

## Eye injuries: improving our practice



**Daksha Patel**

E-learning Director: International Centre for Eye Health, London School of Hygiene and Tropical Medicine, London, UK.

Most eye health workers are involved in managing trauma. In fact, ocular injuries around the world make up a major part of daily ophthalmic clinical practice. Eye injuries range from mild, non sight-threatening, to extremely serious with blinding consequences.

### Epidemiology

Epidemiological data on ocular trauma is limited. A review undertaken for the World Health Organization (WHO) in 1998<sup>1</sup> estimated that injuries were responsible for the following:

- 1.6 million people blind in both eyes
- 2.3 million people with low vision in both eyes
- 19 million people blind in one eye
- 55 million people with eye injuries that resulted in restricted activities for more than one day a year.

The demographic pattern (age/gender) of ocular injuries varies with the environment and cause of injury. The general pattern is that of a curve with two peaks: one in the age group 5–25 years and another in people aged 70 years and over. Compared to women, the risk of eye injuries in men is four times higher.

Accurate data – essential for guiding



Faustin Ngounou

**A 10-year-old with corneal laceration and traumatic cataract after a stone hit him in the eye. CAMEROON**

management and prevention – has been difficult to record or compare, due to a number of factors.

- The different environments in which injuries occur
- The wide range of causes
- The wide spectrum of clinical (anatomical) presentations
- Different data sources, e.g. hospital

discharge data, out-patient visits

- The lack of a widely used standardised template for reporting injuries.

### Assessment and the BETTS Classification

The introduction of the Birmingham Eye Trauma Terminology System (BETTS)<sup>2</sup> in early 2000 provided a standardised and simple system to describe mechanical injuries to the eye globe. The panel on page 43 provides an outline of this classification, which is applicable to clinical practice and can also be used to audit and create an appropriate registry for injuries. In this issue we look at how BETTS is used to guide the clinician in management.

In all eye trauma cases, the main concern of patients and their families is the visual prognosis. To address this, the Ocular Trauma Score (OTS) has been developed; it is based on the BETTS classification system and is used to calculate prognosis (with the assumption

### ABOUT THIS ISSUE

This issue of the *Community Eye Health Journal* is about eye injuries, including approaches for prevention and tips on how to assess, classify and manage them. Eye injuries affect people, not just eyes. People with eye injuries are in pain and have been through what was very likely a terrifying experience for them; they will also be anxious about their vision. We explain how to reassure and support patients, despite the difficult circumstances in which they find themselves. We also introduce the Ocular Trauma Score (OTS), based on the BETTS classification, which is there to help clinicians estimate the visual prognosis of an eye injury and guide referrals. It is particularly helpful when talking to patients and their family members about what to expect. The OTS isn't perfect, however – it is correct 4 times out of 5 which means that clinicians must always apply their best clinical judgement when using it. Also, the OTS is only valid if the eye injury has been managed correctly. We hope that our article on the management of injuries will provide useful reminders. Enjoy the issue!

Continues overleaf ►

# In this issue

- 41 **Eye injuries: improving our practice**
- 44 **The Ocular Trauma Score (OTS)**
- 45 **Implementing and applying the Ocular Trauma Score: the challenges**
- 46 **Assessing an eye injury patient**
- 48 **Managing eye injuries**
- 50 **Talking with eye injury patients**
- 51 **Prevention of ocular injuries**
- 52 **Challenges of agriculture-related eye injuries in Nigeria**
- 53 **Preventing eye injuries in quarries**
- 54 **REFRACTIVE ERROR UPDATE**  
**Improving access to refractive and eye health services**
- 55 **ICEH UPDATE**
- 56 **CATARACT SERIES**  
**A 'health system' perspective on scaling up hospital cataract services**
- 57 **EQUIPMENT CARE AND MAINTENANCE**  
**Caring for A- and B-scans**
- 58 **TRACHOMA UPDATE**
- 59 **CPD QUIZ**
- 60 **NEWS AND NOTICES**

that the trauma is managed optimally). On page 44 we introduce the OTS and demonstrate how it may be used.

## Prevention and management

In general, it seems that people assume that eye injuries are the result of 'accidents', i.e. that they are outside of human control. It is not always the case – eye injuries are often preventable. This assumption might go some way towards explaining why, in many countries, not much attention has been given to the development of strategies for eye injury prevention.

