



# TRAUMATIC BRAIN INJURY (TBI)

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# 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. The severity of a TBI may range from “mild” (i.e., a brief change in mental status or consciousness) to “severe” (i.e., an extended period of unconsciousness or memory loss). Most TBIs are mild, and are commonly known as concussions.<sup>1</sup>

## HOW DOES THIS AFFECT THE UNITED STATES?

- Every year in the United States, approximately 53,000 people die and 284,000 people are hospitalized as a result of TBI.<sup>1</sup>
- TBI accounts for approximately 2 million Emergency Department (ED) visits every year.<sup>1</sup>
- Most TBI deaths result from car crashes (29%), suicide (29%) and falls (21%). Falls are the leading cause of TBI-related hospitalizations (40%) and ED visits (44%).<sup>2</sup>
- There is a long-term impact on individuals living with a TBI, including a reduced life expectancy of 9 years, compared to those who had not suffered from a TBI.<sup>3</sup>
- Multiple studies have documented the mental health impacts of TBI. In one study, among a cohort of patients hospitalized for TBI, 53 percent met criteria for Major Depressive Disorder (MDD) during the first year after TBI. Major depressive disorder was associated with history of TBI and was an independent predictor of poorer health-related quality of life.<sup>4</sup>
- A meta-analysis in 2010 revealed the prevalence of TBI among inmates in the criminal justice system. According to the study, the rate of TBI among inmates was 60 percent.<sup>5</sup>
- In 2010, TBI cost the United States \$142 billion in medical expenses and lost work. Of that amount, \$36 billion was related to TBI deaths.<sup>6</sup>

## HOW DOES THIS AFFECT MARYLAND?

- In 2013, approximately 43,600 Marylanders suffered a TBI.<sup>7</sup>
- In Maryland, in 2013, firearm-related injuries was the leading cause of injury among those who died where TBI was reported as a cause of death on the death certificate alone or in combination with other injuries or conditions. Firearms were related with 40 percent of deaths, 2 percent of hospitalizations, and 0.01 percent of ED visits.<sup>7</sup>
- The most common causes of TBI-related hospitalizations in Maryland are falls and motor vehicle crashes.<sup>7</sup>
- In 2013, TBI-related ED visits were highest in people aged 15 to 24 and deaths due to TBI were the highest among those aged 85 and older.<sup>7</sup>
- In 2010, the estimated annual cost of deaths due to TBI in Maryland was \$525 million (medical expenses and work loss).<sup>6</sup>

## HOW DO WE ADDRESS THIS PROBLEM

- From 2009-2014, all 50 states and DC passed laws to address TBI; most targeted youth sports-related concussions through Return to Play laws.<sup>8</sup>
- For TBI management, the American Academy of Neurology recommends immediate removal from play, an individual evaluation, and treatment tailored to the symptoms. Return to play is recommended only after a licensed health care professional with head injury experience clears the athlete.<sup>9</sup>

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- Implementation and evaluation of Return to Play laws is important. Information about how states can improve implementation of Return to Play and Return to School (Learn) is available from CDC.<sup>10,11,12</sup>
- TBI surveillance is needed. CDC recommends surveillance efforts including: out-patient clinics, urgent care facilities, and other non-hospital settings; and people living with a TBI-related disability.<sup>13</sup>
- Recognizing that motor vehicle crashes and falls are a major source of TBI, policies and programs to prevent them can also be effective in preventing TBI. Please see the sections of this guide related to those injury issues for additional information.

## ADDITIONAL RESOURCES

- Maryland's Behavioral Hygiene Administration (BHA) within the Department of Health and Mental Hygiene (DHMH) has been identified as Maryland's lead agency for TBI. <http://bha.dhmh.maryland.gov/Pages/Traumatic-Brain-Injury.aspx>
- The Brain Injury Association of Maryland acts as the voice of those affected by brain injury through advocacy, education, and research. <http://www.biamd.org/>
- Aging and Disability Resource Centers (ADRC), known locally as Maryland Access Point (MAP), were established as the single entry point for individuals seeking long term support services. Maryland's 20 local MAP sites provide individual, person centered counseling to consumers seeking information, referral and program support for long term services. [www.marylandaccesspoint.info](http://www.marylandaccesspoint.info)
- Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Unintentional Injury Prevention. <http://www.cdc.gov/traumaticbraininjury/>
- The National Institute of Neurological Disorders and Stroke (NINDS) supports TBI research through grants to major medical institutions across the country and conducts TBI research in its intramural laboratories and Clinical Center at the National Institutes of Health (NIH) in Bethesda, Maryland. <http://www.ninds.nih.gov/disorders/tbi/tbi.htm>

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