Consensus statement on concussion in sport: the 4th International Conference on Concussion in Sport held in Zurich, November 2012

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PREAMBLE
This paper is a revision and update of the recommendations developed following the 1st (Vienna 2001), 2nd (Prague 2004) and 3rd (Zurich 2008) International Consensus Conferences on Concussion in Sport and is based on the deliberations at the 4th International Conference on Concussion in Sport held in Zurich, November 2012.1,2,3

The new 2012 Zurich Consensus statement is designed to build on the principles outlined in the previous documents and to develop further conceptual understanding of this problem using a formal consensus-based approach. A detailed description of the consensus process is outlined at the end of this document under the Background section. This document is developed primarily for use by physicians and healthcare professionals who are involved in the care of injured athletes, whether at the recreational, school, college or national level.4

SECTION 1: SPORT CONCUSSION AND ITS MANAGEMENT
The Zurich 2012 document examines the sport concussion and management issues raised in the previous Vienna 2001, Prague 2004 and Zurich 2008 documents and applies the consensus questions from section 3 to these areas.1-3

Definition of concussion
A panel discussion regarding the definition of concussion and its separation from mild traumatic brain injury (mTBI) was held. There was acknowledgment by the Concussion in Sport Group (CISG) that although the terms mTBI and concussion are often used interchangeably in the sporting context and particularly in the US literature, others use the term to refer to different injury constructs. Concussion is included in the mTBI injury spectrum.
2012 London Paralympics
Willick et al (BJSM 2013)

14/633 injuries to head and face

2.2 %
2010 Vancouver Paralympics
Webborn et al (CJSM 2012)
- Sledge hockey: 118 athletes, 40 presented re injury, 2 head injuries (not defined specifically as concussion)
- Alpine: 194 athletes, 42 presented re injury, 3 new head injuries
- Nordic: 140 athletes, 26 presented re injury, 1 concussion
2014 Sochi Paralympics
Derman et al (BJSM, 2016)
Head, face and neck injuries
31/174 injuries
26/134 athletes with an injury (4.8 %)
Incidence rate (IR) 4.7 injuries/1000 athlete days
London 2012 football
Webborn et al (PM&R 2015)

Head and face injuries

- 5 a side: 3/22 injuries (13.6% of all injuries)
- 7 a side: 1/14 injuries (7.1% of all injuries)
Brazilian 5 a side football players

- 13 international athletes
- Head injuries 8.6% of all injuries
Concussions in wheelchair basketball
Wessels et al (Arch Phys Med Rehab 2012)

263 US wheelchair basketball players aged 18-60

- 6.1 % of players reported concussion in 09-10 season
- 44 % did not report to team staff
- 67 % of these because they did not want to be removed
- 50 % did not know it was a concussion
- Females had 2.5X higher concussion rate, but limited number of females
- Regular wheelchair users had less concussions
What is the SCAT3?*

The SCAT3™ is a standardized tool for evaluating the injured athlete for concussion and can be used in athletes aged from 12 years and older. It supersedes the original SCAT and the SCAT2 which were in used since 2001, respectively. For younger patients, aged 5-11 years old, please see the alarm bells. The SCAT3 is designed to be a comprehensive tool for assessing concussive symptoms and includes several additional tests that are not included in the original SCAT. Please see the alarm bells. The SCAT3 is a standardized tool that is used by medical professionals. The SCAT3 should be used only by medical professionals who have been trained to use it.

What is a concussion?*

A concussion is a brain injury caused by a fall, a hit, or a blow to the head. It results in a variety of symptoms, such as headaches, dizziness, memory problems, and irritability. Concussions can be caused by a single blow or by repetitive blows to the head. The athlete may have a concussion even if they are not diagnosed immediately. A concussion can be caused by a single blow or by repetitive blows to the head. The athlete may have a concussion even if they are not diagnosed immediately.

SIDELINE ASSESSMENT

Indications for Emergency Management

- Glasgow Coma Scale (GCS):<br> 3 1 5
- Motor response: 1 2 3
- Verbal response: 1 2 3
- Best motor response (BM):<br> Flexion of arm, 3
- Extension of arm, 2
- Abduction of arm, 1
- Best verbal response (BV):<br> Sustained, 3
- Interference with speech, 2
- Inability to speak, 1
- GCS score:
  - < 9: Immediate medical attention is required. 
  - 10-13: A repeat examination is recommended.
  - 14-15: No further medical attention is required.

Potential signs of concussion:

- Any sign of confusion?
- Nausea or vomiting?
- Inattention or difficulty concentrating?
- Dizziness or loss of balance?
- Memory or concentration problems?
- Headache?
- Loss of consciousness?
- Slackness in the lower limbs?

Maddocks Score:

Maddocks is a test used to determine the likelihood of a concussion. A score of 1 or 2 indicates a low likelihood, while a score of 3 or 4 indicates a high likelihood.
Glides (warmup)

- 3 glides between blue lines
- 3 spin in turns dragging inside arm
Injury prevention

The “3E” model

- Education
- Engineering
- Enforcement
KNOWLEDGE IS GREAT
BRITAIN

Quatre des dix meilleures universités au monde sont en Grande-Bretagne.
MIND THE GAP
Obrigado!