13.2

Concussions

Because of the contact nature of the game and the speed with which the game is played, the brain is vulnerable to injury through direct contact with the head or face or through whiplash. Injuries to the brain are characterized by an altered state of consciousness. It is the altered state of consciousness that is the key thing to look for with any head injury.

**Definition:**
- Change in mental state (dizziness, confusion, blank stare)
- Loss of consciousness

**Mechanism:**
- Direct blow to the head (helmet, head, face, jaw)
- Whiplash effect of neck

**Types of Concussions:**

**First Degree**
- “Bell rung”
- Symptoms related to changes in mental state (page 86)
- No loss of consciousness
- Confusion, also called altered state of consciousness (e.g. does not know the score or cannot remember what happened)
- Should not return to play without a physician’s approval.
- If symptoms persist beyond 15 minutes then it becomes a second degree concussion and requires immediate referral to a physician and at least one week of symptom free rest.
Second Degree

- Loss of consciousness (does not open eyes, or if open cannot seem to focus; does not answer to name; may be limp)
- Loss of consciousness may only last for seconds but is still considered serious and must result in removal of the player from play.
- There may be no loss of consciousness, but symptoms last longer than 15 minutes.
- Player needs to be seen immediately by a physician and given a thorough neurological examination.
- Player may need to be hospitalized.
- Player should not return to play until cleared by a physician, and totally symptom free at rest and while exercising.

Note: symptoms may reoccur soon after the player returns to regular activity. If any symptom reoccurs player should be pulled and re-evaluated by a physician.

Immediate Symptoms and Signs (on the sideline)

- “Bell Rung”
- Headache
- Dizziness (light headedness)
- Seeing stars or lights (imbalance to light)
- Vacant stare
- Disoriented (unaware where he/she is)
- Delayed response to a question
- Confusion and easily distracted
- Slurred speech
- Poor coordination
- Memory deficit (asks same question several times because the answer is not remembered)
- Nausea, vomiting

ANY ONE OF THESE SIGNS OR SYMPTOMS IS ENOUGH TO REMOVE A PLAYER FROM ACTION.

Care

- Always assume neck injury; stabilize the head and neck
- Activate the E.A.P. if the player is unconscious
- Check A (Airway), B (Breathing), C (Circulation) and continue to monitor the A, B, C’s if unconscious
• Never give players aspirin, Tylenol or other medications
• Any player who has suffered a concussion should be seen by a physician. In the case of a second degree concussion, immediate referral is required.
• Notify a parent or guardian of any player with a concussion.

Return to Play

Return to play following a concussion follows a stepwise process. **This process only begins after a physician has given the player clearance to return to activity. If any signs/symptoms return during this process then the player must be re-evaluated by a physician.**

1. No activity, complete rest. Proceed to step 2 only when symptoms are gone and a physician has given the player clearance.

2. Light aerobic exercise such as walking or stationary cycling. Monitor for symptoms.

3. Sport specific training (e.g. skating).

4. Non-contact drills

5. Full contact practices.

6. Game play.

Note: Player should proceed through the steps only when it has been demonstrated that there is no return of symptoms. This includes long term symptoms such as; fatigue, irritable behaviour or sleep disturbance. If any symptoms return the player should drop down to the previous level and **must be re-evaluated by a physician.**

REMEMBER

A second concussion on top of the first concussion can lead to substantially more damage than one concussion alone. The effect of concussions is cumulative and the end result of several concussions could be the end of a player’s career if not properly managed. Sufficient time must be allowed between the concussion and return to play because the risk of a second concussion and its effects are too great. Parents should always be instructed to advise the physician that there has been more than one concussion.

Prevention

**Players**

• Make sure your helmet fits snugly
• Get a custom fitted mouth guard
• Respect other players

**Hockey Trainer**

• Discourage checks to the head
• Recognize signs and symptoms of concussion
<table>
<thead>
<tr>
<th>First Degree</th>
<th>Second Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“Bell rung”</strong></td>
<td><strong>Loss of consciousness</strong></td>
</tr>
<tr>
<td>No loss of consciousness</td>
<td>Loss of consciousness may only last seconds</td>
</tr>
<tr>
<td>Confusion (altered state of consciousness less than 15 minutes)</td>
<td>No loss of consciousness, but signs and symptoms of first degree remain or progress after 15 minutes</td>
</tr>
<tr>
<td>Headache</td>
<td></td>
</tr>
<tr>
<td>Dizziness</td>
<td></td>
</tr>
<tr>
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<td>Memory deficit</td>
<td></td>
</tr>
<tr>
<td>Nausea or vomiting</td>
<td></td>
</tr>
</tbody>
</table>

**Continuation of**

- Confusion
- Seeing stars or lights
- Vacant stare
- Disoriented
- Delayed response to a question
- Slurred speech
- Poor coordination
- Memory deficit
- Nausea or vomiting

**Care**

- Always rule out neck injury
- Stabilize head and neck if necessary
- Remove from play
- Refer to a physician
- Notify parent or guardian
- Do not administer aspirin or Tylenol

**No return to play without a physician’s approval and symptom free at rest and during exercise.**

**Care**

- Always rule out neck injury
- Stabilize head and neck if necessary
- Activate the E.A.P. if player is not conscious and check A, B, C’s
- Remove from play
- Immediate referral to a physician
- Notify parent or guardian
- Do not administer aspirin or Tylenol

**No return to play without a physician’s approval and symptom free at rest and during exercise.**