



## Ringette Canada Concussion Management Guidelines

### Context:

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Canadians have a heightened awareness of concussions due to the many high profile athletes that have incurred concussions, the increased media coverage relating to brain injury, and our increased understanding of the consequences of repetitive brain trauma, primarily within professional sports. From this heightened awareness, we know that concussions are very possible within the sport of Ringette.

### Definitions:

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- **Concussion:** An alteration in thinking and behaving as a result of a direct or indirect blow to the head or an impact to the body that causes a sudden severe movement to the head. With a concussion, there is no visible injury to the structure of the brain, meaning that tests like an MRI or a CT scan usually appear normal.<sup>1</sup>
- **CSA certified:** This means the equipment has been tested using process laid out in the Standard developed by the CSA for that specific piece of equipment and meets its requirements.
- **Participant:** Individuals associated with Ringette Canada activities including but not limited to coaches, athletes, volunteers, and officials.

### Purpose:

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Ringette Canada believes that everyone involved with Ringette Canada should take all necessary precautionary steps to prevent and reduce brain injuries, inform themselves as to the signs and symptoms of a concussion, and take accountability around their role in the prevention, identification, and return to health of a Participant suffering from a brain injury.

Accompanying Ringette Canada's *Concussion Policy*, these *Concussion Management Guidelines* provide guidance in identifying signs and symptoms of a concussion, the suggested responsibilities of coaches and other team staff, return to play guidelines, and the reporting mechanisms for instances of possible concussions.

### Scope:

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The *Concussion Policy* addresses the identification and management of a suspected or confirmed concussion, as well as the protocol for Return to Play for any Participant associated within Ringette Canada activities. Ringette Canada is not responsible for diagnosing concussions – this can only be done by a physician – but Ringette Canada can contribute to the immediate identification and management of concussions. Return to Play procedures for Participants suffering from a confirmed concussion should be guided by the health care professional in charge of treatment.

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<sup>1</sup> Parachute website: <http://www.parachutecanada.org/injury-topics/topic/C9>

***"It's better to miss one game than the whole season."***

- U.S. Department of Health and Human Services Centres for Disease Control and Prevention.

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## Awareness:

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Everyone on the ice surface is at risk of suffering a concussion.

- Players
- Coaches and Team Staff
- On-ice officials

It is important to note that:

- Individuals with a previous history of concussion are at a higher risk of concussion<sup>2</sup> and take a longer time to recover<sup>3</sup>
- Females are at higher risk of concussion<sup>4</sup>

## Dangers:

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Failure to recognise and report concussion symptoms or returning to activity with ongoing concussion symptoms sets the stage for:

- **Cumulative concussive injury**

Data suggests that the concussed brain goes through a period of heightened susceptibility to a second injury.<sup>5</sup>

- **Second Impact Syndrome**

Second Impact Syndrome is a rare occurrence and occurs when an athlete sustains a brain injury (concussion or worse) and while still experiencing symptoms (not fully recovered) sustains a second brain injury, which is associated with brain swelling and permanent brain injury or death.<sup>6</sup>

Recurrent brain injury is currently implicated in the development of Chronic Traumatic Encephalopathy (CTE). CTE is a progressive degenerative brain disease seen in people with a history of brain trauma. For athletes who suffered repetitive brain trauma, symptoms include difficulty thinking, explosive and aggressive behaviour, mood disorder, and movement disorder (Parkinsonism). Presently, CTE can only be diagnosed pathologically.<sup>7</sup>

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<sup>2</sup> Zemper ED. Two-year prospective study of relative risk of a second cerebral concussion. *Am J Phys Med Rehabil.* 2003;82 (9):653–9.

<sup>3</sup> Eisenberg MA, Andrea J, Meehan W, Mannix R. Time interval between concussions and symptom duration. *Pediatrics.* 2013;132(1):8-17.

<sup>4</sup> Abrahams S, Fie SM, Patricios J, Posthumus M, September AV. Risk factors for sports concussion: an evidence-based systematic review. *Br J Sports Med.* 2014;48(2):91-7.

<sup>5</sup> Giza CC, Hovda DA. The new neurometabolic cascade of concussion. *Neurosurgery.* 2014;75 Suppl 4:S24-33.

<sup>6</sup> Cantu RC. Second-impact syndrome. *Clin Sports Med.* 1998;17(1):37-44.

<sup>7</sup> Mez J, Stern RA, McKee AC. Chronic traumatic encephalopathy: where are we and where are we going? *Curr Neurol Neurosci Rep.* 2013 Dec;13(12):407.

