



## Pre-Season Concussion Education Resource

### WHAT IS A CONCUSSION?

A concussion is a brain injury that can't be seen on x-rays, CT or MRI scans. It affects the way an individual thinks and can cause a variety of symptoms.

### WHAT CAUSES A CONCUSSION?

Any blow to the head, face or neck, or somewhere else on the body that causes a sudden jarring of the head may cause a concussion. Examples include falling on the ice, colliding with the boards or another skater, landing awkwardly from a jump, tripping, etc.

### WHEN SHOULD I SUSPECT A CONCUSSION?

A concussion should be suspected in any individual who sustains a significant impact to the head, face, neck, or body and reports *ANY* symptoms or demonstrates *ANY* visual signs of a concussion. A concussion should also be suspected if an individual reports *ANY* concussion symptoms to one of their peers, parents, teachers, or coaches or if anyone witnesses an individual exhibiting *ANY* of the visual signs of concussion. Some individuals will develop symptoms immediately while others will develop delayed symptoms (beginning 24-48 hours after the injury).

### WHAT ARE THE SYMPTOMS OF A CONCUSSION?

A person does not need to be knocked out (lose consciousness) to have had a concussion. Common symptoms include:

- ▶ Headaches or head pressure
- ▶ Dizziness or disorientation
- ▶ Nausea and vomiting
- ▶ Blurred or fuzzy vision
- ▶ Sensitivity to light or sound
- ▶ Balance problems
- ▶ Poor focus, concentration and retention
- ▶ Appearing dazed or drowsy
- ▶ Feeling slowed down or fatigued
- ▶ Easily upset or angered
- ▶ Sadness
- ▶ Nervousness or anxiety
- ▶ Feeling more emotional
- ▶ Sleeping more or sleeping less
- ▶ Having a hard time falling asleep
- ▶ Difficulty working on a computer
- ▶ Difficulty reading
- ▶ Difficulty learning new information

### WHAT ARE THE VISUAL SIGNS OF A CONCUSSION?

Visual signs of a concussion may include:

- ▶ Lying motionless on the ice or ground
- ▶ Slow to get up after a direct or indirect hit to the head
- ▶ Disorientation or confusion or inability to respond appropriately to questions
- ▶ Blank or vacant stare
- ▶ Balance, gait difficulties, motor incoordination, stumbling, slow labored movements
- ▶ Facial injury after head trauma
- ▶ Clutching head

**WHAT SHOULD I DO IF I SUSPECT A CONCUSSION?**

If an individual is suspected of sustaining a concussion, they should be immediately removed from skating/off-ice training or coaching. Any individual who is suspected of having sustained a concussion must not be allowed to return to skating, off-ice training, or coaching that day, even if they say they are feeling better.

**It is important that ALL individuals with a suspected concussion undergo a medical assessment by a medical doctor or nurse practitioner, as soon as possible. It is also important that ALL individuals with a suspected concussion receive written medical clearance from a medical doctor or nurse practitioner before returning to any kind of sport / physical activities.**

**WHEN CAN THE INDIVIDUAL RETURN TO LEARN/SCHOOL/COACHING AND SPORTS?**

It is important that all individuals diagnosed with a concussion follow a stepwise return to learn/school/coaching and sports-related / physical activities that includes the following Return-to-learn/School/coaching and Skate Canada Return-to-Sport Strategies. It is important that individuals return to full-time school activities before progressing to stage 5 and 6 of the Return-to-Sport Strategy.

**Return-to-Learn/School/Coaching Strategy**

Stage	Aim	Activity	Goal of each step
1	Daily activities at home that do not give the individual symptoms	Typical activities during the day as long as they do not increase symptoms (i.e. reading, texting, screen time). Start at 5-15 minutes at a time and gradually build up.	Gradual return to typical activities
2	Learn/School/Coaching activities	Learn/School: Homework, reading or other cognitive activities outside of the classroom.  Coaching: Reading or other cognitive activities off the ice	Increase tolerance to cognitive work
3	Return to Learn/School /Coaching part-time	Learn/School: Gradual introduction of schoolwork. May need to start with a partial learn/school day or with increased breaks during the day.  Coaching: gradual return to work – may need to start with a partial work day and should remain off the ice	Increase academic/coaching activities
4	Return to Learn/School/Coaching full-time	Learn/School: Gradually progress  Coaching: Gradual progress to coaching, first remaining off the ice, then progressing to on - ice;  Should start progression from stage 2 to 6 of the Skate Canada Specific Return to Sport Strategy for coaches as tolerated.	Return to full academic activities and catch up on missed schoolwork

McCrory et al. (2017). Consensus statement on concussion in sport – the 5<sup>th</sup> international conference on concussion in sport held in Berlin, October 2016. *British Journal of Sports Medicine*, 51(11), 838-847.

