



NATIONAL SAFETY COUNCIL

Position/Policy Statement

Traumatic Brain Injury

The National Safety Council (NSC) is concerned about traumatic brain injuries. The Council supports the need for better surveillance data that will provide metrics to understand the scope and severity of TBI to the American population and provide insight for more effective measures for prevention and treatment to understand, eliminate and mitigate short and long term effects of traumatic brain injury.

A traumatic brain injury (TBI) is caused by a bump, 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, and the severity of TBIs can range from mild to severe. Mild TBIs result in brief changes in consciousness and include concussions. Severe TBIs are defined as extended periods of unconsciousness, permanent brain damage or memory loss after an injury and may result in death. It is important to note that, although mild TBIs are defined as “mild,” this does not mean they are insignificant. They are the most common form of TBIs, and researchers are now recognizing all TBIs as a disease process because of the potential for long term disability and chronic side effects. (Masel and DeWitt, 2010).

The Centers for Disease Control and Prevention (CDC) has developed the [National Concussion Surveillance System](#) to track traumatic brain injuries (TBIs), and concussions, and disseminate that information to support targeted prevention efforts. In early 2017, CDC will launch a one-year pilot of the system and the Council supports forthcoming efforts to promote continuation of this surveillance system as well as the agency’s ability to take this system to national scale.

The Council supports screening strategies including the HEADS UP program from the CDC which provides tools for parents, youth sports coaches, school coaches and professionals and health providers to recognize, respond to, and minimize the risk of traumatic brain injuries. The National Safety Council also supports treatment and rehabilitation to minimize the debilitating effects of individuals suffering from a traumatic brain injury. Rehabilitation includes access to inpatient, outpatient and community services, both cognitive and physical.

Between 2001 and 2010, there was a 70% increase in TBI-related emergency department visits, 11% increase in hospitalization rates, and a 7% decrease in death rate. The increase in emergency department visits and hospitalization rates can be attributed to an increase in reporting due to awareness and public concern for head injuries and an increase in older adult

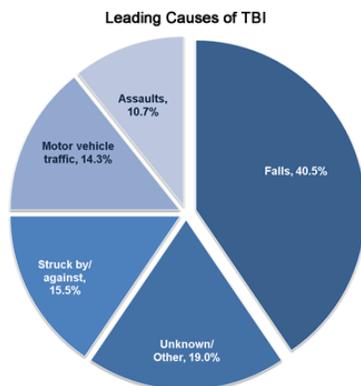
fall-related TBIs. Although the number of deaths of older adult falls related to TBI is increasing, the overall decrease in TBI-related death rate is attributed to the decrease in motor vehicle crash-related TBI deaths and a decrease in assault-related TBI deaths. In 2010, the Centers for Disease Control and Prevention (CDC) estimated that traumatic brain injuries accounted for approximately 2.5 million emergency department (ED) visits, hospitalizations, and deaths in the United States. Of these individuals, approximately 87% were treated in and released from EDs, 11% were hospitalized and discharged, and approximately 2% died.

TBI is also an issue that affects service members. Department of Defense data from 2000 through 2011 revealed that 4.2% of service members (235,046 of those who served in the Army, Air Force, Navy, and Marine Corps) were diagnosed with a TBI (CDC, NIH, DoD, and VA Leadership Panel, 2013). However, these numbers are an underestimate of the problem and do not include individuals who did not receive care, out-patient or office visits or those who received care in federal facilities (Faul, et. al, 2010).

In addition, a recent co-publication from CDC and Children’s Hospital of Philadelphia (CHOP) stated that over 80% of pediatric patients are being seen in primary care settings for their first concussion visit (Arbogast, et. al, 2016). Although ED visits for playground related TBIs has been increasing in recent years (U.S. Consumer Product Safety Commission, 2016), this finding from CDC and CHOP suggests TBI data may not be adequately captured through ED visits and stresses the importance of a comprehensive surveillance system to fully understand the burden of TBI.

Furthermore, research has shown that individuals 16 years and older with moderate to severe TBI in rehabilitation were twice as likely to die from an unintentional injury occurring post TBI compared to individuals in rehabilitation without TBI of similar age, sex and race (Harrison-Felix et al, 2015).

The leading causes of TBIs are falls, being struck by/struck by against an object (which includes recreational activities and sports) and motor vehicle crashes. Falls and motor vehicle crashes are leading causes of injury-related deaths among all age groups. In addition to falls being a leading cause of TBI, they disproportionately affect young children and older adults. According to the CDC, 55% of TBIs among children 0 to 14 years were caused by falls and 81% of TBIs in older adults (aged 65 and older) are caused by falls. Motor vehicle crashes were the leading cause of TBI-related death for children and young adults ages 5 to 24 years and the leading cause of TBI-related hospitalizations for people ages 15 to 44 years.



With regards to falls among older adults in particular, the Council supports screening and assessing for fall risk. To address this growing health and economic concern, CDC developed STEADI (Stop Elderly Accidents, Deaths and Injuries) for health care providers. STEADI materials can be used to assess, treat, and refer older adult patients based on their fall risk. Educational materials specifically designed for older adults and their friends and family are also included.

The National Safety Council can make a significant impact on long-term disability, hospitalizations and deaths from traumatic brain injuries by focusing on efforts to decrease the number of motor vehicle crashes, falls, and injuries sustained from struck by/struck against an object.

Prevention strategies the Council recommends include:

- environmental changes such as:¹
 - slip proof surfaces
 - improved lighting
 - indoor and outdoor handrails
 - arranging furniture to create clear pathways
 - avoiding clutter on the ground
 - keeping items regularly used within easy reach
- safer playgrounds which are built using soft materials under them (wood chips, sand), appropriate signage for safe use and guardrails to prevent falls
- proven effective falls prevention programs for older adults to improve strength and balance and reduce risk for falling;²
- healthcare provider use of STEADI materials which are based on clinical practice guidelines, to assess, treat, and refer older adult patients based on fall risk;
- motor vehicle safety practices including primary safety belt legislation requiring all passengers to wear safety belts, requiring children be properly restrained³ in child safety or booster seats, primary motorcycle helmet laws, graduated driver licensing and distracted driving laws and;
- use of personal protective equipment when engaging in recreational and sports activities including properly fitted and effective helmets.⁴

Organizations working on TBI

- American Academy of Pediatrics – <http://www.aap.org>
- Brain Injury Association of America – <http://www.biausa.org/>
- CDC National Center for Injury Prevention and Control (CDC): Division of Unintentional Injury Prevention - <https://www.cdc.gov/injury/>
- CDC: Heads Up - <http://www.cdc.gov/headsup/index.html>
- National Association of State and Head Injury Administrators – <http://www.nashia.org>
- National Council on Aging – <http://www.ncoa.org/>
- United States Brain Injury Alliance - <http://usbia.org/>

¹ The National Safety Council: Slip, Trip and Falls Prevention: <http://www.nsc.org/learn/safety-knowledge/Pages/safety-at-home-falls.aspx>

² The Center for Disease Control: Important Facts About Falls: <http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html>

³ The National Safety Council's position on proper child restraints during transportation can be found at: <http://www.nsc.org/NewsDocuments/2016/CPS%20policy.pdf>.

⁴ The National Safety Council encourages parents, coaches and sports administrators to utilize resources such as the STAR rating system for helmets and headgear offered by Virginia Tech, found at: www.vt.edu/helmet

Citations

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This position statement reflects the opinions of the National Safety Council but not necessarily those of each member organization.

Adopted by the National Safety Council, 2017