Contact lenses and sport

Key insights on contact lenses and sport
Sports vision is a relatively new field for eye care professionals in the UK and one that is evolving into a more science-based discipline. While training elite athletes requires specialised instrumentation and a high level of commitment, the benefits of contact lenses for sports participants at all levels and all ages are clear. Involvement in sports vision presents opportunities to optimise patients’ performance, grow your patient database and increase the penetration of contact lenses too.

Vision science in sport update
Dr Michel Guillon

- Involved in science-based vision management of elite athletes
- Initial stages – screening for visual and ocular defects and correcting any refractive or binocular anomalies – can be in everyday practice
- Key principles: in-depth knowledge of the sport, determine visual needs, set relevant objectives and use targeted training programmes
- Visual needs for individual sports specific and complex, eg goalkeeper (multiple tests) and golf (angular vernier acuity, ocular dominance)
- Ocular dominance in elite athletes differs from general population
- Sports psychology plays a role in non-optometric sports vision (leading author John Vickers, Perception, Cognition and Decision Training)
- Fundamentals of science-based vision management of elite athletes:
  - Specialist instruments (reaction time, fixation, information acquisition)
  - Programmes customised to the individual not just the sport
  - Systematic data collection to monitor change
  - ECP must be an integral part of the coaching team

USE THIS IN YOUR PRACTICE TO:
- Decide on the right level of participation for you and your practice
- Apply the key principles of science-based sports vision
- Limit your sports vision practice to ocular and visual assessment and vision correction, unless you have specialist instrumentation
Contact lenses in winter sports
Kristine Dalton

- Winter sports can be indoors as well as out (eg skating, ice hockey)
- Challenges for CLs are temperature, humidity, dryness and speed
- Tear film quality affected at very low temperatures
- Artificial tears may be needed in low relative humidity
- High altitudes (eg mountaineering) associated with increased tear osmolarity, decreased TBUT and thinning of the tear film
- High UV exposure, especially at altitude, carries risk of photokeratitis
- UV-blocking CLs and wraparound sunglasses should be worn
- Dryness can be exaggerated at high speeds (eg downhill skiing) and goggles or faceshield should be worn to protect the ocular surface
- Consider contrast enhancing tints and anti-fogging lenses essential
- When head injury is a major risk (eg bobsleigh) let A&E know CLs worn
- CLs for winter sports can be a practice builder

USE THIS IN YOUR PRACTICE TO:
- Seize the opportunity to become a specialist in winter sports
- Ensure that you supply appropriate eyewear for a given sport
- UV is a major hazard in winter sports and eye protection is essential

Vision in elite sport
Martin Lloyd

- Vision testing and correction in athletes must be very precise
- Important parameters are eye dominance, binocular function, dynamic fixation, low contrast acuity and compliance
- Eye dominance either predisposes player to sport or sport changes it
- Look out for small uncorrected cyls and undetected BV problems
- Recognise limit to what sports vision can do – ECP is not sports coach
- Most patients are not elite athletes but can still benefit

USE THIS IN YOUR PRACTICE TO:
- Correct even small amounts of astigmatism and ensure Rx accurate
- Look out for opportunities to work with local teams at a level appropriate to your skills and equipment
- Set realistic expectations and know your limitations!
The effect of exercise on the cornea and contact lens wear
Dr Martin Cardall

- After cosmesis, sport is the primary reason for patients requesting CLs
- Almost all CL wearers who do sport use their CLs during sport (94%)
- 58% of patients were not asked at their last eye test if they played sport
- 51% of CL users wear CLs for swimming and only a third use goggles
- Tested ocular surface temperature (OST) with three CL types (HEMA, lotrafilcon and nelfilcon) in 12 subjects, before and after exercise
- Some evidence that CL material influenced OST during exercise; less temperature change with SiH lens
- No change in VA, contrast sensitivity or ocular redness on exercise

USE THIS IN YOUR PRACTICE TO:

- Ask each patient about individual sports participation and needs
- Advise that contact lenses are the number one choice for athletes
- Choose the optimum lens type for a given sport – daily disposables offer many advantages and are often the best option