

# Sports and Recreation-related Traumatic Brain Injuries

Utah, 2013-2014 data



UTAH DEPARTMENT OF  
**HEALTH**  
Violence & Injury Prevention Program

## Nearly one in five (19.7%) of TBI hospitalizations in Utah were attributed to sports/recreation activities.



Traumatic brain injuries (TBIs) can have a dramatic impact on a person's ability to lead an active, fulfilling life. TBIs can affect an individual's ability to work, their short- and long-term memory, vision, sleep, mood, and movement. By understanding the causes of TBIs, we will be able to better prevent TBIs from occurring.

0-14  
Years

Among all Utahns, sports/recreation-related TBIs were the most common among those aged 0-14.



80% of sports/recreation-related TBIs occurred among Utah males.



Recreational activities (e.g., water sports, playground, trampoline, golf cart, jogging, etc.) attributed to 25.3% of sports/recreation-related TBI hospitalizations.



An estimated 80% of Utahns who were hospitalized for a skateboard, rollerblade, snow sport, or OHV/ATV-related TBI in 2013-2014 were NOT wearing a helmet at the time of their injury.



In 2014, sports/recreation-related TBI hospitalization charges in Utah in 2014 totaled an estimated \$4.7 million.



## TBI Prevalence in Utah

Every day in Utah, 60 people are treated and released from an emergency room due to a TBI. Another seven are hospitalized and one person dies each day from a TBI. **Figure 1** displays the number of TBIs in 2013 and 2014 by severity.



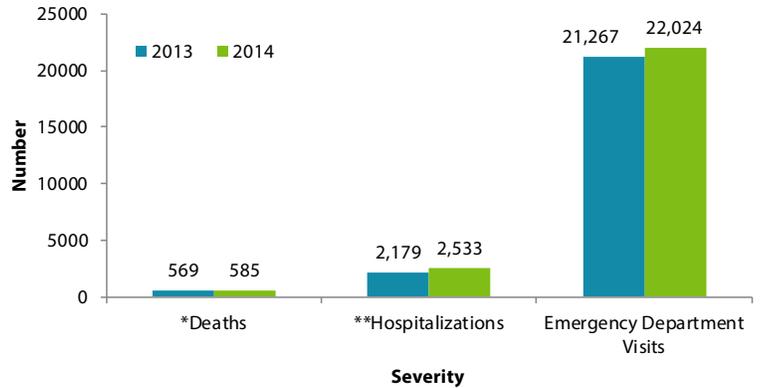
## TBI Causes

Of the 1,448 sampled TBI hospitalizations cases, 19.7% were attributed to sports/recreation-related causes. Sports/recreation-related TBIs include recreational activities (water sports, playground, trampoline, golf cart, jogging, etc.), bicycle crashes, snow sports (snowboarding, skiing, sledding, ice skating), horse and rodeo, off highway vehicle/all-terrain vehicle (OHV/ATV) crashes, skateboard/rollerblades/scooter, and team sports.

The causes of sports/recreation-related TBI hospitalizations and deaths in Utah during 2013-2014 were (**Figure 2**):

- **Recreational activities (25.3%)**
- **OHV/ATV crashes (20.7%)**
- **Bicycle crashes (16.8%)**
- **Horse/rodeo (10.5%)**
- **Skateboard/rollerblades/scooter (10.5%)**
- **Snow sports (9.1%)**
- **Team sports (7.0%)**

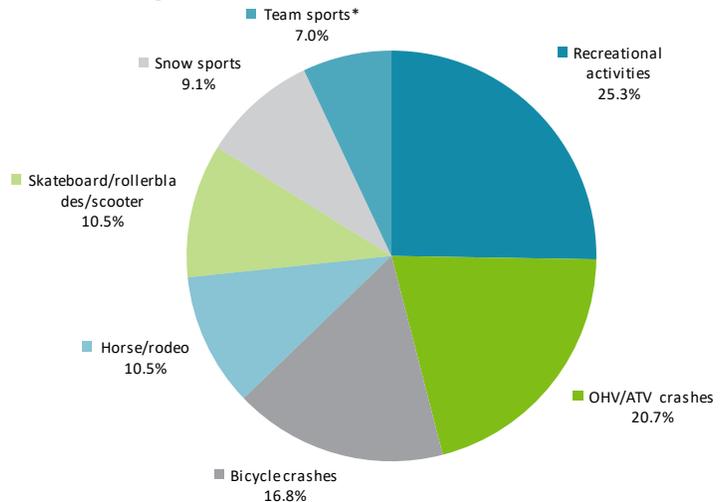
**Figure 1: Number of Traumatic Brain Injuries by Severity, Utah, 2013-2014**



\*Deaths include deaths with any mention of TBI, not just those with a TBI as the primary cause of death  
 \*\*Hospitalizations include those who died in the hospital



**Figure 2: Leading Causes of Sports/Recreation-related TBI Hospitalizations, Utah, 2013-2014 (n=285)**



\*Insufficient number of cases to meet UDOH standard for data reliability, interpret with caution

0-14  
Years

## Age and Sex

In 2013-2014, 80% of sports/recreation-related TBIs occurred among Utah males and occurred most common among those aged 15-24. Among all Utahns, sports/recreation-related TBIs were the most common among those aged 0-14 (**Figure 3**).

The age range and average age of Utahns who sustained a sports/recreation-related TBI in 2013 are listed in **Table 1**.



