

USA Hockey Concussion Management Program

Michael Stuart MD
Alan Ashare MD

A concussion is a traumatic brain injury- *there is no such thing as a minor brain injury.*

A player does not have to be “knocked-out” to have a concussion- *less than 10% of players actually lose consciousness.*

A concussion can result from a blow to head, neck or body. Concussions often occur to players who don't have or just released the puck, from open-ice hits, unanticipated hits and illegal collisions.

The youth hockey player's brain is more susceptible to concussion. In addition, the concussion in a young athlete may be harder to diagnosis, takes longer to recover, is more likely to have a recurrence and be associated with serious long-term effects.

Diagnosis

Players, coaches, parents and health care providers should be able to recognize the symptoms and signs of a concussion:

Symptoms

- Headache
- Nausea
- Poor balance
- Dizziness
- Double vision
- Blurred vision
- Poor concentration
- Impaired memory
- Light Sensitivity
- Noise Sensitivity
- Sluggish
- Foggy
- Groggy
- Confusion

Signs

- Appears dazed or stunned
- Confused about assignment
- Moves clumsily
- Answers slowly
- Behavior or personality changes

- Unsure of score or opponent
- Can't recall events after the injury
- Can't recall events before the injury

Management Protocol

1. If the player is unresponsive- call for help & dial 911
2. If the athlete is *not breathing*: start CPR
 - ✓ DO NOT move the athlete
 - ✓ DO NOT remove the helmet
 - ✓ DO NOT rush the evaluation
3. Assume a neck injury *until proven otherwise*
 - ✓ DO NOT have the athlete sit up or skate off until you have determined:
 - no neck pain
 - no pain, numbness or tingling
 - no midline neck tenderness
 - normal muscle strength
 - normal sensation to light touch
4. If the athlete is conscious & responsive without symptoms or signs of a neck injury...
 - help the player off the ice to the locker room
 - perform an evaluation
 - do not leave them alone
5. Evaluate the player in the locker room:
 - Ask about concussion *symptoms* (How do you feel?)
 - Examine for *signs*
 - Verify *orientation* (What day is it?, What is the score?, Who are we playing?)
 - Check *immediate memory* (Repeat a list of 5 words)
 - Test *concentration* (List the months in reverse order)
 - Test *balance* (have the players stand on both legs, one leg and one foot in front of the other with their eyes closed for 20 seconds)
 - Check *delayed recall* (repeat the previous 5 words after 5-10 minutes)
6. A player with any symptoms or signs, disorientation, impaired memory, concentration, balance or recall has a concussion.

“When in doubt, sit them out”

- Remove immediately from play (training, practice or game)

- Inform the player's parents
- Refer the athlete to a qualified health-care professional
- Medical clearance is required for return to play

7. If any of the signs or symptoms listed below develop or worsen: go to the hospital emergency department or dial **911**.

- Severe throbbing headache
- Dizziness or loss of coordination
- Memory loss or confusion
- Ringing in the ears (tinnitus)
- Blurred or double vision
- Unequal pupil size
- No pupil reaction to light
- Nausea and/or vomiting
- Slurred speech
- Convulsions or tremors
- Sleepiness or grogginess
- Clear fluid running from the nose and/or ears
- Numbness or paralysis (partial or complete)
- Difficulty in being aroused

8. An athlete who is *symptomatic* after a concussion requires complete ***physical*** and ***cognitive rest***.

- A concussed athlete should not participate in any physical activity, return to school, play video games or text message if he or she is having symptoms at rest.
- Concussion symptoms & signs *evolve over time*- the severity of the injury and estimated time to return to play are unpredictable.

USA Hockey Post-Concussion Functional Return to Play Protocol

This protocol should not be initiated until after the athlete has been released to participate in the functional return to play protocol by a qualified health care provider. ***If symptoms appear during a functional test, the test should be stopped and the athlete monitored until symptoms resolve.*** No further functional testing should be performed that day. Functional testing may resume the following day at the previously asymptomatic level if the athlete remains asymptomatic. If symptoms do not resolve, appropriate medical attention should be obtained.

After each phase of functional testing, the presence of post-concussive symptoms should be assessed and progression to the next phase of functional testing will require the absence of post-concussive symptoms. Each phase requires ***a minimum of 1 day*** before progressing to the next phase.

