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## Young Gymnasts Tumbling and Vaulting Their Way to the ER

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HealthDay Reporter  
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FRIDAY, April 4 (HealthDay News) -- Gymnastics done well is graceful and awe-inspiring, but one misstep or misplaced hand can quickly lead to injury.

More than 26,000 American children end up in hospital emergency rooms due to gymnastic-related injuries each year, according to a new study in the April issue of *Pediatrics*.

"Gymnastics has one of the highest injury rates of all girls' sports, and the injury rates are similar to that of other high-injury sports, such as soccer, basketball and cheerleading," said study senior author Lara McKenzie, an assistant professor in the Center for Injury Research and Policy at Nationwide Children's Hospital in Columbus, Ohio.

About 600,000 American youngsters participate in school-sponsored or club-level gymnastic competitions each year, according to background information in the study. Competitive pressure has been increasing in recent years, and children are competing at younger ages, according to the study.

McKenzie and her colleagues sifted through data from the U.S. Consumer Product Safety Commission's National Electronic Injury Surveillance System to cull information on gymnastics injuries for children between the ages of 6 and 17. The researchers limited their search to a 16-year period -- 1990 to 2005.

During that period, 425,000 children and teens had to be treated in emergency rooms for gymnastics-related injuries. That means almost five of every 1,000 gymnasts sustained an injury serious enough to require acute care, the study noted.

Eighty-two percent of the gymnasts were female, and about 50 percent were between 6 and 11 years old, according to the study. The overwhelming majority of children -- 97.4 percent -- were treated at the emergency room and released. Just 1.7 percent of those injured had to be admitted to the hospital.

The researchers found that older children -- those between 12 and 17 -- were most likely to be injured, experiencing 7.4 injuries per 1,000 children, compared to children between 6 and 11 who suffered 3.6 injuries per 1,000 gymnasts.

Forty percent of injuries occurred at school, while 6 percent occurred at another public property. Another 40 percent occurred at a place geared to recreation or sports, and slightly less than 15 percent of the injuries happened at home.

The upper extremities were most likely to be injured (42.3 percent), followed by the lower extremities (33.8 percent). The head and neck were injured in 13 percent of the cases. Strain or sprain was the most common diagnosis (44.5 percent), followed by fracture or dislocation (30 percent).

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Concussions occurred in less than 2 percent of those children injured, according to the study.

Because the researchers only included emergency room visits, McKenzie said it's possible that the number of gymnastics injuries reported in the study is underestimated.

Dr. Jan Grudziak, an orthopaedic surgeon at Children's Hospital of Pittsburgh, added that the study also didn't "address chronic problems, such as overuse injuries."

"The level of competition in gymnastics has risen incredibly fast -- 6- and 7-year-old girls are now doing what 14-year-olds used to do," said Grudziak. "It's unbelievable what kids are doing now compared to 20 years ago, but kids' bodies are still the same. They're not getting like Arnold Schwarzenegger suddenly. Their conditioning is better, but we're still talking about a growing organism."

Grudziak also expressed concern about injuries occurring in competitive cheerleading, which employs many gymnastic techniques.

He also advised that "children shouldn't do one sport year-round; employ cross-training." And, he added, make sure your child's coaches have experience training children and they employ proper conditioning and use proper equipment.

"Gymnastics can be a dangerous sport," McKenzie said. "It's high-impact, it's acrobatic. Parents need to be sure that children have a trained coach or spotter using appropriate training equipment, such as soft pits" for landing.

### More information

To learn more about gymnastics injuries, visit the [American Academy of Orthopaedic Surgeons](#).

SOURCES: Lara McKenzie, Ph.D., M.A., assistant professor, Center for Injury Research and Policy, Nationwide Children's Hospital, Columbus, Ohio; Jan Grudziak, M.D., Ph.D., orthopaedic surgeon, Children's Hospital of Pittsburgh; April 2008 Pediatrics

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