

Special Emphasis Report:

Traumatic Brain Injury

Understanding TBI

Traumatic brain injury (TBI) is a serious public health problem in the United States. A TBI is caused by a bump, blow, jolt, or penetration to the head that disrupts the normal function of the brain. Each year, traumatic brain injuries contribute to a substantial number of deaths and cases of permanent disability.

Impact and magnitude of TBI

During 2023, a TBI was the cause of 19,046 medical encounters or deaths in Wisconsin. Among these injuries there were 1,487 (25 per 100,000 population) deaths with TBI as a cause of death, another 4,262 (72 per 100,000) non-fatal hospitalizations with a TBI, and an additional 13,297 (225 per 100,000) treat and release emergency department visits with a TBI. In all instances, the TBI could be either the only injury or one of several injuries and/or medical conditions listed.

Causes of TBI

Cause of injury, as measured by rate per 100,000 people, varies across the three levels of severity. Firearms and accidental falls were the leading causes of TBI related deaths. Unintentional falls were the leading cause of TBI related non-fatal hospitalizations and TBI related emergency department visits (treated and released).

TBI by age and sex

The highest number of TBI-related deaths* were among males ages 75 to 84, as shown in Figure 3. Persons ages 75 to 84 accounted for the most TBI-related hospitalizations.** Persons ages 25 to 34 made the most TBI-related emergency department visits.**

*TBI was reported as a cause of death alone or in combination with other injuries or conditions

**TBI alone or in combination with other injuries or conditions

Figure 1: Percentage of TBI-related deaths, hospitalizations, and emergency department visits by cause in 2023

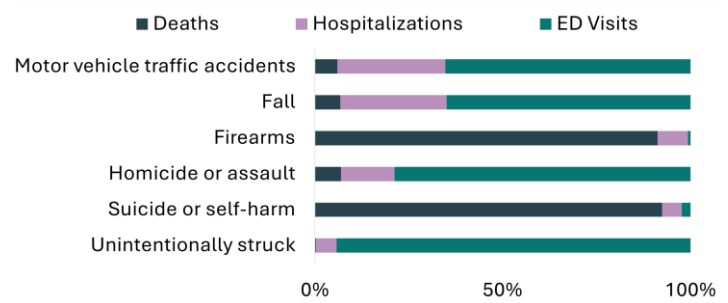


Figure 2: Causes of TBI-related deaths by age-adjusted rate per 100,000 in 2023

Cause	Count	Rate
Firearms	532	8.7
Unintentional fall	651	8.6
Suicide	462	7.4
Motor vehicle traffic accidents	176	2.9
Homicide	83	1.5
Unintentionally struck	10	*

*Count too low to calculate age-adjusted rate.

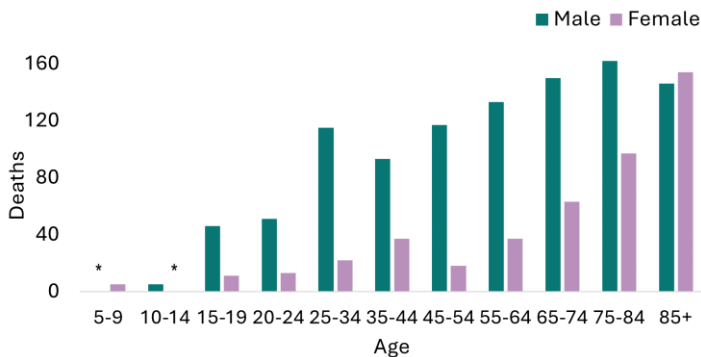
Combined counts in this figure are greater than total number of deaths because cause and intent are not mutually exclusive (for example the firearm death count includes deaths also counted in assault and suicide)

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Figure 3: TBI-related deaths by age and sex in 2023



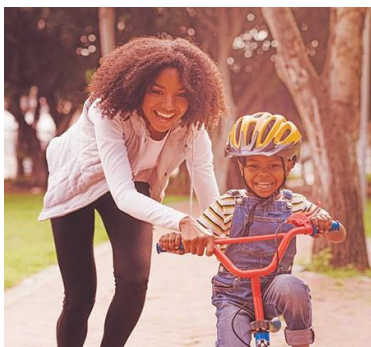
*Counts less than five are suppressed for confidentiality. Ages less than five are not displayed as all counts were less than five.