## Skate Canada Specific Return-to-Sport Strategy for SINGLES

Stage	Aim	Activity	Goal of each step
1	Symptom-limiting activity	Daily activities that do not provoke symptoms	Gradual re-introduction of work/school activities
2	Light aerobic activity	<p><b>Cardio-vascular testing if available to establish the basic heart rate (HR), where the symptoms appear.</b></p> <p>If not possible:</p> <ul style="list-style-type: none"> <li>• Medium pace walking without symptoms (HR 100-130)</li> <li>• Light intensity stationary cycling or jogging for 15-20 minutes at sub-symptom threshold intensity</li> <li>• No resistance training.</li> </ul>	<p>Increase heart rate</p> <p>Regain normal heart rate variability.</p>
3	Sport-specific exercise	<p>Running or skating drills. No head impact activities.</p> <p><b>Off-ice warm-up:</b></p> <ul style="list-style-type: none"> <li>• sub-maximal with agility exercises.</li> </ul> <p><b>On-Ice intervals:</b></p> <ul style="list-style-type: none"> <li>• stroking, then turns (no twizzles)</li> <li>• 5 x 3 minutes program parts without jumps or spins at 60-70% max heart rate (around 140), and rest until back to 50-55% max HR (around 80-100)</li> </ul> <p><b>Off-ice training (gym):</b></p> <ul style="list-style-type: none"> <li>• under 80% of 1 maximal repetition (MR)</li> <li>• No jumps, avoid exercises with head below hips</li> <li>• Core, proprioception, stabilization &amp; flexibility exercises</li> </ul>	<p>Add movement</p> <p>No jumps, no spinning.</p> <p>Try to plan ice session with less skaters on the ice.</p>
4	Non-contact training drills	<p><b>Warm up:</b></p> <ul style="list-style-type: none"> <li>• Off-ice double jumps without symptoms (start with 5-10 reps)</li> <li>• Agility with intervals, 8 x 30sec.</li> </ul> <p><b>On-Ice training:</b></p> <p>1- Full programs with single jumps; no spins; 80-90% max HR (165-180)</p>	<p>Exercise, coordination and increased thinking</p> <p>Avoid repetitive falls.</p> <p>Avoid session with a lot of skaters.</p>

		<p>Rest until back to 50-55% max HR (around 80-100)</p> <p>Single and double jumps outside programs</p> <p>No spins</p> <p>If tolerated:</p> <p>2- Complete programs with single and double jumps, but no spins</p> <p>Mastered triple jumps outside programs</p> <p>No spins</p> <p>If tolerated:</p> <p>3- Add more difficult triple jumps</p> <p>4- No spins</p> <p><b>Off ice training (gym):</b></p> <ul style="list-style-type: none"> <li>• No more than 80% of 1 MR (maximal resistance);</li> <li>• Add exercises with external resistance</li> <li>• Avoid jumps in training if jumps being done during same day on-ice training</li> </ul>	
5	Full contact practice	<p>Following medical clearance</p> <p><b>Warm-up</b></p> <p>Same as previous to injury</p> <p><b>On-ice training:</b></p> <p>1. Complete/full programs with all jumps but no spins</p> <p>Spins outside programs</p> <p>If tolerated:</p> <p><b>2. Progress to full programs</b></p> <p><b>Off-ice training (gym):</b></p> <ul style="list-style-type: none"> <li>• Pre-injury strength &amp; conditioning</li> <li>• Limit jumping depending on how much was done on ice</li> </ul>	Restore confidence and assess functional skills by coaching staff
6	Return to sport	Normal training, no restrictions	

