Developing Eye Protection in Sport

Nicholas Jones
Manchester Royal Eye Hospital
Rising incidence of eye injuries in sport

Function of an ophthalmic “accident and emergency” department: results of a six month survey

N P Jones, J M Hayward, P T Khaw, C M P Claué, A R Elkington

2.2% of injuries
sport-related

0.9% of casualties
admitted
Preaching to the converted?

Racket sports 42% of total
27% needed admission

SEVERE EYE INJURIES IN CRICKET

N. P. JONES, FRCS and A. B. TULLO, MD, FRCS
Manchester Royal Eye Hospital

Eye injuries in sport: incidence, biomechanics, clinical effects and prevention

N. P. JONES
University Department of Ophthalmology, Manchester Royal Eye Hospital; Manchester, UK

One Year of Severe Eye Injuries in Sport

NICHOLAS P. JONES
Manchester

Admissions: 23% squash
50% racket sports

Orbital blowout fractures in sport

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University Department of Ophthalmology, Manchester Royal Eye Hospital, Manchester, UK
Reaching a wider audience: optometry and racket sports players

CLINICAL

EYE INJURIES IN SPORT:
The role of the optometrist

By Nicholas Jones

Eye contact

and how to avoid it!

When eye injuries occur, they can be very messy and very serious. But a lot of the time the injury could have been avoided if the player had worn protective goggles, explain Nicholas Jones and Alison Turnbull.
Kindred spirits

**Serious injuries:**
42% sport
18% assault

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**Eye injuries: a prospective survey of 5671 cases**

CAROLINE J MACEWEN

*From Glasgow Eye Infirmary*

**Sport associated eye injury: a casualty department survey**

CAROLINE J MACEWEN

*British Journal of Ophthalmology, 1987, 71, 701–705*

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**Serious eye injury in badminton players**

S P KELLY

*From the Department of Ophthalmology, Leicester Royal Infirmary, Leicester LE1 5WW*

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**Eye injuries in organised sport in a rural area**

SIMON KELLY AND JOHN NOLAN

*From the Department of Ophthalmology, Regional Hospital, Galway, Ireland*
Reaching a wider audience: RNIB Eye Safety Year 1991

**SQUASH AND BADMINTON**

**EYE SAFETY TOP TEN**

- Protect your eyes - wear sports safety glasses
- Play safe - know the rules of your sport and become a skilful player
- Never wear glass-lensed spectacles for sport
- Avoid lensless goggles - balls and shuttlecocks can penetrate them
- Always follow the ball or shuttlecock. Don’t leave it too late before you look behind. That’s how eye accidents happen
- Sports eye injuries can be blinding - get expert medical help fast
- In squash never crowd in close to your opponent
- In badminton keep your racket head up when playing close to the net
- In squash, if your opponent obstructs your shot don’t play it. Ask for a let
- Watch out! Shuttlecocks can shoot through torn or loosely tied nets

**DON’T COURT DISASTER**

Protect your eyes

Sponsored by Optrex
Inappropriate safety eyewear

BS 2092
“Sportspec”

“Sports protector”
Other countries did it better!
Why did others do better?

- **Canada: CSA P400 1982**  
  - Racquet Sports Eye Protection
- **USA: ASTM F803 1983**  
  - Eye Protectors for Racket Sports
- **Australia/New Zealand: AS/NZS 4066 1985**  
  - Eye Protectors for Racquet Sport
- **UK: BSI (nothing)**
- **Europe: CEN (nothing)**
Eye protection in racket sports
The need for a European standard

A joint symposium organised by
The Royal National Institute for the Blind

and

City University

Eye injuries in racquet sports
Proper protection needed

To acknowledge the existence of this problem, cooperate in educating players about the possible dangers of eye injury, and coach safer play wherever possible.

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Senior Registrar in Ophthalmology, Ninewells Hospital, Dundee DD1 9SY

NICHOLAS P JONES
Lecturer in Ophthalmology, Manchester Royal Eye Hospital, Manchester M13 9WH
The beginnings of the campaign within the squash arena
Getting personally involved

- **RCOphth**
  - Spokesman on eye trauma prevention
  - BSI representative (BSI PS/2: Eye protection) 1991
- **Medical Commission on Accident Prevention**
- **Squash Rackets Association**
  - Medical Officer “discussions”
- **Finding those who had achieved something**
  - Tom Pashby, Mike Easterbrook, Paul Vinger
Getting optometry on board

D F C Loran
C J MacEwen

SPORTS VISION

Eye injuries in sport
Nicholas P. Jones

Eye protectors for sport
Michael Easterbrook
BSI PS/2/9

- NPJ 1992: First time RCOphth rep had ever attended
- Chair: Medical officer of SRA
- Agenda: Eye protector for all sports
  - going nowhere
- Issues: expense, steaming up, diverted injuries
- Hidden agenda: Sports organisations avoided any negative issues
- No progress
Every cloud has a silver lining....

- Untimely death of SRA medical officer 1995
- Appearance of SRA enthusiast (Eric Cruttenden)
- NPJ invited to chair BSI PS/2/9 1996
- Committee reconvened, members including:
  - SRA
  - Rackets & Real Tennis Association
    - Wanted standard to include their sport
  - Optical manufacturers
- Representation offered but refused by:
  - Badminton Association, LTA
BSI Standard: Eye Protectors for Racket Sports (Part 1: Squash)

• 1/1998: Draft for public comment
• 4/1998: BS 7930-1 published
• 6/1998: NPJ Honorary Medical Officer for SRA
• Plans for parts 2 etc?:
  – BS 7930-1 probably good for racketball
  – Standard for real tennis probably not feasible
  – No communication from Badminton Association (but protector almost certainly adequate for badminton)
  – No communication from LTA
BS 7930-1:1998

- Quality of manufacture, firm retention
- Field of view, optical tolerances
- Impact resistance (heated yellow-dot ball @ 40m/s [90mph]; 4 impact points on protector):
  - No frame failure or optic dislocation
  - No eye contact
Protectors submitted for testing

Eye protection in racket sports

Table. These protectors meet British Standard BS 7030:1. Further protectors may meet these criteria in due course.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Distributor</th>
<th>Protector</th>
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<tr>
<td>Prince</td>
<td>Prince stockists</td>
<td>Spectrum</td>
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<tr>
<td>Dunlop</td>
<td>Dunlop stockists or Kingswood Leisure Services</td>
<td>Squash Eyewear</td>
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<tr>
<td>Leader Industries</td>
<td>Inland UK Limited or Apollo Leisure Sports Supplies Ltd</td>
<td>Dallas</td>
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<tr>
<td>Unique Sports Products Ltd</td>
<td>Original Sports</td>
<td>Vision 2</td>
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<td>Squash Design - IX</td>
<td>TIB Trading</td>
<td>New Yorker</td>
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<td>Norville Optical Co Ltd</td>
<td>Norville Help Line or from local optometrists</td>
<td>Freethrow</td>
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<td>Demon*</td>
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<td>IX Power Pro*</td>
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* can be fitted with prescription lenses
Oakleys: failed testing
Further work at SRA/BSI

- More protectors added to approved list
- Mandatory eye protection in junior competition
- Educating coaches
- Convincing players
Work with World Squash Federation

• To remove all non-standardised eye protectors from literature from all squash associations (almost complete)
• To make mandatory the use of eye protection for doubles and juniors in all WSF-sponsored events (complete)
Where next?

• Re-investigate incidence of injury
• Re-investigate attitudes of players to eye protection wear (rates low):
  – Expense, comfort, vision, apathy
• Next priority for a sport protector?
  – Over to you!