

Sports and Recreation-related Traumatic Brain Injuries in Utah, 2009

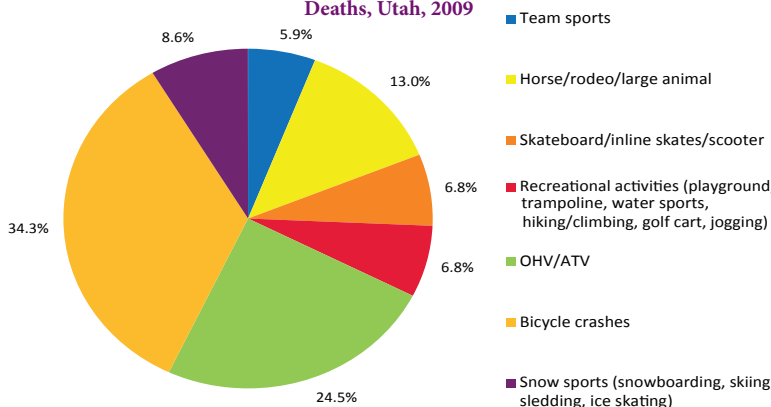
Introduction

In 2009, sports/recreation-related traumatic brain injuries (TBIs) resulted in the hospitalization or death of 440 Utahns.

Sports/recreation-related TBIs include: Off-highway vehicle/all-terrain vehicle (OHV/ATV) and bicycle crashes, team sports, snow sports, water sports, horse/rodeo, skateboard/inline skates/scooters, and other recreational activities. OHV/ATVs also include snowmobiles, dune buggies, dirt bikes, etc.

Traumatic brain injuries 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.

Figure 1: Leading Causes of Sports/Recreation-related TBI Hospitalizations and Deaths, Utah, 2009



Causes of TBI

The leading causes of sports/recreation-related TBI hospitalizations and deaths in Utah in 2009 were (Figure 1):

- Bicycle crashes (34.3%)
- OHV/ATV crashes (24.5%)
- Horse/rodeo/large animal (13.0%)

Concussions¹

Concussions are a type of TBI caused by a bump, blow, or jolt to the head. It's estimated that 75% of TBIs that occur nationally each year are concussions or other mild TBIs.²

In 2009, 6,445 Utahns were treated and released from the emergency department (ED) for a concussion. Of these, one-fourth (24.0%) were due to sports/recreation activities.

Half (49.5%) of all ED visits for sports/recreation-related concussions were among children ages 10-19. When age is looked at more closely, 29.1% of concussions from sports/recreation activities were among teens ages 15-19 and 20.4% were among children ages 10-14.

All concussions are serious. Even "getting your bell rung" can be serious.



Prevention Tips

- **Wear a helmet when:**
 - o Riding an OHV/ATV, bicycle, skateboard, or scooter;
 - o Playing a contact sport, such as football, ice hockey, or boxing;
 - o Using inline skates or riding a skateboard;
 - o Batting and running bases in baseball or softball;
 - o Riding a horse; or
 - o 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.

- **Make sure the surface on your child's playground is made of shock-absorbing material, such as hard-wood mulch or sand.**

Helmet Use

Helmets can and do save lives and prevent injury when worn properly. Of Utahns who suffered a sports/recreation-related TBI in 2009 and for which helmet use was known:

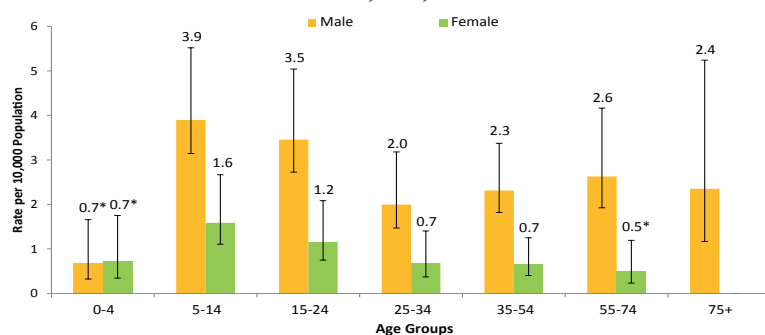
- 89.7% were not wearing a helmet while on a skateboard/inline skates/scooter;
- 57.1% were not wearing a helmet during snow sports; and
- 44.7% were not wearing a helmet while on an OHV/ATV.

Age and Sex

Sports/recreation-related TBI rates are higher for younger people.

In 2009, males had the highest rates of sports/recreation-related TBIs for all ages compared to females, except for age 0-4 (**Figure 2**).