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## Education:

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Ringette Canada strongly recommends that all athletes, coaches, officials, and parents maintain an updated education of concussion awareness and management.

Ringette Canada is currently (as of July 2016) considering mechanisms for making concussion awareness training *mandatory* for certain Ringette Canada stakeholders.

Particularly, NCCP-certified coaches can expect to soon be required to complete the CAC Making Head Way e-module. Coaches will receive professional development points towards the maintenance of their coaching certification for completing this e-module.

Examples of online Concussion education tools:

- Concussion Awareness Training Tool  
Web-based tools, resources, 30-minute online course (for parents, athletes, and coaches)  
<http://www.cattonline.com/>
- Oregon Center for Applied Science Concussion Education Video  
Simplified short four-minute video (primarily for youth athletes)  
<http://brain101.orcasinc.com/5000/>
- Coaching Association of Canada (CAC) Making Head Way E-Learning  
E-Learning module (primarily for NCCP-certified coaches)  
<http://coach.ca/making-head-way-concussion-elearning-series-p153487>

## Equipment:

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Wearing the proper equipment can help prevent concussions.

- **Players, coaches and on-ice officials**  
All individuals who are required to wear helmets on the ice are expected to wear CSA-certified, properly fitted, and well-maintained equipment. A proper functioning helmet will help reduce the risks of brain injury. Helmets should be examined twice a year for any cracks, loose screws or other breaks that may reduce the effectiveness of the helmet. Helmets that are not CSA-certified, are ill-fitting, or are in any manner altered or broken should never be worn.
- **Other individuals**  
Anyone going on the ice without skates should be wearing a footwear traction device<sup>8</sup> to help prevent injury.

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<sup>8</sup> Arbeau R, Gordon KE, McCurdy G. Mayhem on the ice – Are team officials being injured as a result of their players being injured? Can Fam Physician 2007; 53: 1488-92.

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## Diagnosis:

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Concussions are to be formally diagnosed by health care professionals within their scope of practice and expertise – not by coaches, trainers, team staff, or any other individual associated with Ringette Canada.

If a Participant is showing signs of concussion and/or has been clinically diagnosed as concussed, the coach, administrator and/or supervisor of that Participant will prevent the Participant from participating until the required medical clearance has been provided.

Participants with a suspected concussion must be seen by a physician before returning to play and must follow the Return to Play instructions as outlined in these *Concussion Management Guidelines*.

## Reporting:

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For children or adolescents with suspected concussion not directly transferred for medical management to their parents, coaches must communicate their concerns with the child or adolescent's parent(s) or guardian(s).

It is the responsibility of the individual with a suspected or confirmed concussion or her parents to communicate the player's status to the team staff.

It is the responsibility of the players to communicate to their team staff if a teammate is injured with suspected concussion.

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## Concussion Incidence and Response

### Incident:

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Know the signs and Symptoms of a Concussion:





 THINKING/ REMEMBERING	 PHYSICAL	 EMOTIONAL/ MOOD	 SLEEP DISTURBANCE
<ul style="list-style-type: none"> <li>• Difficulty thinking clearly</li> <li>• Feeling slowed down</li> <li>• Difficulty concentrating</li> <li>• Difficulty remembering new information</li> </ul>	<ul style="list-style-type: none"> <li>• Headache</li> <li>• Nausea or vomiting (early on)</li> <li>• Balance problems</li> <li>• Dizziness</li> <li>• Fuzzy or blurry vision</li> <li>• Feeling tired, having no energy</li> <li>• Sensitivity to noise or light</li> </ul>	<ul style="list-style-type: none"> <li>• Irritability</li> <li>• Sadness</li> <li>• More emotional</li> <li>• Nervousness or anxiety</li> </ul>	<ul style="list-style-type: none"> <li>• Sleeping more than usual</li> <li>• Sleeping less than usual</li> <li>• Trouble falling asleep</li> </ul>

Figure 1 - Concussion Symptoms

Questions to be used in the identification of a Participant with suspected concussion:

1. Was there potential brain trauma?
2. Are there symptoms of concussion (**Figure 1**) such as: headache, dizziness, visual disturbance or nausea (feeling sick), or other symptoms? The more symptoms that are present, the more likely a concussion has occurred.
3. If it is within 24-48 hours of the trauma, has there been any deterioration in the individual's status? For example:
  - Headache getting worse?
  - Sleepy?
  - Unable to recognize people?
  - Repeated vomiting?
  - Behaving unusually or confused?
  - Seizures?
  - Weakness?
  - Unsteadiness or slurred speech?

