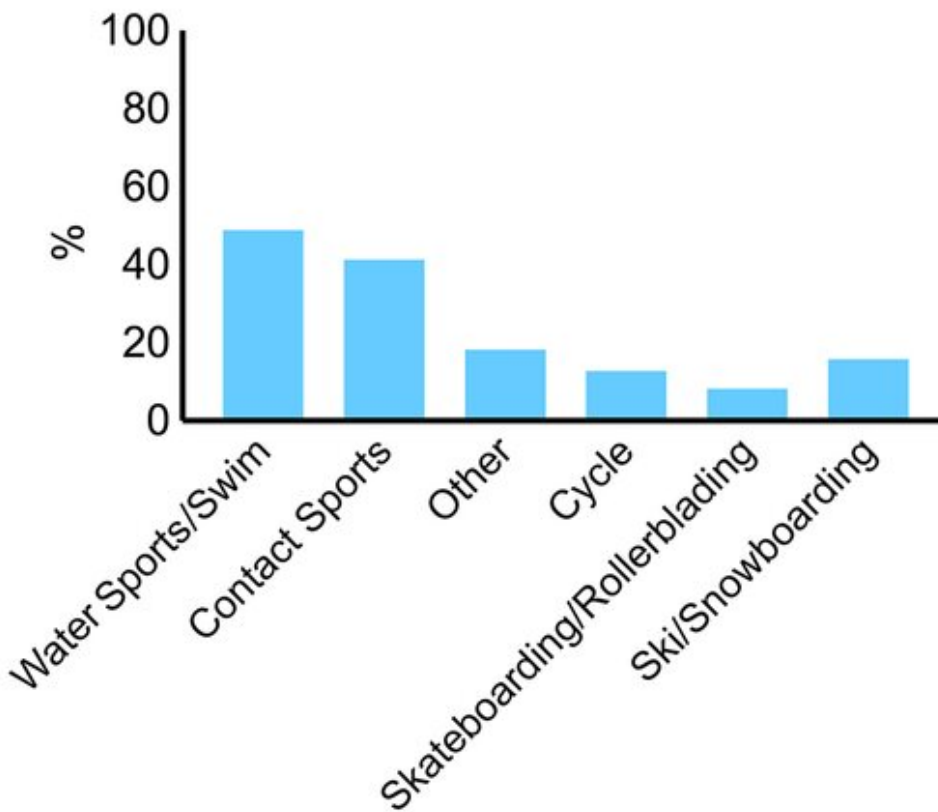
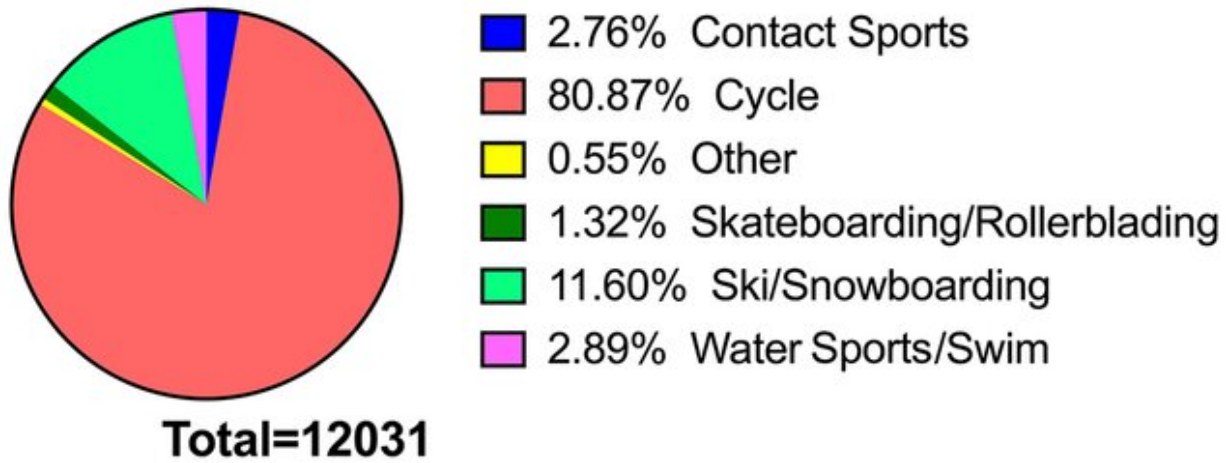


Sports-related traumatic spine injuries

August 24 2021



Upper: Mechanisms of injury. The majority of adult sports-related traumatic spine injuries (TSIs) were attributed to cycling-related injuries, with skiing/snowboarding, water sports/swimming, contact sports, skateboarding/rollerblading, and other mechanisms of injury also reflected in this cohort. Lower: Spinal cord injury (SCI) prevalence by mechanism of injury. Prevalence of traumatic SCI among patients with sports-related TSI varied based on mechanism of injury. Traumatic SCIs were most prevalent in patients with water sports/swimming– and contact sports–related injuries. Credit: © American Association of Neurosurgeons.