Figure 2: Rates of Sports/Recreation-related TBI Hospitalizations and Deaths by Age and Sex, Utah, 2009



*Data must be interpreted with caution due to a small number of cases.

The age range and average age of Utahns who sustained a sports/recreation-related TBI in 2009 are listed in **Table 1** below.

Table 1: Age Range and Average Age of Utahns with a Sports/Recreation-related TBI, Utah, 2009

Cause of TBI	Number of known sports/recreation-related TBI hospitalizations	Age range (years)	Average age (years)
OHV/ATV	128	2-86	32
Bicycle	143	4-87	31
Team sports	23	0-74	22
Snow sports	36	5-60	27
Horse/rodeo/large animal	54	2-80	34
Skateboard/inline skates/scooter	29	6-41	19
Recreational activities	14	5-49	22

Geographic Location

The distribution of sports/recreation-related TBIs was similar to the overall population distribution of the state for all causes except horse/rodeo/large animal and OHV/ATV.

In 2009, rural/frontier counties were home to 24.7% of Utahns and 59.3% of TBIs caused by horse/rodeo/large animal and 39.1% of OHV/ATV crashes (**Figure 3**).

Cost

Sports/recreation-related TBI hospitalization charges in Utah totaled more than \$16 million in 2009. **Table 2** lists the median hospitalization charges by cause.

Table 2: Median Hospitalization Charges for Sports/Recreation-related TBIs, Utah, 2009

Cause of TBI	Hospitalization charges (median)
OHV/ATV	\$22,406
Bicycle	\$16,975
Skateboard/inline skates/scooter	\$15,376
Horse/rodeo/large animal	\$15,272
Snow sports (skiing, snowboarding, sledding, ice skating)	\$14,738
Recreational activities	\$13,920
Team sports	\$9,840

- Hospitalization charges for concussions due to sports/recreation totaled more than \$3.7 million in 2009.

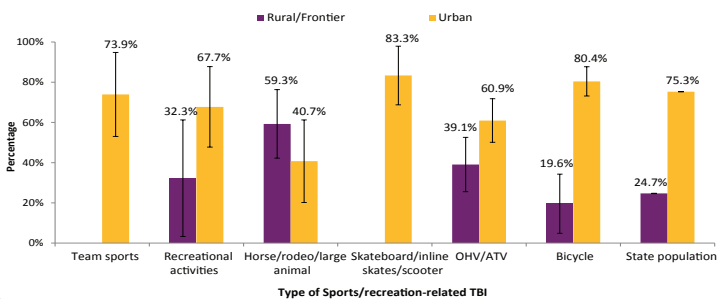
Laws

Team Sports: In 2011, the Utah State Legislature passed a law requiring amateur sports organizations (including schools) to adopt and enforce a concussion and head injury policy and to get written approval of the policy by parents/legal guardians before their child participates in sports.

A child who gets a head injury must be removed from play and may only return after written clearance from a qualified health care provider.

To learn more, visit <http://le.utah.gov/~2011/htmdoc/hbillhtm/HB0204S01.htm>.

Figure 3: Distribution of Sports/Recreation-related TBI Hospitalizations and Deaths Among Urban and Rural/Frontier Residents Compared to the State Population, Utah, 2009



OHV/ATVs: Utah law requires youth between the ages of eight and 15 to take an OHV Safety Education class approved by Utah State Parks and Recreation before operating OHVs/ATVs. It is illegal for any child under age eight to operate an OHV on public land. Drivers 16 years of age and older must have a valid driver's license to operate.

Online OHV safety education courses are available at www.stateparks.utah.gov/ohv.

Resources

- Brain Injury Association of Utah www.biau.org
- CDC Concussion in Sports www.cdc.gov/concussion/sports/index.html
- CEUs for health care providers on diagnosing and treating concussions (Utah Medical Home Portal) <http://www.medicalhomeportal.org/diagnoses-and-conditions/traumatic-brain-injury/description>
- SportsConcussions.org <http://www.sportsconcussions.org/ibaseline>
- Utah State Parks and Recreation <http://stateparks.utah.gov>

TBI Database

The data presented in this fact sheet come from the Utah TBI Database. Since 1990, the Utah Department of Health (UDOH) 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; Seizures; and Hemorrhages, bruising, or other trauma to the brain.

References

¹ Utah Emergency Department Encounter Database, Bureau of Emergency Medical Services, UDOH.

² Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control. Report to Congress on mild traumatic brain injury in the United States: Steps to prevent a serious public health problem. Atlanta (GA): Centers for Disease Control and Prevention; 2003.

Last updated: January 2012



If your life has been affected by a 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/.

Our Mission

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