

Importance of eye globe trauma

Short communication

Globe injuries are a public health problem, despite the many differences in health systems of countries around the world. The incidence rates for a person to be hospitalized with an eye injury (per 100,000 people) are 12.6 in Singapore,¹ 13.2 in the USA,² and 15.2 in Sweden.³ Globe trauma is a problem not only in developing countries but also in developed countries. Data from the National Center for Health Statistics (1977) estimated that nearly 2.4 million eye injuries occur in the United States annually. This report calculated that nearly one million Americans have permanent significant visual impairment due to injury, with more than 75% of these individuals being monocularly blind.⁴ Studies on the numbers of globe injuries in developing countries lack international publications.

The importance of globe trauma is due to three fundamental causes: despite all the advanced treatment methods, globe trauma still creates permanent visual morbidity and disability; globe trauma causes a burden on public finances because it can result in the loss of labor, treatment, and rehabilitation; and most importantly, the vast majority of these traumas could be avoided by taking certain measures. Eye trauma is a leading cause of monocular blindness worldwide, especially in developing countries.⁵ Approximately 1.6 million people are blind due to ocular trauma. Approximately 2.3 million people have bilateral low vision from trauma, and 19 million have unilateral visual loss.⁶

Although eye injuries can occur at any age, the majority of those injuries are among young adults, with an average age of about 30 years.⁷ Treatment, rehabilitation, and disability after trauma can result in a further burden on public finances because the person is in the most productive period of his or her life. Information regarding the public cost of eye trauma is limited. The figures, if extrapolated to the known frequency of eye injuries in the United States, offer some perspective on the enormity of the total cost. Only job-related eye trauma (one-third of all eye injuries) costs approximately \$300 million annually in the United States. This figure includes medical and hospital bills, worker's compensation, and lost production time.⁸ In Australia, it has been estimated that 29,000 injuries occur annually, involving a cost of \$155 million, with more than 20% Victorians over the age of 40 having suffered at least one eye injury in their lifetime.⁹

Despite all the advances in state-of-art micro-surgery and an understanding of ocular trauma, the functional results of eye trauma surgery are unfavorable, especially in children. Identifying the causes and the nature of injuries in the population, and targeting these through education and legislation, are the primary goals for prevention. Blindness resulting from eye injury is unique, as nearly 90% of such blindness can be prevented by taking relatively simple measures.¹⁰ Egger at suggested that an initial \$0.5 million in prevention funding could result in an annual savings of up to \$200 million in sports-related injuries.¹¹ A similar approach to consider is the allocation of more spending to prevent ocular trauma, which would eventually return the investment to public finances. To better treat eye trauma, in addition to increasing prevention measures, the necessity of taking

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Erbil Seven,¹ Adnan Cinal²¹Department of Ophthalmology, Yuzuncu Yil University, Turkey²Department of Ophthalmology, Gazi University, Turkey

Correspondence: Erbil Seven, Department of Ophthalmology, Yuzuncu Yil University, 65080, Van, Turkey, Tel +905052925628, Email erbilseven@gmail.com

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preventive measures must be made clear. The initial measures must make society sensitive to eye injury. In this regard, not only are adults an at-risk group, but also are children, and the prevalence of trauma should be made informed.

Further, administrative measures and protective equipment should be in place for the most common work-related accidents and for accidents that occur in other environments, such as home accidents and accidents involving schools and children's games. Generally; children's game area, school and house area are risk factors related with globe injury for kids, working areas are risky for adults. Because, children and adults spend majority of time in these places. For prevention of ocular injury; the patient's eye injury potential should be determined, the appropriate protective devices (polycarbonate lenses, industrial safety glasses with polycarbonate lenses and side shields, industrial safety goggles with polycarbonate lenses, helmet or face protector combinations etc.) should be prescribed and a supplier should be recommended.¹² Despite their importance, eye trauma prevention measures are still insufficient, and the desired level of awareness in the world has not yet been established. Further study and analysis will provide guidance on measures to be taken to the government or administrators.

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Conflicts of interest

The authors declare there is no conflict of interests.

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