Hockey Ireland Sports Related Concussion Guidelines

Hockey Ireland is aware of the significant risks associated with sports related concussion which extends beyond the immediate effects of an acute head injury. The long-term impacts of head injury and concussion can be minimised with appropriate immediate and long-term care. Given that most hockey games in Ireland and around the world are played without dedicated pitch-side medical or first-aid support, these guidelines are designed to assist players, coaches, umpires, and families in recognizing, responding and effectively managing concussions.

Guidelines Summary

- *Sport-related concussion is a traumatic brain injury caused by a direct blow to the **head, neck or body** resulting in an impulsive force being transmitted to the brain that occurs in sports and exercise-related activities.*

- Concussion needs to be taken seriously to protect the long-term welfare of all players.

  If the symptoms / signs of concussion are not recognised this can lead to prolonged recovery or a more serious brain injury.

- Any player suspected of sustaining a concussion, should be immediately safely removed from the field of play and should not return to play or train on the same day. They should be advised to seek medical assessment in a timely manner.

- Less than 10% of concussions involves loss of consciousness.

- Concussion is an evolving injury. The player must not be left alone, and it is important to monitor the player after the injury for any evolving symptoms or signs particularly in the first 24 hours.

- Players should be advised not to drive or drink alcohol for a minimum of 24 hours.

- Early physical and mental activity treats symptoms and helps recovery.

- Players should follow a graduated return to play protocol and should receive medical clearance by a healthcare professional before returning to contact sports.

- Symptoms usually resolve over days and most players are symptom free in 10-14 days. Younger athletes often take longer. -No two concussions are the same and the symptoms and recovery can vary greatly from one player to another.

  Concussion is treatable and from the early stage it is important to manage concussion

appropriately.

What is Concussion?

- Concussion is a traumatic brain injury and can be caused by a direct or indirect impact to the player's head, neck, or body. Concussion typically results in an immediate onset of temporary signs and symptoms. However, in some cases, the signs and symptoms of concussion may evolve over several minutes, hours or even days.

- Loss of consciousness occurs in less than 10% of concussion cases.
- Concussion in hockey typically occurs if a player is involved in a collision with another player or hit in the head with a hockey stick or ball.

- Not all head injuries are concussions. Some result in superficial injuries to scalp or face such as lacerations and abrasions.
- A more serious head and neck injury can also occur - for example fractured skull or a bleed into or around the brain.

- Below is a list of red flags that may indicate a more serious head or neck injury.
- If any of these are present call an ambulance as the player needs to be medically assessed as soon as possible

- Loss of consciousness (especially greater than 30 secs)
- Severe or worsening headaches
- Seizures
- Significant drowsiness/deteriorating conscious state.
- Difficulty recognizing people/places
- Vomiting (more than once)
- Loss of vision or double vision
- Increasing irritability or significant behavioural change
- Significant neck pain / tenderness
- Weakness, numbness, tingling in the arms/legs (neck injury

If there is any concern that there is a cervical spine injury the player should not be moved and urgent medical/ambulance help called.

Recognising Concussion -Signs and Symptoms

Remember most concussion injuries occur without a loss of consciousness and so it is important to recognise the other signs and symptoms of concussion.
Concussion must be recognised as an evolving injury in the acute stage. Some symptoms develop immediately while other symptoms may appear gradually over time.
Monitoring of players after the injury is therefore an important aspect of concussion management.

Diagnosis of acute concussion involves the following:
1. Symptoms the player will report.
2. Physical signs you may observe.
3. Assessment of the player for signs of cognitive or emotional changes

Players, coaches, healthcare professionals, parents, spectators and umpires should be familiar with the symptoms and signs of a suspected concussion. If a player has ANY of the following, **they MUST be immediately removed from activity and MUST NOT return that day.**

Common Immediate symptoms that the player may tell you
Dizziness
Headache
Nausea or vomiting
Brain Fog- difficulty thinking clearly, unable to focus.
"Doesn't feel right."

