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## **CANADIAN FREESTYLE SKI ASSOCIATION CONCUSSION PROTOCOL & GUIDELINES for Provincial & Club Programs**

### **DEFINITION OF CONCUSSION:**

A concussion is an alteration of the normal function of the brain induced by trauma. This may be by a direct blow or rotational forces resulting in a rapid acceleration/deceleration of the brain within the skull. Concussion is often difficult to recognize, as some athletes do not complain of headache. Symptoms may be limited to nausea, poor concentration, amnesia, fatigue, sensitivity to light or noise, irritability, poor appetite, decreased memory. Loss of consciousness is not required to have a concussion; in fact most athletes do not lose consciousness.

### **WHY IS THIS IMPORTANT TO RECOGNIZE?**

A concussion is important to recognize so the brain is given adequate time to rest and heal. If an athlete returns to training or competition too early, symptoms may drag on, and put the athlete at risk for a second concussion or other significant injury. The often vague symptom complex often makes recognition of the diagnosis difficult at first and we often rely on the athlete to report the injury; it is a difficult task if that same athlete is concussed and not processing information properly. This then puts the task directly in the hands of the coach, therapist or doctor to recognize and give the appropriate advice to the athlete.

### **PRESEASON TESTING**

All athletes should complete a neuro-psych test prior to the season. The ImPACT test is one example of a neuro-psych test, but there are others. These tests provide a valuable baseline for the ongoing evaluation of some concussions that are slow to resolve. The model best fits athletes >16 years of age. Follow-up neuro-psych testing is only done once the athlete is symptom free, and return to skiing/training is being considered.

### **THE INITIAL ASSESSMENT AND DIAGNOSIS**

Any athlete with any concussion symptoms following a fall or injury needs to be identified by their coach, therapist or doctor on site. Every athlete must then be evaluated by the therapist, and doctor if present. The presence of any symptoms mandates the athlete's immediate removal from activity and requires a medical evaluation by a physician who has experience with traumatic brain injuries (concussions). An athlete who has sustained a suspected concussion is not to return to any aerobic or sport activity without the written consent of a physician.

### **INITIAL MANAGEMENT OF THE CONCUSSION**

The athlete should not be left alone in the first few hours. The initial treatment is rest until the complete resolution of symptoms. This includes both physical and cognitive, or mental rest. Athletes should therefore have a quiet environment and avoid excessive exposure to stimulation such as television, computer, video games or text messaging.

Athletes should avoid alcohol and medication use after concussion. Some analgesics (pain-killers) and anti-inflammatories may be prescribed, but it should be recognized that these might mask some of the signs and symptoms of concussion. Medical evaluation will decide whether any other acute investigations such as CT or MRI are warranted.

The Return To Play Progression for freestyle skiing can begin once the athlete has been off all medications and completely symptom free for a minimum of 24 hours. In cases where symptoms have persisted for many weeks or more, it may be necessary to be symptom free for a longer period of time before beginning the RTP process. If in doubt, consult a physician with experience with traumatic brain injuries.

### RETURN TO PLAY PROGRESSION FOR FREESTYLE SKIING

This is a step-wise process, each step being separated by a minimum of 24 hours. Progression to the next step only occurs if the athlete is completely asymptomatic at the current level. With any recurrence of concussive symptoms, the athlete should drop back to the previous asymptomatic level.

