

Concussions: Recognition and Assessment



Due to the ever-present risk and potentially serious consequences of head injuries, coaches and parents should be able to recognize signs and symptoms associated with them in order to act appropriately. This article discusses concussions ranging from mild to severe and graded accordingly I through III. Brain injury may not be immediately apparent following a concussion. Depending on the extent of the injury, an athlete's condition can deteriorate, either slowly or quickly, to a higher grade. Several signs and symptoms when observed will alert the coach/parent of the presence and degree of injury. This will help ensure that proper medical attention is received, thus preventing the athlete's condition from worsening.



The first steps to be taken in assessing an athlete who may have sustained a concussion are obtaining a history of the injury and observing for signs associated with head injuries. Questions should address whether the athlete experienced or is experiencing any of the following: a blackout or unconsciousness of any duration, blurred vision, nausea, dizziness, ringing in the ears, headache or any other pain, unsteadiness or balance difficulties. Ask if they have sustained any head injuries previously as the extent of injury and durations of symptoms increases with repeated concussions. This will be a factor in returning to activity. Test their memory regarding events which occurred both before and after the head injury. Ask them to remember three words, numbers, or colors and have them repeat them to you then again five minutes later.

Signs which may indicate a concussion include: the pupils—check to see if they are equal in size; if a penlight is available see if they are equally responsive to light. Also observe tracking by having the athlete follow your finger up and down, and side to side without moving the head. Any involuntary back and forth, up and down, or rotary movement indicates a possible head injury. Observe for any disorientation or garbled speech. Check for any fluid discharge from the head, ears, nose, and mouth, as well as any swelling, deformity, or discoloration especially behind the ears and around the eyes as this appears with skull fractures. Note the breathing pattern for any abnormalities such as hyperventilation. Concussions of grade II or more can produce balance difficulties. Have the athlete stand with feet together, arms at sides, eyes closed. Any swaying is a positive sign of a balance disturbance. Once the information from the history and observation have been collected the presence of a concussion can be determined and its severity estimated.

First degree, or mild concussions present with the following: momentary mental confusion, mild dizziness, ringing in the ears, and headache. There will be no loss of consciousness or memory, balance disturbance, blurred vision, or pupillary discrepancy. The athlete must be removed from the game and examined every five minutes for 20 minutes. After 20 minutes the athlete may be allowed to return to play provided all symptoms have completely disappeared. A second grade I in the same game mandates the player removal from competition.

Second degree, or moderate concussions, along with the first degree symptoms, may present with a brief loss of consciousness, slight amnesia of events before the injury, nausea, moderate unsteadiness, blurred vision, and/or a pupil discrepancy. Athletes who sustain this injury must be removed from competition and not allowed to return. After being examined by a physician their return to practice may be permitted if they remain symptom-free for one week. This is dependent on the physician's discretion and his/her clearance must be obtained.

Third degree concussions are considered severe and involve prolonged unconsciousness, amnesia, confusion, intense dizziness, ear ringing, headache, and balance difficulties. This is treated as a medical emergency. The athlete should be transported by ambulance to a hospital for a thorough neurological evaluation.

Due to the fact that even mild concussions can gradually deteriorate to a higher grade, all athletes who sustain any degree of concussion should be seen by a physician. Since it may take several hours before symptoms become apparent, close observation should be maintained until the athlete can be seen. This may require waking them up every few hours through the night to ensure their condition does not change.

On a preventative note, making sure helmets carry the stamp of approval from the Canadian Standards Association (CSA), and the use of mouthguards will reduce both the risk and severity of injury. For additional information concerning head injuries you may call the Colorado Head Injury Foundation, Inc. at (303) 761-8552.

Dan Brow is an athletic trainer at American Rehabilitation Network in Southgate, MI and also works for the Detroit Freeze and Little Caesar's Midget Major hockey clubs.

Due to the fact that even mild concussions can gradually deteriorate to a higher grade, all athletes who sustain any degree of concussion should be seen by a physician.