Signs of a suspected concussion- from the sideline

- Loss of consciousness
- Seizures
- Falling unprotected
- No movement post injury or slow to get up
- Unsteady on rising or unsteady on feet -stumbling
- Grabbing/Clutching head
- Dazed, blank or vacant look

- Signs of a suspected concussion – when you are with the player

- Confusion
- Not aware of plays or events
- More emotional

Initial Assessment of a Concussion Injury

- The player should be assessed by a doctor or registered healthcare practitioner on the field using standard emergency management principles. Particular attention should be given to excluding a cervical spine injury.

- If no healthcare practitioner is available, the player should be safely removed from practice or play and advised to seek medical care. If there are any red flags an ambulance should be called and the player urgently assessed by a doctor or at the Emergency Department.

- Once the first aid issues are addressed, an assessment of the concussive injury should take place. This may include the use of the concussion recognition tool (CRT 6) * - appendix 1

*The assessment should not be used to determine if a player can go back on the pitch.

- VOMS (vestibular ocular motor screening) is a sensitive and specific tool to aid in detection of concussion to be used by medical personnel. Vestibular Ocular Motor Screening (VOMS) | Concussion Diagnosis. The SCAT 6 (or later version) may also be a useful aid.

- The player should ***NOT*** be left alone and regular observation for deterioration is essential especially over the following 24 hours. They should not drive or consume alcohol.

- Remember delayed symptoms -Players may have no symptoms immediately after the impact but develop symptoms over the following minutes/hours.

Coaches/parents/umpires: YOUR responsibility

- RECOGNISE and REMOVE- You must do your best to ensure that the player is removed from play in a safe manner, if you observe them displaying any of the signs or symptoms of a suspected concussion.

- You must ensure that the player is in the care of a responsible adult and inform them of the player's suspected concussion.

- If they are concussed, you must not allow a player to return to any contact sport until they have completed the Graduated return to Play protocol and they should be assessed by a healthcare professional before return to contact practice/match.

Player: YOUR responsibility:

- If you have symptoms of a suspected concussion, you must STOP playing and inform medical and/or coaching staff immediately.

- Be honest with yourself and those looking after you. **Remember** if you continue playing after a concussion you are more likely to have a delayed recovery.

- If you have suffered a concussion while playing hockey or another sport, you MUST NOT play any contact sport until you have completed the GRTP protocol.

- Before return to contact practice/ match you should be totally symptom free, and it is advisable to be assessed by a healthcare professional.

- Look out for your team mates and report any suspected symptoms/signs of concussion to the coach/umpire. Encourage your team mates to report symptoms if they have a suspected concussion.

Types of Concussion

COGNITIVE/FATIGUE

- Cognitive difficulties include decreased concentration, increased distractibility, difficulty learning/retaining new information, or decreased multitasking abilities. Sometimes accompanied by increased fatigue as the day progresses.

VESTIBULAR

- Impairments of the vestibular system— the balance centre of the brain — affect one's ability to interpret motion, coordinate head and eye movements, or stabilize vision upon head movement.

OCULAR

- Ocular dysfunction occurs when the movement of the eyes in tandem, or binocular eye movement, is affected. This may result in difficulties bringing the eyes together or moving one's eyes to track motion.

MIGRAINE

Post-traumatic migraine symptoms include headaches, nausea and/or sensitivity to light or noise.

ANXIETY/MOOD

This occurs when someone has a hard time turning his or her thoughts off, being particularly ruminative, or suffering from suffering from excessive worry or concern.

Recovery from Concussion and Return to play

- Removal from play immediately if the player is suspected of having a concussion -there is evidence that even playing on for a few minutes delays recovery.

- A player with a suspected concussion should ***NEVER*** be allowed to return to play on the day of injury.

- Seek medical advice and follow a gradual and progressive return to activity.

- Following a Graduated Return to Play protocol ensures players return to play in a safe and efficient manner.

Strong evidence exists regarding the benefits of physical activity and aerobic exercise as early interventions- strict bed rest is not beneficial.

Individuals are encouraged to return to light intensity physical activity in the first 24-48 hours. Reducing screen time in the first 48 hours can be helpful.

Then gradually and progressively increase activity as shown in GRTP protocol.

IMPORTANT -you must be symptom free at rest and after activity before moving to stage 4.