Harvard researchers examined data on sports-related traumatic spine injuries (TSIs) to see if different sports activities tend to result in particular injuries. They found that accidents involving cycling are by far the most frequent cause of TSIs, followed by accidents due to skiing and snowboarding. Detailed findings of this study can be found in a new article, "Adult sports-related traumatic spinal injuries: do different activities predispose to certain injuries?" by Blake M. Hauser and colleagues, published today in the *Journal of Neurosurgery: Spine* .

The authors examined data on 80,040 adult cases of sports-related traumatic injuries, focusing specifically on 12,031 cases of sports-related TSIs, which consisted of vertebral bone fractures and/or [spinal cord injuries](#). Data on all these [patients](#) were collected retrospectively from entries made to the National Trauma Data Bank between 2011 and 2014. Multiple imputation was used when record data were missing.

Eighty-two percent of patients with TSIs were male, and 78% were White. Patients with TSIs tended to be slightly older than all patients with sports-related injuries (median ages 48 and 43 years, respectively).

Cycling incidents accounted for 81% of sports-related TSIs, skiing and

snowboarding accidents for 12%, aquatic sport and contact sport mishaps for 3% each, and skateboarding and rollerblading accidents for 1%. Fifteen percent of patients with TSI presented with traumatic injuries to the spinal cord. These cord injuries were most prevalent in patients with aquatic sports–related injuries (49%) and those with contact sports–related injuries (41%).

Among all patients with sports-related TSIs, most injuries were caused by motor vehicle accidents (81%) and by falls (14%); it is important to note that the patients involved in motor vehicle accidents were not inside the vehicle. This distribution was not dissimilar to that for all sports-related injuries, in which the authors found 76% due to [motor vehicle accidents](#) and 19% due to falls.

Nine percent of patients with sports-related TSIs required surgery during their initial stay in the hospital. Patients with sports-related TSIs were likely to remain in the hospital on average 2 days longer and those with sports-related traumatic spinal cord injuries 7 days longer than patients with non-TSI sports-related injuries.

The severity of injuries and adverse outcomes were determined based on stays in the [intensive care unit](#) (ICU) and post-hospital discharge disposition. Patients with sports-related TSI were significantly more likely to spend time in the ICU than patients with other sports-related injuries. Furthermore, patients with sports-related TSI were more likely to be discharged to another hospital, a rehabilitation facility, or home requiring rehabilitative services (adverse outcomes) than all patients with sports-related injuries (32% vs. 17% of patients, respectively). Finally, although the percentage of patients who died in the hospital was low, patients with TSI were more likely to die in the hospital than patients with other sports-related injuries. Patients with traumatic spinal cord injuries were more likely than other patients with TSIs to be transferred to the ICU or die.

Traumatic spine injuries are serious injuries that can lead to significant disability or even death. Given that the majority of TSIs reviewed in this study were related to cycling accidents, the authors suggest that policies designed to make cycling safer should be implemented.

When asked about the findings of this study, Blake Hauser responded, "Using a national, multicenter database, our team was able to identify associations between sports-related traumatic spine injuries and clinical outcomes. These findings can be used to inform future research directions, including research regarding policy recommendations to prevent these injuries.

More information: Hauser BM, Gupta S, Hoffman SE, Zaki MM, Roffler AA, Cote DJ, Lu Y, Chi JH, Groff MW, Khawaja AM, Smith TR, Zaidi HA. Adult sports-related traumatic spinal injuries: do different activities predispose to certain injuries? *J Neurosurg Spine*, published ahead of print August 24, 2021. [DOI: 10.3171/2021.1.SPINE201860](https://doi.org/10.3171/2021.1.SPINE201860)

Provided by Journal of Neurosurgery

Citation: Sports-related traumatic spine injuries (2021, August 24) retrieved 19 November 2023 from <https://medicalxpress.com/news/2021-08-sports-related-traumatic-spine-injuries.html>

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