Review of soccer-related injuries to youth finds 1.6 million emergency room visits over 14-year span

by Bend Weekly News Sources

Study of U.S. pediatric soccer injuries shows higher rate for girls than boys

Girl soccer players may be sustaining more injuries than boys, but boys are twice as likely to be hospitalized for their injuries, according to the first comprehensive look at U.S. emergency room data on youth soccer injuries. The review appears in the February issue of The American Journal of Sports Medicine.

Coauthors Robert E. Leininger, Christy L. Knox, MA, and R. Dawn Comstock, PhD, of the Center for Injury Research and Policy at Columbus Children's Hospital, Columbus, Ohio, found startling differences in age, gender, injury rate, diagnosis, and disposition of injuries in their analysis of youth soccer injury statistics.

Past research on soccer injuries has tended to focus on pro players, injuries to specific body parts, and age- or gender-specific soccer injuries. This study is the first to investigate soccer-related injuries among the entire US pediatric population.

The authors reviewed pediatric, soccer-related data from the US Consumer Product Safety Commission's National Electronic Injury Surveillance System (NEISS), a nationally representative sample of 100 US hospital emergency departments (EDs). The NEISS collects information such as patient demographics, injury type and injury event and is updated daily. Though only a sampling of injuries seen in US EDs, data are weighted and the results extrapolated to calculate the numbers of injuries treated in all US emergency departments. The researchers reviewed 1.6 million soccer-related injuries to children ages 2 to 18 years of age seen in EDs participating in the NEISS from 1990 to 2003.

During the 14 years studied, the overall pediatric soccer-related injury rate did not increase significantly, though it reached a peak in 2000. Over the same time period, however, there was a statistically significant increase in the number of injuries among girls 2 to 18 years of age. The increase in the girls' injury rate may reflect a sharp increase in female participation in soccer, the authors theorize.

Overall, girls sustained more ankle and knee injuries and were more likely to have sprains or strains than boys. The number of sprains/strains and lower extremity injuries increased with age, and upper extremity injuries were most common in children ages 5-14. Concussion was the most common injury in players 15 to 18 years of age.

"Future research is needed to further examine soccer-related injuries by gender," the authors write. "Society norms in the US, which may allow very young boys to be more physically active and to engage in activities such as soccer with less parental supervision whereas very young girls may be less likely to do so, may explain the gender difference."

The researchers studied 4 specific age groups: 2-4 years, 5-9 years, 10-14 years, and 15-18 years of age. They found a 4-fold increase in the percentages of injuries occurring in players ages 10-14 (49% of all injuries) from those aged 5-9 years (12.3% of all injuries). "It is possible that the middle school-aged player is bigger, stronger, and playing harder, leading to an increase in the likelihood of injury," says Knox.

Injuries to the face, head, and neck were more common in very young soccer players (2 to 4 years of age) than in older children. The youngest players (especially boys) were also more likely to be hospitalized for soccer injuries than their older counterparts. "In general, younger children have great difficulty expressing themselves in words," says coauthor Christy Knox. "When that child is injured, it seems prudent to hospitalize and observe that child."

"Children 2 to 4 years of age should be closely supervised while playing soccer because of the risk of head injuries and rate of hospitalization," the authors write. "More research needs to be done on soccer helmets to see if the risk for concussion and other head injuries can be decreased, and heading should be minimized among younger players."

The authors call for the establishment of a national database of all soccer participation and injury data. "With increased knowledge of the epidemiology of soccer-related injuries for all pediatric age groups, prevention and training can be improved, and the endemic rate of injury can be decreased even as participation increases," they say.

"Compared to contact sports, soccer has a fairly low injury rate. We want children to stay healthy and active, and to be safe when playing any sport. Parents, players, coaches, referees, soccer organizations, and the medical community should work together to ensure a safe and enjoyable experience for all participants," the authors conclude.

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