Graduated Return to Play Protocol

Stage		Activity	Aim
1	Symptom limited activity	Walking	Gradual reintroduction to school/work
2	Aerobic exercise	Walk / run bodyweight exercises	Progressive increase of aerobic activity
3	Hockey specific drills with **no** risk of head impact	Shuttle runs/side stepping/individual ball/ stick drills Gradual return to resistance work	Add movement / change of direction
4	Non-contact training drills	Exercise to high intensity and more challenging drills with multiplayer etc	Resume usual intensity of exercise, coordination and increased thinking
5	Full contact practice	Participate in normal training activities	Restore confidence
6	Return to matches	Normal game play	

Before moving to Stage 4 Players must have full resolution of concussion related symptoms and should be assessed by a health care professional

Average recovery from concussion is 14 -21 days and can be longer in children.
There should be a minimum of 14 days to complete GRTP in adults and 21 days in children.

*A shorter timeframe for return to play may be possible is the player is deemed fit by a doctor with expertise in concussion management.

- The time frame for return to sport varies based on a player's individual characteristics (e.g. history of migraine can prolong recovery) and based on players symptoms as they follow the GRTP protocol so may take longer than 14/21 days.

- Players generally should start at <50% intensity for 15-20 minutes and progress systematically.

- Players can continue advancing the intensity and duration of exercise even if there is mild exacerbation of symptoms once the symptoms are not prolonged

- Any player with severe or persisting symptoms should be assessed by a healthcare

professional experienced in concussion management as there are treatments available e.g. vestibular therapy.

During the GRTP protocol

●Avoid alcohol

●Keep hydrated and eat well

●Sleep advice- regular routine/no naps

●Early return to activities of daily living (Return to learning should be completed prior to return to sport)

●Over the days/ weeks after concussion players commonly complain of headache, nausea, dizziness, fatigue and brain fog (difficulty thinking clearly or lack of focus)

●Remember anxiety and low mood are also common but often not discussed. Adolescents and females may be more at risk for these symptoms and players may need additional supports.

●Encourage players to stay in contact with their team which helps with social interactions. Within the first week they will usually be able to take part in elements of the training session but avoid any activities where there is a risk of a head impact.

●Recovery from concussion should not be rushed nor pressure applied to players to resume playing until recovery is complete. Returning too soon may increase the risk of recurrent concussions.

Children

Children and adolescent athletes (18 years and under) with concussion should be managed more conservatively as they tend to:

1. Be more susceptible to concussion

2. Take longer to recover
3. They are more susceptible to the rare but catastrophic effects of second impact syndrome if they return to high-risk activities before fully recovering from the initial concussion.

Return to learning should be a priority.
Children may find they initially need to start with partial school day or with more breaks during the day. The child can gradually progress school activities/ learning until they can tolerate full return to school without more than mild symptom exacerbation.
Return to sport should occur in parallel to this.

Children should receive medical or approved healthcare professional clearance prior to return to contact training/ match.

Recurrent or difficult concussions

Players with:

- a second concussion within 12 months
- a history of multiple concussions
- unusual presentations or
- prolonged recovery
  must be assessed and managed by health care professional with experience in managing sports-related concussion.

The Consensus Statement on Concussion in Sport; 6th International Conference, Berlin, October 2016

UPMC Concussion Network

Dr Judy Dwyer

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Recognise

Learn the signs and symptoms of a concussion so you understand when an athlete might have a potential concussion.

Reduce

Ongoing evaluation of prevention strategies and modifiable risk factors for sports related concussions

Remove

If an athlete has a concussion or even a potential concussion, he or she must be safely removed from play immediately.

Re-evaluate

concussion symptoms may be progressive or not begin until hours after the injury

Refer

Once removed from play, the player should be referred to a qualified healthcare professional who is trained in evaluating and treating concussion

Rest and Exercise

Early return to physical activity -strict rest not recommended.

Rehabilitation

Both physical and psychological.

Recover

Player should follow the GRTP and should be symptom-free prior to progressing to stage 4 of the protocol

Return to Sport

In order for safe return to hockey, the player must be symptom-free and cleared by a healthcare professional.

Reconsider

Concern about long term effects of concussion injuries. Further studies are needed to establish a causal association..

