

# Pediatric ocular trauma editorial

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## Editorial

The prevention of ocular injury and trauma is an important subject matter, but often a far unrecognized topic of discussion. As any treating ophthalmic specialist knows, everyday occurrences can lead to catastrophic consequences when it relates to ocular injury. Often with such injuries, parental education can serve as a fundamental means preventative medicine. In order to provide such education to parents, ophthalmologists must remind themselves as to the various factors related to pediatric trauma that are most relevant to hopeful prevention.

Depending on the patient population, the nature, time to treatment, severity of injury, and long-term implications for vision and eye health differs. This is especially true when evaluating these factors in a pediatric population as compared to adults. The pediatric eye may behave differently during surgical repair, which is greatly influenced by patient age or degree of eye development. The immune response in pediatric patients is often more vigorous, which can be beneficial from a healing standpoint, but can also be problematic if such response is too exuberant. Another critical component to the treatment of traumatic ocular injuries in the pediatric population is the consideration towards amblyopia prevention, depending again on age and visual development status.

A review of the literature related to pediatric ocular trauma reveals that many considerations in this population are similar across continents. Whether it be in Asia, Europe, or North America, more young boys than girls account for the traumatic ocular injuries seen in emergency departments and eye centers. Reports have suggested that upwards of 73% of injuries may be found in males as compared to females, while a common ratio in the range of 1.5-2:1 is reported as well.<sup>1-7</sup>

When considering the environment in which pediatric injury may occur, the home is consistently reported as the primary location, followed by school.<sup>1-7</sup> Some study reports have suggested that the home predominance may be as great as 64-73% depending on the region of the world.<sup>2,5</sup> These types of statistics advocate for the importance of direct child supervision and “child-proofing” measures in the prevention of pediatric eye injury.

Consistently the cornea is reported to be the primary site of injury, while reports from varying locations around the globe have reported highly variable rates of injuries classified as “closed” versus “open” globe trauma.<sup>1-7</sup> Given the significant variation in traumatic injuries, reports have suggested that as few as 4-7% and as high as 23% or pediatric injuries may result in vision threatening or poor vision outcomes despite appropriate and timely evaluation and repair.<sup>1,2,7,8</sup> As would be expected, in this patient population, mechanical injury or injury resulting from an object strike has been reported to be the most common mechanism of injury.<sup>1-7</sup> The nature of these injuries is again suggestive that a high degree of prevention may be achieved with adequate supervision and preventative measures.

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In summary, pediatric ocular injury is an important topic, applicable across the globe. The counseling of parents is a critical means to appropriately educate parents in methods of preventing serious, sight-threatening injury. A number of studies have consistently reported boys to be more susceptible to injury compared to girls, while the home is the most often location of injury. As epidemiologic studies continue to evaluate the circumstances and statistics associated with pediatric trauma, the ophthalmic community can better educate parents and communities as to the efforts necessary to minimize risk of ocular trauma. Hopefully with continued parental education, greater preventative measures will develop and result in decreased rates of emergency department and eye center visits related to ocular injury across the globe.

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## Conflicts of interest

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