consequences be stopped? CMAJ, 178(9), 1163-1170

¹¹ Stein DG, et al. (2008). Progesterone exerts neuroprotective effects after brain injury. Brain Res Rev 57: 386-397,

¹² Wright DW, et al. (2007). ProTECT: a randomized clinical trial of progesterone for acute traumatic brain injury. Ann Emerg Med 49: 391-402, 402.e1-2.

¹³ Xiao, G, et.al. (2008). Improved outcomes from the administration of progesterone for patients with acute severe traumatic brain injury: a randomized controlled trial. Critical Care 12: R61.