## Skate Canada Specific Return-to-Sport Strategy for PAIRS/DANCE/SYNCHRONIZED SKATING

Stage	Aim	Activity	Goal of each step
1	Symptom-limiting activity	Daily activities that do not provoke symptoms	Gradual re-introduction of work/school activities
2	Light aerobic activity	<p><b>Cardio-vascular testing if available to establish the basic HR where the symptoms appear</b></p> <p>If not possible:</p> <ul style="list-style-type: none"> <li>• Medium pace walking without symptoms (HR 100-130)</li> <li>• Light intensity stationary cycling or jogging for 15-20 minutes at sub-symptom threshold intensity</li> <li>• No resistance training.</li> </ul>	<p>Increase heart rate.</p> <p>Regain normal heart rate variability.</p>
3	Sport-specific exercise	<p>Running or skating drills. No head impact activities.</p> <p><b>Off-ice warm-up:</b></p> <ul style="list-style-type: none"> <li>• Sub-maximal with agility exercises.</li> </ul> <p><b>On-ice intervals:</b></p> <ul style="list-style-type: none"> <li>• Stroking, then turns (no twizzles, no lifts)</li> <li>• 5 x 3 minutes program parts without jumps, lifts, or spins at 60-70% max heart rate (around 140), and rest until back to 50-55% max HR (around 80-100)</li> </ul> <p><b>Off-ice training (gym):</b></p> <ul style="list-style-type: none"> <li>• Under 80% of 1 maximal repetition (MR)</li> <li>• No jumps or lifts, avoid exercises with head below hips</li> <li>• Core, proprioception, stabilization &amp; flexibility exercises</li> </ul>	<p>Add movement No jumps, no lifts, no spinning</p> <p>Try to plan ice session with less skaters on the ice.</p>
4	Non-contact training drills	<p><b>Warm up:</b></p> <ul style="list-style-type: none"> <li>• Off-ice double jumps without symptoms (start with 5-10 reps)</li> <li>• Agility with intervals, 8 x 30sec.</li> <li>• Off-ice lifts</li> </ul>	<p>Exercise, coordination and increased thinking</p> <p>Avoid repetitive falls. Avoid session with a lot of skaters.</p>

		<p><b>On-Ice training:</b></p> <p>1- Full programs with single jumps (including side by side jumps); no spins; 80-90% max HR (165-180)</p> <p>Rest until back to 50-55% max HR (around 80-100)</p> <p>Single and double jumps outside programs</p> <p>Lifts outside of program;</p> <p>No throw jumps</p> <p>No Death Spiral</p> <p>No spins</p> <p>If tolerated</p> <p>2- Complete programs with single and double jumps (including side by side) and lifts, but no spins</p> <p>Mastered triple jumps and throw jumps outside programs</p> <p>No spins</p> <p>No Death Spirals</p> <p>If tolerated:</p> <p>3- Complete programs with lifts, triple side by side and double throws, no spin.</p> <p>Death spirals and triple throws outside programs</p> <p>No spins</p> <p><b>Off ice training (gym):</b></p> <ul style="list-style-type: none"> <li>• No more than 80% of 1 MR (maximal resistance);</li> <li>• Add exercises with external resistance</li> <li>• Avoid jumps in training if jumps being done during same day on-ice training</li> </ul>	
5	Full contact practice	<p>Following medical clearance</p> <p><b>Warm-up</b></p> <p>Same as previous to injury</p>	Restore confidence and assess functional skills by coaching staff

		<p><b>On-ice training:</b></p> <ol style="list-style-type: none"> <li>1. Complete/full programs with all jumps, throws and death spirals, but no spins</li> </ol> <p>Spins outside programs</p> <p>If tolerated:</p> <ol style="list-style-type: none"> <li>2. Progress to full programs</li> </ol> <p><b>Off-ice training (gym):</b></p> <ul style="list-style-type: none"> <li>• Pre-injury Strength &amp; Conditioning</li> <li>• Limit jumping depending on how much was done on ice</li> </ul>	
6	Return to sport	Normal game play	

