

# Kids most likely to suffer sport-related eye injuries

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Credit: Robert Kraft/public domain

Roughly 30,000 sports-related eye injuries serious enough to end in a visit to the emergency room occur each year in the United States, and the majority happen to those under the age of 18, new Johns Hopkins Bloomberg School of Public Health-led research suggests.

The researchers, publishing Nov. 3 in *JAMA Ophthalmology*, also found that basketball and cycling were the two sports most likely to cause eye injuries, while 21 percent of baseball and softball injuries resulted in fractures of the bones around the eye, which often require surgery to repair.

"These are one-time injuries that can have lifelong impacts on the ability to gain an education, to earn a livelihood, to read or drive a car," says the study's leader, R. Sterling Haring, DO, MPH, a DrPH candidate in the Bloomberg School's Department of Health Policy and Management. "This needs to be recognized on the policy level and on the personal level as something we should be paying attention to."

For the study, Haring and his colleagues analyzed the Nationwide Emergency Department Survey, which contains discharge data on approximately 30 million annual emergency room visits to more than 900 hospitals nationwide. Over the course of the study, from 2010 to 2013, 120,847 patients arrived at the emergency room with sports-related eye injuries, making up roughly three percent of all eye injuries. Sixty percent of the injured males and 67 percent of females were age 18 or younger.

"These numbers represent only the injuries coming to the emergency room," Haring says. "Once you account for the number of people going to urgent care centers, community eye doctors or primary care physicians, the numbers are probably much higher."

Among males, the researchers found, the riskiest sports for eye injuries were basketball (26 percent), baseball or softball (13 percent) and air guns (13 percent). For females, the riskiest sports were baseball or softball (19 percent), cycling (11 percent) and soccer (10 percent). Lacerations were the most common injuries, followed by contusions.

The prominent role of cycling and soccer in these injuries was especially surprising, as these have not traditionally been considered high-risk activities, Haring says. The National Eye Institute lists these as low- and moderate-risk sports, respectively.

"Thousands of cycling-related eye injuries occur each year," Haring says. "Many of these could probably be prevented by something as simple as wearing wrap-around sunglasses."

Other sports, however, require more serious eye protection.

While visual impairment was generally rare in the sports injuries analyzed, 26 percent of all cases of visual impairment were due to air and paintball guns, even though they made up less than 10 percent of all injuries. It's unclear what the longer-term consequences will be for those who were injured.

Previous research has shown that appropriate protective eyewear can significantly reduce the incidence of sports-related eye injuries. In sports such as hockey, Haring says, the use of visors to protect the eyes has prevented many serious eye injuries that were once common in the sport. Other research, he says, has shown that when appropriate eyewear is available but not mandatory, top-performing athletes frequently choose to wear it. He says he hopes that future research can identify ways to get more athletes of all ages and skill levels to wear appropriate protective eyewear.

"While brain injuries such as concussions are getting a lot of attention these days, everyone from Little League coaches to weekend warriors need to understand that there are real risks to the eye when playing sports," Haring says. "Now that we recognize what sports may be most hazardous to the eye, we need to look for the best ways to prevent these injuries."

"Epidemiology of sports-related eye injuries in the United States" was written by R. Sterling Haring, DO, MPH, Isaac D. Sheffield, BS, Joseph K. Canner, MHS, and Eric B. Schneider, PhD.

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