**At any time when answering these questions: If in doubt, sit them out.**

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## **Post-incident – First 30 minutes:**

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If the Participant is unconscious – initiate the emergency action plan (see **Concussion Emergency Action Plan** template), call 911, and then:

- a) If applicable, contact the Participant’s parent/guardian to inform them of the injury and that the Participant will be attended to by Emergency Medical Services and possibly transported to a hospital
- b) Identify someone to stay with the Participant until Emergency Medical Services arrives
- c) Monitor and document any physical, emotional and/or cognitive changes

If the Participant is conscious – remove the Participant from the activity immediately and then:

- a) Notify the Participant’s parent/guardian (if applicable)
- b) Arrange a ride home for the Participant
- c) Isolate the Participant in a dark room or area
- d) Reduce external stimulus (noise, other people, etc.)
- e) Remain with the Participant until he or she can be taken home
- f) Monitor and document any physical, emotional and/or cognitive changes
- g) Encourage the Participant to consult a physician

Once the Participant has been seen by Emergency Medical Services and/or taken home, a **Concussion Incident Form** is to be completed and submitted to Ringette Canada.

Following the identification of a possible concussion and regardless if the Participant is conscious, an individual (team staff, coach, trainer, etc.) ideally with first aid knowledge and training must remain with the Participant to observe for any signs of deterioration. Any potentially-concussed Participant not immediately transported to hospital should be observed closely for any deterioration for at least 30 minutes. Someone must remain with the Participant until either medical personnel arrive (if required) or until a parent/guardian accepts responsibility for the Participant’s safety and well-being.

## **Post-Incident – First 24 to 48 hours:**

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Problems can still arise over the course of the first 24 to 48 hours. The Participant should be brought to hospital as soon as possible if one or more of the following symptoms appear:

- Worsening headache
- New symptoms
- Increased drowsiness and trouble waking
- Inability to recognize places and people
- Repeated vomiting
- Irritability, confusion, unusual behaviour
- Seizures
- Slurred speech, instability on feet

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## Returning to Play:

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Symptoms of concussion may develop over time following a brain injury.<sup>9</sup> The Participant with a suspected concussion must consult a physician before returning to play.

The Participant and the Participant's parent/guardian (if applicable) should be directed to the following guidelines:

- a) If no concussion is diagnosed by a physician: the Participant may return to physical activities accompanied by a medical clearance letter confirming that the Participant is medically cleared to resume participation
- b) If a concussion is diagnosed by a physician: the Participant should only return to physical activities after following the steps outlined below and/or as directed by a physician:
- c) Each step must take a minimum of 24 hours and the length of time needed to complete each step will vary based on the severity of the concussion.
- d) The Participant should be monitored regularly for the return of any signs and/or symptoms of concussion. If signs and/or symptoms return, the Participant must consult with a physician

Ringette Canada recommends that Participants diagnosed with a concussion follow these Return to Play steps:

Step 0: No activity, only complete rest. Proceed to step 1 only when symptoms are gone.

**Proceed to the next step ONLY if symptom free. If symptoms occur, drop back to the step where you do not have symptoms, then allow AT LEAST 24 hours between steps<sup>10</sup>.**

Step 1: Light aerobic exercise, such as walking or stationary cycling. Monitor for symptoms and signs. No resistance training or weight lifting. Students must have returned to school or full studies at their pre-injury level of performance and adults must have returned to their normal education or work.

**Medical clearance is required in order to move to the next step.** (Doctor's clearance must be submitted to your Team Trainer/Safety Person. )

Step 2: Sport specific activities and training (e.g. skating).

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<sup>9</sup> Lovell MR, Collins MW, Iverson GL, Johnston KM, Bradley JP. Grade 1 or "ding" concussions in high school athletes. Am J Sports Med. 2004 Jan-Feb;32(1):47-54.

<sup>10</sup> Department of Neurosurgery, Dalhousie University Concussion Card.

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Step 3: Drills without contact with teammates. May add light resistance training and progress to heavier weights. The time needed to progress from non-contact to contact exercise will vary with the severity of the concussion and the player.

Step 4: Begin drills involving contact with teammates.

Step 5: Game play.

Once the Participant has been given medical clearance, the coach, administrator and/or supervisor will be required to forward a copy of the physician's notice of medical clearance to Ringette Canada for retention.