## Helmet Use

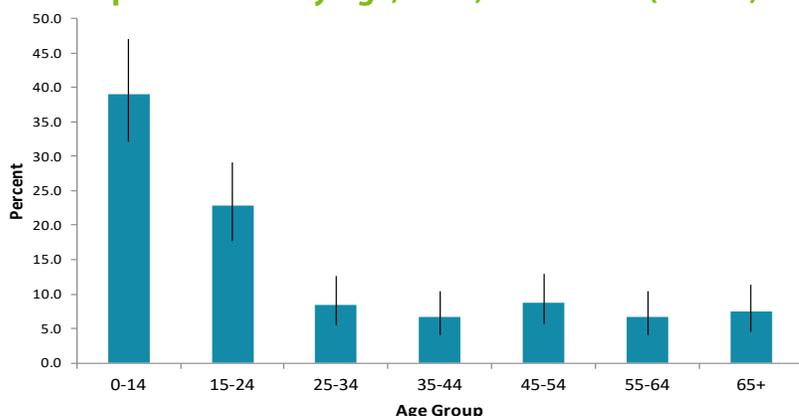
An estimated 80% of Utahns who were hospitalized for a skateboard, rollerblade, snowsport, or OHV/ATV-related TBIs in 2013-2014 were NOT wearing a helmet at the time of their injury.



## Cost

Among the 140 sampled cases, sports/recreation-related TBI hospitalization charges in Utah totaled an estimated \$4.7 million. In 2014, there were nine hospitalizations with total charges exceeding \$100,000. The maximum total charge for a sports/recreation-related TBI hospitalization was \$667,516. **Table 2** lists the median and mean hospitalization charges for 2014 by cause.

**Figure 3: Percent of All Sports/Recreation-related TBI Hospitalizations by Age, Utah, 2013-2014 (n=284)**



**Table 1: Age Range and Mean Age of Sports/Recreation-related Hospitalizations, Utah, 2014**

Cause of TBI	Number of TBIs	Age range (years)	Average age (years)
Recreational activities	34	0-91	13
OHV/ATV crashes	29	4-91	18
Horse/rodeo	19	3-70	36
Bicycle crashes	18	4-66	22
Skateboard/rollerblades/scooter	17	3-28	13
Snow sports	12	5-68	21
Team sports	10	10-60	18

**Table 2: Hospitalization Charges for Sports/Recreation-related TBIs, Utah, 2014**

Cause of TBI	Median Charges	Mean Charges
Horse/rodeo	\$26,684	\$34,729
OHV/ATV	\$19,807	\$63,820
Snow sports	\$15,083	\$26,007
Bicycle crashes	\$14,089	\$41,452
Recreational activities	\$13,715	\$22,642
Skateboard/rollerblades/scooter	\$13,221	\$13,364
Team sports	\$11,413	\$17,929

## Prevention Tips

- Wear a helmet when:
  - Riding an OHV/ATV, bicycle, skateboard, or scooter;
  - Playing a contact sport, such as football, ice hockey, or boxing;
  - Using inline skates or riding a skateboard;
  - Batting and running bases in baseball or softball;
  - Riding a horse; or
  - Skiing or snowboarding.
- Ask your league, school, or district about concussion policies. Utah law requires youth sports organizations to have a concussion policy.
- Teach and practice safe playing techniques. Follow all rules pertaining to your sport.
- Teach athletes it's not smart to play with a concussion. When an athlete has a concussion, the brain needs time to heal. Don't let your athlete return to play until a health care professional, experienced in evaluating for concussion, says they are symptom-free and it's OK to return to play.
- Replace damaged equipment promptly, especially helmets and other protective head gear. Some helmets require replacing after any impact, even if there are no visible signs of damage.

## Resources

- Brain Injury Association of Utah [www.biau.org](http://www.biau.org)
- CDC Traumatic Brain Injury [www.cdc.gov/TraumaticBrainInjury/index.html](http://www.cdc.gov/TraumaticBrainInjury/index.html)
- National Association of State Head Injury Administrators [www.nashia.org](http://www.nashia.org)
- TBI Fund [www.health.utah.gov/tbi](http://www.health.utah.gov/tbi)
- UDOH VIPP [www.health.utah.gov/vipp/topics/traumatic-brain-injury/](http://www.health.utah.gov/vipp/topics/traumatic-brain-injury/)

## TBI Database

The data presented in this fact sheet come from the Utah TBI Database. Since 1990, the Utah Department of Health has collected data on TBIs through review of hospital discharge data, death certificates, and hospital records. TBIs are included in the database when they result in hospitalization or death with one or more of the following: observed or self-reported unconsciousness or decreased level of consciousness; amnesia; skull fracture; changes in motor function, sensory function, reflexes, or speech; or seizures, hemorrhages, bruising, or other trauma to the brain.

### 2013-2014 TBI Sample

The information provided in this fact sheet was obtained through analysis of a sampled portion of the total TBI hospitalizations in Utah. The sampled cases for 2013-2014 numbered 1,448 (708 for 2013 and 740 for 2014). The sampled cases represent the total cases, allowing the information reported in this fact sheet to be extrapolated to the total cases.



If your life has been affected by traumatic brain injury, the Utah Department of Health wants to hear from you. Share your story with the Utah Health Story Bank at [www.health.utah.gov/bhp/sb/](http://www.health.utah.gov/bhp/sb/).



**Our Mission** is to provide trusted and comprehensive data and technical assistance related to violence and injury. This information helps promote partnerships and programs to prevent injuries and improve public health.