The first step in prevention is to understand the local causes of eye injuries, and their patterns. This is why it is important to establish a local injuries register that uses the BETTS classification system and includes age, gender, place and cause of injury. This evidence can guide the development of local prevention interventions, such as protective eyewear in the workplace, legislation and enforcement about the use of seat belts, and first aid management of agricultural eye trauma. Data will also be comparable with other regions and other countries.

In many low- and middle-income countries, trauma cases are often complicated by late presentation and/or previous inappropriate intervention. To have a well-trained first contact person at the primary level is therefore critical for the correct assessment and management of an eye injury.

## Conclusion

From a public health perspective, neither bilateral nor unilateral blindness data provide a complete picture of the impact of ocular trauma on society. Severe ocular trauma requires expensive hospitalisation and specialist treatment, and often prolonged follow-up and visual rehabilitation. This has significant economic costs for the patient and the health service. It is therefore very important to better understand the local patterns of ocular injuries (through accurate data collection) and to develop appropriate prevention and management strategies.

## 'The first step in prevention is to understand the local causes of ocular injuries and their patterns'

### References

- 1 Négrel A, Thylefors B. Review article The global impact of eye injuries. 1998;5(3).
- 2 Kuhn F, Morris R, Witherspoon CD, Mester V. The Birmingham Eye Trauma Terminology system (BETT). J Fr Ophthalmol [Internet]. 2004;27(2):206–10. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15029055>



"Improving eye health through the delivery of practical high-quality information for the eye care team"

Volume 28 | ISSUE 91

Supporting VISION 2020:  
The Right to Sight



### Editor

Elmien Wolvaardt Ellison  
[editor@cehjournal.org](mailto:editor@cehjournal.org)

### Editorial committee

Allen Foster  
Clare Gilbert  
Nick Astbury  
Daksha Patel  
Richard Wormald  
Matthew Burton  
Hannah Kuper  
Priya Morjaria  
G V Murthy  
Fatima Kyari  
David Yorston  
Sally Crook  
Serge Resnikoff  
Babar Qureshi  
Peter Ackland  
Janet Marsden  
Noela Prasad

### Regional consultants

Hugh Taylor (WPR)  
Leshan Tan (WPR)  
GVS Murthy (SEAR)  
R Thulsiraj (SEAR)  
Babar Qureshi (EMR)  
Mansur Rabiu (EMR)  
Hannah Faal (AFR)  
Kovin Naidoo (AFR)  
Ian Murdoch (EUR)  
Janos Nemeth (EUR)  
Van Lansingh (AMR)  
Andrea Zin (AMR)

**Editorial assistant** Anita Shah

**Design** Lance Bellers

**Proofreading** Jane Tricker

**Printing** Newman Thomson

### CEHJ online

Visit the *Community Eye Health Journal* online. All back issues are available as HTML and PDF. Visit: [www.cehjournal.org](http://www.cehjournal.org)

### Online edition and newsletter

Sally Parsley: [web@cehjournal.org](mailto:web@cehjournal.org)

### Consulting editor for Issue 91

Daksha Patel

### Please support us

We rely on donations/subscriptions from charities and generous individuals to carry out our work.

### We need your help.

Subscriptions in high-income countries cost UK £100 per annum.

Contact Anita Shah

[admin@cehjournal.org](mailto:admin@cehjournal.org)

or visit the journal website:

[www.cehjournal.org/donate](http://www.cehjournal.org/donate)

### Subscriptions

Readers in low- and middle-income countries get the journal **free of charge**. Send your name, occupation, and postal address to the address opposite. French, Spanish, and Chinese editions are available. To subscribe online, visit [www.cehjournal.org/subscribe](http://www.cehjournal.org/subscribe)

### Address for subscriptions

Anita Shah, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK.

Tel +44 (0)207 958 8336

Email [admin@cehjournal.org](mailto:admin@cehjournal.org)

### Correspondence articles

We accept submissions of 800 words about readers' experiences. Contact: Anita Shah: [correspondence@cehjournal.org](mailto:correspondence@cehjournal.org)

© International Centre for Eye Health, London. Articles may be photocopied, reproduced or translated provided these are not used for commercial or personal profit. Acknowledgements should be made to the author(s) and to Community Eye Health Journal. Woodcut-style graphics by Victoria Francis and Teresa Dodgson.

ISSN 0953-6833

### Disclaimer

Signed articles are the responsibility of the named authors alone and do not necessarily reflect the views of the London School of Hygiene & Tropical Medicine (the School). Although every effort is made to ensure accuracy, the School does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the School in preference to others of a similar nature that are not mentioned. The School does not endorse or recommend products or services for which you may view advertisements in this Journal.