TBI hospitalization by region

Certain populations have greater TBI burden and may need special prevention measures. The highest age-adjusted TBI hospitalization rate per 100,000 residents was in the southeastern region of Wisconsin.

Region	Count	Hospitalization rate*
Southern	786	56.8
Southeastern	1,737	71.7
Northeastern	753	49.8
Western	577	60.4
Northern	408	62.6

*Rates are age-adjusted.



TBI prevention strategies

The National Center for Injury Prevention and Control (Injury Center) at CDC (Centers for Disease Control and Prevention) is committed to protecting people against preventable TBI by putting science into action.

To help older adults: make CDC's STEADI part of every medical practice.

STEADI (Stopping Elderly Accidents, Deaths, and Injuries) is a toolkit to help health care providers incorporate fall risk assessment and individualized fall interventions (for example, exercise, medication management, and Vitamin D supplementation) into their practice. [Learn more about CDC's STEADI toolkit.](#)

To help young athletes: get a HEADS UP on creating a culture of concussion safety in sports.

HEADS UP educational materials are designed to support individuals (such as coaches and health care providers) and organizations (such as schools and sports programs) with their concussion safety efforts. [Learn about CDC's HEADS UP materials.](#)

To help parents and teen drivers: "Parents Are the Key" to teen driver safety.

"Parents Are the Key" materials helps parents, pediatricians, and communities keep teen drivers safe on the road. "Parents Are the Key" includes evidence-based strategies and can be customized with an organization's logo. [Learn more about the "Parents are the Key" materials and resources.](#)

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TBI activities in Wisconsin

Brain Injury Association of Wisconsin

The Brain Injury Association of Wisconsin (BIAW) supports people living with a brain injury in the state. The organization offers support groups to build connections and reflect on common experiences between those with a brain injury and their loved ones. Support groups for both survivors and caregivers meet in-person and virtually across the state. In addition, BIAW offers brain injury survivors a space to tell their story. For example, BIAW has published two collections of poetry written by people living with a brain injury about their experiences. The BIAW also offers a variety of supportive resources for people with a new brain injury including information about TBI, additional spaces to find community, and a template log for survivors and caregivers to record the recovery journey.

The BIAW is also conducting a statewide needs assessment to identify met, under met, and unmet needs of individuals affected by TBI in Wisconsin. This assessment is part of an Administration on Community Living TBI state partnership grant. Qualitative interviews of individuals affected by TBI, conducted as part of the needs assessment, have revealed concerns including a need for education and training of providers, programming to address financial burdens, transportation, and protections for vulnerable adults with TBI. The next phase will be a survey that is distributed broadly throughout Wisconsin to reach as many residents with TBI as possible. Findings from these studies are intended to guide programming and potential legislation to support individuals with TBI in Wisconsin. Visit the [BIAW website](#) to view their resources and learn more about the organization.

Concussion laws in Wisconsin

Another cause of TBI, especially among student athletes, is sports and recreational activities. In Wisconsin, the law requires youth athletic organizations to provide education about concussion for youth, parents, and their coaches. In addition, coaches are required to immediately remove kids from play if the athlete displays signs of a concussion. Student athletes cannot return to play until they have permission from a medical provider. Read about [Wisconsin's student athlete concussion laws](#).

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Data Note: TBI causes are not mutually exclusive for hospitalizations and emergency department (ED) visits, and multiple causes may be indicated based on International Classification of Disease-10-Clinical Modification codes. Firearm rates include all intentions (unintentional, assault or homicide, and suicide or self-harm). Hospitalization and ED visit rates count medical encounters, not individual patients. Patients who were transferred, re-admitted, or had multiple in-patient or emergency department visits for TBI in 2023 would be counted more than once.