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## Kids' Sports-Related Concussions Soar

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### MedPage Today Action Points

- Explain to emergency department personnel and interested patients that ER visits for concussions occurring in children's and teens' team sports have risen sharply since the late 1990s.
- Further explain that sports were related to 50% of the reported concussions -- with individual sports such as bicycling and skiing and leisure activities accounting for more than half of those injuries.

### Review

Emergency department visits for concussions occurring in children's and teens' team sports have risen sharply since the late 1990s, researchers said.

The estimated number of adolescents 14 to 19 years old seen in emergency rooms for concussions rose from about 7,000 in 1997 to nearly 23,000 in 2007, according to Lisa Bakhos, MD, of Brown University in Providence, R.I., and colleagues.

Among children in the 8 to 13 age range, ER visits increased from an estimated 3,800 in 1997 to 7,800 in 2007, the researchers reported online in the journal *Pediatrics*.

Over the same period, they noted, school sports participation fell by some 17%, according to survey data from the National Sporting Goods Association.

"Our assessment highlights the need for additional research and injury prevention strategies," Bakhos and colleagues wrote.

On the other hand, it was unclear from their data whether head-jarring injuries in sports are really becoming more common -- or whether fewer young athletes receiving such injuries go untreated.

Bakhos and colleagues drew on data from the National Electronic Injury Surveillance System (NEISS) from 1997 to 2007, bolstered by another, more detailed NEISS dataset covering 2001 to 2005. The NEISS is maintained by the federal Consumer Product Safety Commission and is based on injury reports submitted by a nationwide sample of 100 hospitals with 24-hour emergency departments.

Over the entire period, the data extrapolated to a national total of about 503,000

emergency department visits for all-origin concussion among 8- to 19-year-olds from 2001 to 2005.

Sports were related to 50% of concussions (95% CI 35% to 64%), with individual sports, such as bicycling and skiing, and leisure activities accounting for more than half of those injuries.

Team sports -- including football, basketball, baseball, soccer, and ice hockey -- caused 38% (95% CI 27% to 48%) of the sport-related concussions. Those concussions included 25% of the head injuries seen in younger children but about half of those in teens.

Bakhos and colleagues urged that, for several sports, more could be done to prevent concussions. They noted, for example, that no state requires helmets for skiers of any age -- despite previous recommendations from injury-prevention groups.

"Soccer is another sport in which prevention strategies could be bolstered," they contended. Bakhos and colleagues observed that many concussions occur from colliding with goal posts or when struck by balls kicked at close range.

The researchers suggested that proper goal post padding and decreasing the air pressure in soccer balls -- at least for younger players -- could reduce concussions in that sport.

Bakhos and colleagues did not break down concussion rates by gender, but a separate review published online in *Pediatrics* by the American Academy of Pediatrics' Council on Sports Medicine and Fitness noted that girls may have higher concussion rates than boys in similar sports -- a risk often obscured by the high concussion rates seen in football, played almost exclusively by boys.

The review, led by Mark Halstead, MD, of Washington University in St. Louis, also provided guidance on managing concussions in young athletes.

It noted, for example, that CT and MRI findings are typically normal in concussions -- but that neuropsychological test results should not be the only basis for diagnosing concussion or determining when a young athlete may return to practice and competition.

Checklists such as the Sports Concussion Assessment Tool 2, published with the review, are helpful in diagnosis and management, as are other evaluations such as gait assessment, Halstead and colleagues indicated.

The council also echoed the call by Bakhos and colleagues for more aggressive prevention strategies, such as greater use of helmets in activities for which research has clearly shown they reduce concussion risk, such as in snow sports.

No external funding for the study or the review was reported.

Bakhos and colleagues declared they had no potential conflicts of interest.

The AAP declared that it had not received any commercial support for development of the review and that any conflicts of interest involving individual council members had been resolved.

**Primary source:** Pediatrics

**Source reference:**

Bakhos L, et al "Emergency department visits for concussion in young child athletes" *Pediatrics* 2010; DOI: 10.1542/peds.2009-3101.

**Additional source:** Pediatrics

**Source reference:**

Halstead M, et al "Clinical report: Sport-related concussion in children and adolescents" *Pediatrics* 2010; DOI: 10.1542/peds.2010-2005.

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