



BCSSA Concussion Protocol

Medical Personnel

The term "medical personnel" within this document shall refer to a Level 3 Occupational First Aid attendant or a person with equivalent or higher training. The medical personnel must have the training specific to concussion evaluation at the field of play and must be comfortable using the Concussion Recognition Tool. The medical personnel will not be a coach or an official of the meet.

Concussions

A Concussion is a brain injury and is defined as a complex pathophysiological process affecting the brain, induced by biomechanical forces. Several common features that incorporate clinical, pathologic and biomechanical injury constructs that may be utilized in defining the nature of a concussive head injury include:

1. Concussion may be caused either by a direct blow to the head, face, neck or elsewhere on the body with an "impulsive" force transmitted to the head.
2. Concussion typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously. However, in some cases, symptoms and signs may evolve over a number of minutes to hours.
3. Concussion may result in neuropathological changes, but the acute clinical symptoms largely reflect a functional disturbance rather than a structural injury and, as such, no abnormality is seen on standard structural neuroimaging studies.
4. Concussion results in a graded set of clinical symptoms that may or may not involve loss of consciousness. Resolution of the clinical and cognitive symptoms typically follows a sequential course. However, it is important to note that in some cases symptoms may be prolonged.
5. Concussion may present in one or more of the following ways:
 - a. Symptoms—somatic (e.g., headache), cognitive (e.g., feeling like in a fog) and/or emotional symptoms (e.g., lability)
 - b. Physical signs (e.g., loss of consciousness (LOC), amnesia)
 - c. Behavioral changes (e.g., irritability)
 - d. Cognitive impairment (e.g., slowed reaction times)

Field of Play Evaluation of Acute Concussion

Field of play evaluation may occur on-field (i.e. on ice) or on the sideline (i.e. off ice). Evaluation of a concussion will be carried out exclusively by the designated medical personnel (as defined in the *British Columbia Speed Skating Association (BCSSA) Medical Requirements/Protocol for Speed Skating Events in BC* document). There are three indications for a concussion evaluation to be initiated:



1. The medical personnel initiate the evaluation due to their own suspicion of a possible concussion, based on mechanism of injury; and/or
2. Any official requests an evaluation; and/or
3. The skater or the skater's own support team (parent/guardian, coach, and team manager) requests an evaluation.
4. If the skater, parent/guardian/ or the skaters coach/manager refuses the concussion evaluation, the skater will not be allowed to skate/compete within said meet.

The protocol for an evaluation of an acute concussion will be as follows: the skater should be evaluated by the medical personnel using standard emergency management principles and particular attention should be given to excluding a cervical spine injury. Once the first aid issues are addressed, an evaluation of the concussive injury should be made using the Concussion Recognition Tool or other similar assessment tools. If the skater, parent/guardian or the skaters' coach/manager refuses the evaluation, the skater will not be allowed to skate/compete within said meet.

After Field of Play Concussion Evaluation

If a concussion is suspected by the medical personnel after the field of play evaluation for concussion, the skater will be removed from the meet. The skater will be provided with the "BCSSA Suspected Concussion Form" summarizing the results of the evaluation a copy of the form will be sent into the BCSSA head office and kept on file. The skater must be sent for assessment by a physician or other medical personnel trained in concussion protocols. The skater should not be left alone following the injury and serial monitoring for deterioration is essential over the initial few hours following injury.

The skater will not be allowed to return to the meet unless a physician's note clearing the skater for Return to Play (RTP) has been obtained. It is not within the scope of this document to outline the RTP protocol for an athlete. If a suspected concussion has been ruled out by the medical personnel the skater may return immediately to active participation in the meet.

On Ice Officials

It is not the job of the on ice officials to determine if the skater has a concussion. Concussions can be complex to determine and can be screened by certain tests performed at the field of play by qualified medical personnel (the medical personnel definition will be determined by the *British Columbia Speed Skating Association (BCSSA) Medical Requirements/Protocol for Speed Skating Events in BC*). However, on ice officials are recommended to obtain knowledge in ascertaining if someone may have a concussion after an on ice event/accident.

Here are some examples as to what protocol should occur after an on ice event/accident:

1. Skater falls into the corner by him/herself with little or no impact. Skater gets up with no incident and skates to the finish line. Referee blows the end of race.
2. Skater falls with many other skaters into the mats. Skater gets up with no incident and skates to the finish line. Referee blows the end of race.

3. Skater falls and smacks their head/helmet on the ice. Skater gets up slowly and skates to the finish line. Race is not blown down. Referee asks the skater to be seen by the medical personnel after the race.
4. Skater falls with significant impact into the mats, the head/neck is seen to whip into the mats. The skater gets up and shakes their head several times and finishes the race. Race is not blown down. Skater is asked to be seen by the medical personnel after the race.
5. Skaters have a heavy fall and takes 3 skaters into the mats, two skaters land head first. The referee calls the race for "safety". The ref may ask, "How do you both feel? Where are you? What is your name?" the skaters say; "fine". The race starts right away. At the end of the race the referee asks the two skaters to be seen by the medical personnel.
6. A skater takes a fall into the mats and whacks their head on the ice, the race is called for injury. The skater is escorted off the ice. The medical personnel are asked to see the skater immediately.
7. A skater is seen to take a heavy fall into the mats. The skater is seen to stagger to their skates and stumbles around on the ice. The race should be called for injury. The skater is escorted off the ice. The skater is seen by the medical personnel immediately.

Citations

1. Red Book SSC 2014
2. ISU Special Regulations & Technical Rules, ST Speed Skating 2014
3. ISU Constitution and General Regulations 2014
4. FVPQ Competition Medical Protocol 2013-2014 (Translated from French)
5. <http://www2.worksafebc.com/Publications/OHSRegulation/WCBStandards.asp?ReportID=33295>
6. WCB Standard OFA1: Certification of Occupational First Aid Attendants Issued March 30, 2004; Revised November 1, 2004; Revised January 1, 2010
7. <http://www2.worksafebc.com/Publications/OHSRegulation/Part3.asp>
8. <http://www.speedskating.ca/resources/safety/concussions-brain-injuries>
9. <http://www.parachutecanada.org/thinkfirstcanada>
10. Consensus statement on concussion in sport: the 4th International Conference on Concussion in Sport held in Zurich, November 2012; McCrory P, et al. *Br J Sports Med* 2013;47:250–258. doi:10.1136/bjsports-2013-092313
11. British Journal of Sports medicine: <http://bjsm.bmj.com/>
12. American Medical Society for Sports Medicine position statement: concussion in sport, Kimberly G Harmon, Jonathan A Drezner, Endorsed by the National Trainers' Athletic Association and the American College of Sports Medicine; *Br J Sports Med* 2013;47:15-26 doi:10.1136/bjsports-2012-091941
13. Knowledge about sports-related concussion: is the message getting through to coaches and trainers?; Peta E White, Joshua D Newton, *Br J Sports Med* 2014;48:119-124 doi:10.1136/bjsports-2013-092785