Step	Activity Level	Freestyle Ski Context	Symptoms Present ?	
			Yes	No
1	<b>No activity, only complete rest.</b>	Limit school. Work and tasks requiring concentration. Refrain from physical activity until symptoms are gone.		A physician, should be consulted before moving to step 2.
2	<b>Light aerobic exercise.</b>	Activities such as walking or stationary cycling. Someone who can help monitor for symptoms and signs should supervise the player. No resistance training or weight lifting. The duration and intensity of the aerobic exercise can be gradually increased over time if no symptoms or signs return during the exercise or the next day.  Follow this 2-step process with 24 hours of rest between each step.  a. Step 1 – 15 minutes on stationary bicycle, rest 24 hrs. If symptom free go to step 2 b. Step 2 – 60 minutes of more aggressive cardio work (75% of max Heart Rate) such as bike or jogging.	Return to rest and step 1 until symptoms have resolved.  If symptoms persist, consult a physician.	Proceed to Step 3 only if athlete is: Asymptomatic after 60 minute cardio session
3	<b>Sport specific activities</b>	Gentle skiing on flat, easy terrain. No jumping or jarring movements. No bouncing on trampolines.  Continuous skiing for 60 minutes	Return to rest until symptoms have resolved then resume at step 2.  If symptoms persist, consult a physician.	Proceed to Step 4 the next day if asymptomatic.
4	<b>Begin</b>	60 minutes of continuous discipline-specific	Return to rest	The time needed to

	<b>Discipline Specific Drills (up to moderate intensity)</b>	training (on or off snow) <ul style="list-style-type: none"> <li>- Skiing on moderate, terrain with moguls</li> <li>- Skiing the halfpipe with small, easy jumps.</li> <li>- Riding “ability appropriate” boxes/rails</li> <li>- No big air tricks</li> <li>- Small bouncing on trampoline or bounding drills.</li> </ul>	until symptoms have resolved then resume at step 3.  If symptoms persist, consult a physician.	progress from non-contact exercise will vary with the severity of the concussion and with the player.  Proceed to Step 5 with Medical Clearance Only.
<b>5</b>	<b>Begin Sport Specific Drills (up to full intensity)</b>	Gradually increase the intensity of training to include all normal training activities.	Return to rest until symptoms have resolved then resume at step.  If symptoms persist, consult a physician.	Proceed to Step 6 the next day.
<b>6</b>	<b>Game Play</b>	Return to Competition		

**Never return to play if you still have symptoms!**

**A player who returns to active play before full recovery from the first concussion is at high risk of sustaining another concussion, with symptoms that may be increased and prolonged.**

**HOW LONG DOES THIS PROCESS TAKE?**

With this protocol, it will take a minimum of one week following complete resolution of symptoms before an individual or athlete can return to his or her appropriate level of activity. These steps do not correspond to days although most athletes with a concussion will typically progress through these steps over 7-10 days. If the concussion is severe or if the athlete has had multiple concussions, it may take many days to progress through one step. As soon as symptoms appear, the player should return to rest until symptoms have resolved and wait at least one more day before attempting any activity. The only way to heal a brain is to rest it.

**HOW DO I FIND THE RIGHT DOCTOR?**

When dealing with concussions, it is important to see a doctor who is knowledgeable in concussion management. This might include your physician or someone such as a sports medicine specialist. Your family doctor may be required to submit a referral to see a specialist. Contact the Canadian Academy of Sport and Exercise Medicine (CASEM) to find a sports medical physician in your area. **Visit [www.casm-acms.org](http://www.casm-acms.org) for more information.** You can also refer your doctor to the concussion pages of [thinkfirst.ca](http://thinkfirst.ca) for more information.

**WHO DO THESE GUIDELINES APPLY TO?**

These guidelines were developed for children over the age of 10; those younger may require special guidelines, and more conservative treatment and care. Return to Play Guidelines should be at the discretion of the physician.

## **WHAT IF MY SYMPTOMS RETURN DURING THIS PROCESS?**

Sometimes these steps can cause symptoms of a concussion to return. This means that the brain has not yet healed, and needs more rest. If any signs or symptoms return during the Return To Play process, they should stop the activity and rest until symptoms have resolved. The player must be re-evaluated by a physician before trying any activity again. Remember, symptoms may return later that day or the next, not necessarily during the activity!

## **CREDITS:**

The ThinkFirst Canada Concussion resources were developed based on the Zurich Guidelines outlined in the Consensus Statement on Concussion in Sport and have been reviewed with great thanks to the ThinkFirst Concussion Education and Awareness Committee.

This protocol was prepared by medical doctors from the Canadian Freestyle Ski Association's High Performance Program Integrated Support Team (and is not intended for use by the CFSA High Performance Program).