

## LETTER TO THE EDITOR

### **Ethically we can no longer sit on the fence?**

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**To the Editor:** We would like to comment on the review article by Shuttleworth - Edwards *et al* "Ethically we can no longer sit on the fence – a neuropsychological perspective on the cerebrally hazardous contact sports", published in the July edition of your *Journal*.

Overall, this article is well researched and written. However, as well as highlighting a number of important observations made in this article, we would like to emphasise the progress that has been made in developing a community-based return to play concussion programme in South Africa thus illustrating that a high level of care can be sourced for patients with concussion wishing to return safely to collision and contact sports.

1. It must be noted that computerised and detailed neurocognitive assessment has no role to play in the prevention of head injury in sport. Athletes participating in contact / collision sports are at risk of head injury and the role of mouthguards and headgear are controversial in head injury prevention. Neurocognitive assessment does however, form a component of the return to play management of the injured patient.
2. Due to a paucity of clinical signs, concussion management and return to play must focus on the cognitive, emotional and behavioural effects of the injury, emphasising again the significant individual variation to this injury. It is also well illustrated how gender differences too are an important consideration, in addition to underlying genetic factors. We would agree with the authors that attributing the social ills of society to mild traumatic brain injury on a cause and effect basis would not be reasonable.
3. The cognitive reserve theory could be a reasonable way of explaining the individual variant in recovery time after injury.
4. We have refined our clinical approach, based on research and our experience in managing this injury that encompasses individual differences in response to concussion. By focussing on serial symptom analyses, clinical evaluations, neurocognitive testing – both computerized screening and detailed clinical assessments and then finally an exercise challenge, we believe we would be in the best position to support a decision for the patient to return to sport. The third component of exercise challenge has been very important and provides support for the "hypoxic theory" as detailed by Ewing *et al*.<sup>1</sup> The proposal of informed consent is an excellent one and should be incorporated into any sports education programme and certainly into a return to play concussion programme.
5. Finally and most importantly we wish to illustrate that, as sports physicians who come into contact with mild traumatic brain injury on a weekly and often daily basis, we believe that we are incorporating the latest in international clinical consensus 5, 6, 7 together with computerized neurocognitive assessments and individualized return-to-play guidelines in a cost-effective, pragmatic model. In the last three years, we have developed a community-based concussion programme, incorporating satellite return to play concussion centres, under the banner of the Pharos Schools

Concussion programme and Sports Concussion South Africa 2, 3, 4. The programme has a number of equally important foci:

- i) Education – this we believe to be key; if the sporting public are aware of the significance of concussion and its potential consequences, we believe the risks to be significantly reduced; to this end, the website [www.sportsconcussion.co.za](http://www.sportsconcussion.co.za) has become the central reference tool aiming at educating the public and medical fraternity alike; in addition we have a concerted programme of lectures to schools and clubs aimed at educating pupils, parents and coaches; a campaign to utilise various media including the press, radio and television is also launched annually at the beginning of the schools' rugby season; at this stage of the season we would also introduce the concept of computerised neuropsychological testing and stress the significance of obtaining baseline data.
- ii) Acute management – identifying a concussed player, removing them from the field of play and conducting an initial analysis are important first steps; the Pharos Programme incorporates this by distributing modified versions of the Sports Concussion Assessment Tool (SCAT) to participating schools; the helpline 084-BRAIN24 launched in conjunction with an emergency service call centre advises as to where to obtain medical assistance and the importance of clinical follow-up.
- iii) Serial clinical assessment – once a case of concussion has been identified, this is an essential step in determining return to play; players undergo a thorough symptom analysis and trends in symptom resolution are tracked; a neurological assessment including verbal cognitive and balance tests is conducted; finally, if appropriate, computerised neuropsychological tests are conducted and compared to baseline or age-appropriate norms; we concur with the view of the American College of Sports Medicine that computerised neuropsychological testing is *desirable* in concussion management rather than *essential* 7; moreover, contrary to Shuttleworth-Edwards and Whitefields' assertion that "for best practice in the implementation of return-to-play ... decisions... registered psychologists are called for...", we believe this to be impractical, both due to the scarcity and inaccessibility of such resources and the fact that computerised test batteries are designed for team physicians to implement and integrate into their management protocol of a concussed player 8.
- iv) Return-to-play – this is conducted in a progressive fashion using graded exercise stress to confirm complete resolution of pathology before full sports participation; again the progress will be individualised and poor prognostic indicators such as previous concussions and co-morbid pathology taken into account.

In summary, we acknowledge the impetus that computerised neuropsychological testing has given to sports concussion management and research. Realistically and practically though, this can only form one part of a clinically-orientated serial assessment of the concussed athlete that takes cognisance of both those that have access to this facility and the many (particularly in South Africa) that don't. As sports physicians we see ourselves as foot soldiers in the educational drive and clinical facilitation process of managing mild traumatic brain injury in sport. We are determined to drive a nationally-focussed programme of international calibre. The last thing we will do is sit on the fence.

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