Retire

Given the positive benefits of exercise on health, care must be taken to avoid restricting all activity. All athletes who ultimately retire from contact or collision sports should be encouraged to continue non-contact or low-contact sports.

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CRT6™

Concussion Recognition Tool

To Help Identify Concussion in Children, Adolescents and Adults

What is the Concussion Recognition Tool?

A concussion is a brain injury. The Concussion Recognition Tool 6 (CRT6) is to be used by non-medically trained individuals for the identification and immediate management of suspected concussion. It is not designed to diagnose concussion.

Recognise and Remove

Red Flags: CALL AN AMBULANCE

If **ANY** of the following signs are observed or complaints are reported after an impact to the head or body the athlete should be immediately removed from play/game/activity and transported for urgent medical care by a healthcare professional (HCP):

- **Neck pain or tenderness**
- **Seizure, 'fits', or convulsion**
- **Loss of vision or double vision**
- **Loss of consciousness**
- **Increased confusion or deteriorating conscious state (becoming less responsive, drowsy)**
- **Weakness or numbness/tingling in more than one arm or leg**
- **Repeated Vomiting**
- **Severe or increasing headache**
- **Increasingly restless, agitated or combative**
- **Visible deformity of the skull**

Remember

- In all cases, the basic principles of first aid should be followed: assess danger at the scene, check airway, breathing, circulation; look for reduced awareness of surroundings or slowness or difficulty answering questions.
- Do not attempt to move the athlete (other than required for airway support) unless trained to do so.
- Do not remove helmet (if present) or other equipment.
- Assume a possible spinal cord injury in all cases of head injury.
- Athletes with known physical or developmental disabilities should have a lower threshold for removal from play.

If there are no Red Flags, identification of possible concussion should proceed as follows:

Concussion should be suspected after an impact to the head or body when the athlete seems different than usual. Such changes include the presence of **any one or more** of the following: visible clues of concussion, signs and symptoms (such as headache or unsteadiness), impaired brain function (e.g. confusion), or unusual behaviour.

Developed by: The Concussion in Sport Group (CISG)

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CRT6 Concussion Recognition Tool

To Help Identify Concussion in Children, Adolescents and Adults

1: Visible Clues of Suspected Concussion

Visible clues that suggest concussion include:

- Loss of consciousness or responsiveness
- Lying motionless on the playing surface
- Falling unprotected to the playing surface
- Disorientation or confusion, staring or limited responsiveness, or an inability to respond appropriately to questions
- Dazed, blank, or vacant look
- Seizure, fits, or convulsions
- Slow to get up after a direct or indirect hit to the head
- Unsteady on feet / balance problems or falling over / poor coordination / wobbly
- Facial injury

2: Symptoms of Suspected Concussion

Physical Symptoms
Headache
"Pressure in head"
Balance problems
Nausea or vomiting
Drowsiness
Dizziness
Blurred vision
More sensitive to light
More sensitive to noise
Fatigue or low energy
"Don't feel right"
Neck Pain

Changes in Emotions
More emotional
More Irritable
Sadness
Nervous or anxious

Changes in Thinking
Difficulty concentrating
Difficulty remembering
Feeling slowed down
Feeling like "in a fog"

Remember, symptoms may develop over minutes or hours following a head injury.

3: Awareness

(Modify each question appropriately for each sport and age of athlete)

Failure to answer any of these questions correctly may suggest a concussion:

"Where are we today?"

"What event were you doing?"

"Who scored last in this game?"

"What team did you play last week/game?"

"Did your team win the last game?"

Any athlete with a suspected concussion should be - IMMEDIATELY REMOVED FROM PRACTICE OR PLAY and should NOT RETURN TO ANY ACTIVITY WITH RISK OF HEAD CONTACT, FALL OR COLLISION, including SPORT ACTIVITY until ASSESSED MEDICALLY, even if the symptoms resolve.

Athletes with suspected concussion should **NOT**:

- Be left alone initially (at least for the first 3 hours). Worsening of symptoms should lead to immediate medical attention.
- Be sent home by themselves. They need to be with a responsible adult.
- Drink alcohol, use recreational drugs or drugs not prescribed by their HCP
- Drive a motor vehicle until cleared to do so by a healthcare professional


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