### Skate Canada Specific Return-to-Sport Strategy for COACHES

Stage	Aim	Activity	Goal of each step
1	Symptom-limiting activity	Daily activities that do not provoke symptoms	Gradual re-introduction of work/school activities
2	Light aerobic activity	<p><b>Cardio-vascular testing if available to establish the basic heart rate (HR), where the symptoms appear.</b></p> <p>If not possible:</p> <ul style="list-style-type: none"> <li>• Medium pace walking without symptoms (HR 100-130)</li> <li>• Light intensity stationary cycling or jogging for 15-20 minutes at sub-symptom threshold intensity</li> <li>• No resistance training.</li> </ul>	<p>Increase heart rate</p> <p>Regain normal heart rate variability.</p>
3	Sport-specific exercise	<p>Running or skating drills. No head impact activities.</p> <p><b>On-Ice intervals:</b></p> <ul style="list-style-type: none"> <li>• Stroking, then turns (no twizzles)</li> <li>• 5 x 3 minutes at 60-70% max heart rate (around 140), and rest until back to 50-55% max HR (around 80-100)</li> </ul> <p><b>Off-ice training (gym):</b></p> <ul style="list-style-type: none"> <li>• Under 80% of 1 maximal repetition (MR)</li> </ul>	<p>Add movement</p> <p>No jumps, no spinning.</p>

		<ul style="list-style-type: none"> <li>No exercises with head below hips</li> <li>Core, proprioception, stabilization &amp; flexibility exercises</li> </ul>	
4	Non-contact training drills	<p><b>On-ice intervals:</b></p> <ul style="list-style-type: none"> <li>Stroking then turns; 80-90% max HR (165-180)</li> <li>Rest until back to 50-55% max HR (around 80-100)</li> <li>Single and double jumps</li> <li>No spins</li> </ul> <p>If tolerated:</p> <ul style="list-style-type: none"> <li>Mastered triple jumps outside programs</li> <li>No spins</li> </ul> <p>If tolerated:</p> <ul style="list-style-type: none"> <li>Add more difficult triple jumps</li> </ul> <p><b>Off ice training (gym):</b></p> <ul style="list-style-type: none"> <li>No more than 80% of 1 MR (maximal resistance);</li> <li>Add exercises with external resistance</li> </ul>	<p>Exercise, coordination and increased thinking</p> <p>Avoid repetitive falls.</p>
5	Full contact practice	<p>Following medical clearance</p> <p><b>Warm-up</b> Same as previous to injury</p> <p><b>On-ice training:</b></p> <ul style="list-style-type: none"> <li>Jumps</li> <li>Reintroduce spins</li> </ul> <p>If tolerated:</p> <ul style="list-style-type: none"> <li>Progress to full coaching session physically</li> </ul> <p><b>Off-ice training (gym):</b></p> <ul style="list-style-type: none"> <li>Pre-injury Strength &amp; Conditioning</li> <li>Limit jumping depending on how much was done on ice</li> </ul>	Restore confidence
6	Return to sport	Normal training, no restrictions	

### **HOW LONG WILL IT TAKE FOR THE INDIVIDUAL TO RECOVER?**

Most individuals who sustain a concussion will make a complete recovery within 1-2 weeks while most youth will recover within 1-4 weeks. Approximately 15-30% of patients will experience persistent symptoms (>2 weeks for adults; >4 weeks for youth) that may require additional medical assessment and management.

### **HOW CAN I HELP PREVENT CONCUSSIONS AND THEIR CONSEQUENCES?**

Concussion prevention, recognition and management require individuals to follow the rules and regulations of their sport, respect other skaters, coaches and trainers, avoid head contact, and report suspected concussions.

### **ADDITIONAL INFORMATION:**

#### **TO LEARN MORE ABOUT CONCUSSIONS PLEASE VISIT:**

Parachute Canada: [www.parachutecanada.org/concussion](http://www.parachutecanada.org/concussion)



## Pre-Season Concussion Education Resource Acknowledgement Sheet

**Note that all individuals and their parent or legal guardian (if under 18 years of age) must review the Pre-Education Resource and sign this Acknowledgement Sheet within 60 days of registration.**

*The following signatures certify that the individual and their parent or legal guardian have reviewed the above information related to concussions.*

By signing here, I acknowledge that I have fully reviewed the Pre-Season Concussion Education Resource.

\_\_\_\_\_  
Printed name of individual

\_\_\_\_\_  
Signature of individual

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name of parent/guardian  
(if under 18 years of age)

\_\_\_\_\_  
Signature of parent/guardian

\_\_\_\_\_  
Date

**The signed Acknowledgement Sheet is to be collected and kept at the club or skating school level.**