

# Ocular Trauma in Children – Prevention is better than cure

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The saying by Benjamin Franklin “An ounce of prevention is worth a pound of cure” is particularly true in the context of pediatric ocular trauma, where appropriate preventive measures can save many eyes, effort, money and time.

Each year an estimated 3.3 to 5.7 million pediatric eye injuries occur worldwide, out of which, nearly 90% are preventable<sup>1</sup>. Being a leading cause of non-congenital unilateral blindness, the incidence of severe visual impairment or blindness resulting from ocular trauma in children is reported to be up to 14%<sup>2</sup>. Such enormity of the resulted morbidity makes ocular trauma an important public health problem.

Statistics show that male gender is a risk factor for ocular injuries of all types and in all environments, while the causes of injury vary with the living environment of the children. A study with 15 years retrospective review of paediatric eye trauma reports that injuries occurred at home predominate in children younger than 6 years, whereas injuries at play are the most frequent in school children<sup>2</sup>. Major sources of ocular injuries in children include pencils, syringes, vegetative material like branches, sticks, bow and arrow made with straws etc<sup>3</sup>. From a local perspective, the study conducted at Al-Shifa Trust Eye Hospital on childhood ocular trauma revealed that open globe injuries were 76% versus 23% of closed globe injuries (See the article on childhood ocular trauma by Aziz et al.). Factors indicating poor visual prognosis in such cases include poor presenting visual acuity, posterior segment involvement, long wound length, globe rupture, lens involvement, vitreous hemorrhage, retinal

detachment, and endophthalmitis. Long term complications like uveitis, traumatic cataract and secondary glaucoma require timely clinical decisions for appropriate management strategies. Unfortunately, the number of tertiary care eye hospitals in the country with adequate facilities to deal with such complicated cases is too less.

As mentioned previously, up to 90% of eye injuries can be prevented with better education, supervision, and proper eye protection. In general, strategies aimed at reducing ocular trauma fall into 3 broader categories: legislation, education, and protection. Legislations including restrictions on the sale and supply of certain consumer products like fire crackers and mandatory vehicle seatbelts have assisted in reducing paediatric eye injuries in many developed countries<sup>4</sup>. Educational tools aimed at children, their parents and caregivers have been effective in changing attitudes to eye health and safety. Effective pediatric eye injury prevention systems require a multifactorial approach combining legislation, policies, standards, education, and personal eye protection to limit exposure to ocular hazards<sup>5</sup>.

In addition to these measures, analyzing mechanism of trauma can also facilitate the efforts to prevent eye injuries at home, school & workplace. Moreover, parental awareness and supervision is extremely important in order to reduce the incidence of ocular trauma. Parents and caregivers must ensure to keep sharp objects like needles, pens, pins away from small children. Cases have been reported in which mere fights among school children resulted in serious ocular injuries and permanent loss of sight. It is the duty of

parents as well as school teachers to teach children regarding the hazards of fighting with others.

Importance of collaborative work between health professionals and development of a standardized protocol for a trauma registry is of also paramount importance<sup>4</sup>. Educational campaigns in print and electronic media are required, to highlight the importance of prevention of potentially damaging factors and promotion of health education strategies covering both the home environment and the streets. At government level, measures like control of the toy industry and legislation on sale of fireworks etc. can help to significantly reduce the cases of ocular injuries in children<sup>6</sup>.