

Head Injuries in Sport

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Concussion

Concussion is common in collision & contact sports, and is estimated to account for between 1 to 4% of all field hockey injuries. Most often, concussion is mild and causes only short-term impairment. It occurs when a direct or indirect impulsive force is transmitted to the head, and results in a transient impairment of brain function. Symptoms usually occur at the time of injury, but can develop over a number of minutes to hours.

The signs and symptoms of concussion are not always obvious. If there is witnessed impact, or the player is seen to be holding the head or neck, they should be carefully assessed on the field, or preferably removed for assessment.

Suspect concussion if the player:

A. Complains of symptoms of:

1. Headaches or neck pain
2. Dizziness
3. Feeling 'foggy' / 'not right in the head' / having had their 'bell rung'
4. Memory problems
5. Blurry / double vision; sensitive to light
6. Excessive fatigue

B. Shows signs of:

1. Unsteadiness
2. Confusion / abnormal behavior
3. Nausea / vomiting
4. Vacant stare / inability to focus
5. Delayed responses; slurred / incoherent speech
6. Excessive drowsiness
7. Altered emotions / irritability / anxiety

Any player with suspected concussion should be removed from practice or play, and assessed by a medical professional if one is present. The player should not be allowed to return to the field on the day of injury. This is particularly important for children. Physical exertion

after concussion is likely to lead to a worsening of the condition. Any player attended on the field who is unconscious should be assumed to have a neck injury, and all necessary precautions taken.

The concussed player should:

- not be left alone;
- be monitored by a responsible adult for at least a few hours;
- only be sent home under adult supervision;
- not drive a motor vehicle;
- avoid alcohol or sleeping tablets.

If their symptoms worsen, they should be assessed at an emergency department or by a medical practitioner with expertise in concussion management:

Signs and symptoms indicating the need for prompt medical assessment:

1. Increasing headache;
2. Very drowsy / cannot be easily awakened;
3. Cannot recognize people or places;
4. Significant nausea or persistent vomiting;
5. Unusual behavior; increasing confusion or irritability;
6. Development of seizures;
7. Weakness or numbness in the arms or legs;
8. Severe neck pain;
9. Persistent slurred speech or unsteadiness on feet.

Management of the Concussed Player

Headaches can be treated with paracetamol (panadol), otherwise medical advice should be sought before taking other medications to treat the symptoms of concussion. Aspirin or anti-inflammatory medications should be avoided.

In the first two to three days after injury, complete physical and mental rest is recommended. This means no exercise, and avoiding any activity requiring concentrated mental effort, such as school and computer

work, playing video games, etc.

The effects of concussion will generally settle within one to two days, though it is not unusual for symptoms to last up to 7 to 10 days. For 10% to 15% of people, they can last beyond 10 days.*

Regardless of whether or not the player sees a doctor at the time of injury, they should be assessed by a physician with expertise in the management of concussion before returning to training or play. It is recommended that a step-wise programme of gradual return to activity is followed before return to play. Moderate to intense physical exertion should not be undertaken for a minimum of one week. Children and adolescents are slower to recover, so should be given longer on the sidelines.

Rehabilitation

*The symptoms of concussion settle for most people within one to two weeks. However, according to *Sports Concussion Australasia (SCA)*, 1 in 5 athletes have ongoing balance problems for three months. SCA recommend 'vision and balance training' for concussed athletes. This can be commenced within 72 hours of the injury, and should be continued for 4 weeks. Contact us for if you would like to know more about vision and balance training.

Further information on concussion is available from:

- The 'Sport Concussion Recognition Tool'
- Sports Concussion Australasia website
- Sydney Children's Hospital Website:
<http://www.sch.edu.au/health/factsheets/joint/?brain-nervous-system/mild-head-injury-and-concussion>

References:

1. McCrory, P et al (2013). Consensus statement on concussion in sport: the 4th International Conference on Concussion in Sport held in Zurich, November 2012. *BJSM*, 47, 4, 250-260.
2. Putukian, M et al (2013). On-field assessment of concussion in the adult athlete. *BJSM*, 47, 4, 285-289.
3. Solomon, G et al. *The Heads-up on Sport Concussion. Human Kinetics*, 2006.
4. Sports Concussion Australasia lecture Feb 2013 – Critical Role of the Physiotherapist in Concussion Care.
5. Sport Concussion Assessment Tool, 3rd ed. (SCAT3).

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