## **Roles and Responsibilities:**

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### **Team staff:**

The team Emergency Action Plan (EAP) should indicate specific responsibilities for team staff regarding an injured player. Teams may wish to add a specific section to their EAP outlining information and actions related to concussive injuries.

The coaching staff of the individual with a suspected concussion should complete a Ringette Canada or PSO insurance provider incident report (ex: BFL) and submit to [ringette@ringette.ca](mailto:ringette@ringette.ca).

### **Direction for head coach:**

The Head Coach retains the responsibility to initiate actions related to athletes with potential concussions. The two main responsibilities of the Head Coach include:

1. Enacting the team EAP.
2. Ensuring the timely completion of an injury report form.

The main trigger for the Head Coach to fulfill these responsibilities will be when any athlete suffers an impact during a game resulting in missed playing time due to symptoms indicating potential concussion.

*“When in doubt, fill the form out”*

When the injury report form is filled out, the following process must be followed:

1. The athlete must be given the Athlete Concussion Report Medical Form and seek medical assessment by a physician to determine whether a concussion has occurred.
2. The player is not to resume on-ice activities until the form is returned to the Head Coach.
3. The athlete and parent/guardian should be given the Concussion Information Sheet to help guide them through the process.

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## General:

- **Provincial Sport Organizations (PSO)**

All PSOs are expected to encourage the prevention of concussions with strong education programs and rule enforcement. PSOs are expected to have concussion policies and procedures and annually report all concussion incidents to Ringette Canada. PSOs are also expected to provide capacity to clubs to assist their concussion management initiatives.

- **Local Ringette Associations (clubs)**

Clubs are under the jurisdiction of the PSO should adapt the PSO's concussion policy for their own activities. Clubs are expected to annually report all concussion incidents to their PSO.

## Resources:

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- Centres for Disease Control and Prevention – HEADS UP to Youth Sports  
<http://www.cdc.gov/headsup/youthsports/index.html>
- Parachute – Preventing Injuries Saving Lives – Concussion FAQ and Resources  
<http://www.parachutecanada.org/injury-topics/topic/C9>

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## CONCUSSION EMERGENCY ACTION PLAN

Emergency numbers:	<b>911</b> ~ If not, local police, fire, ambulance numbers should be posted	
Contact Information	President:	Cell:
	Manager:	Cell:
	Other:	Cell:
	Other:	Cell:
Facility Information	Address:  Telephone:  Nearest cross street:	Google Map
<b>Person(s) on-site and in charge</b> <input type="checkbox"/> Clear risk of further harm to the injured person by securing the area and shelter the injured person from the elements. <input type="checkbox"/> Designate who is in charge of the other participants. <input type="checkbox"/> Protect yourself (wear gloves if in contact with body fluids such as blood). <input type="checkbox"/> Check that airway is clear, breathing is present, a pulse is present, and there is no major bleeding. <input type="checkbox"/> Wait by the injured person until the ambulance arrives and the injured person is transported. <input type="checkbox"/> Fill in your PSO insurance service provider accident report form.	<b>Names</b> 1:  2:  3:	
<b>On-site Call Person(s)</b> <input type="checkbox"/> Call for emergency help. <input type="checkbox"/> Provide all necessary information to dispatch (e.g. facility location, nature of injury, what, if any, first aid has been done). <input type="checkbox"/> Clear any traffic from the entrance/access road before ambulance arrives. <input type="checkbox"/> Wait by the driveway entrance to the facility to direct the ambulance when it arrives. <input type="checkbox"/> Call the emergency contact person listed on the injured person's medical profile, or if present, ask emergency contact to monitor injured person.	<b>Names</b> 1:  2:  3:	

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## CONCUSSION INCIDENT FORM

INCIDENT REPORT FORM			
<b>Participant Information</b>		Date:	
Last Name:		First Name:	
Phone:		Province:	
Gender    Male <input type="checkbox"/> Female <input type="checkbox"/>		Age:	
Club / League:			
Relevant other medical conditions			
INCIDENT INFORMATION REPORT			
Date of incident:			
Time of first intervention:			
Time of medical support:			
Describe the incident			
Conditions: (describe any significant information like surface quality):			
Actions Taken:			
After intervention, the individual was:		<input type="checkbox"/> sent home	<input type="checkbox"/> sent to hospital
		<input type="checkbox"/> back on the ice	
Form completed by:			
Print			
Date		Signature	

*Information provided in this form will remain private and confidential.*

**COMPLETED FORMS MUST BE SUBMITTED TO RINGETTE CANADA [ringette@ringette.ca](mailto:ringette@ringette.ca)**

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