



Concussion – What You Should Know

The best way of treating a concussion is to prevent it happening in the first place.

Make sure your children have correctly fitting athletic equipment, are wearing a mouth guard, and are taught to respect their team-mates and opposing players.

Concussion can be a problem in sports, the workplace, or for those who have been involved in a motor vehicle accident. Injuries to high profile athletes such as Sidney Crosby have highlighted the importance of correct management of this injury.

What is a Concussion?

A concussion is a disturbance in brain function caused by a direct or indirect force to the head. Concussion results in a variety of symptoms and often does not involve the loss of consciousness.

If you have been *dinged* or had your *bell rung*, you have had a concussion.

Being knocked unconscious is not related to the severity of the concussion. Sidney Crosby was never knocked out, but his

concussion was significantly worse than that of Max Pacioretty who was out cold.

The majority of concussions, between 80-90%, resolve within 7-10 days. Although the recovery time frame is often longer in children or teenagers.

Post-concussion Syndrome – When the concussion symptoms persist beyond three months, the person has post-concussion syndrome. Think Sidney Crosby.

Second Impact Syndrome – A second impact to a concussed brain can lead to dangerous changes to the brain's blood supply. This leads to rapid swelling of the brain and can cause coma or even death. This is most commonly seen in athletes who are younger than 21 years of age and who have returned to play while they are still symptomatic.



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What are the Signs and Symptoms?

Up to 15% of athletes will lie to get back in the game.

You only have one brain – take care of it.

There are many signs and symptoms that are associated with concussion. A concussion should be suspected if **one or more** of the following are present:

- Headache, dizziness, nausea, vomiting, visual disturbances, or ringing in the ears.

- Confusion, amnesia, disorientation, decreased concentration, or memory

disturbances.

- Decreased coordination, decreased balance, slurred speech, behaviour changes, decreased performance, or decreased playing ability.

The appearance of these symptoms may be delayed for several hours following a concussion injury.

Athletes may be reluctant to report the symptoms of

a concussion for fear of being removed from the game, or the effects it may have on their athletic career.

Without proper management, concussion injury can lead to persistent symptoms and negative effects on quality of life.

How is a Concussion Assessed?

A concussion can be assessed by health care professionals using The Sport Concussion Assessment Tool (SCAT). The SCAT was developed by leading physicians in the field of concussion in

conjunction with sporting bodies such as the IIHF and FIFA. It is valid for use in those over 10 years of age. The SCAT assesses symptoms, physical signs, level of consciousness, level of

orientation, immediate memory, concentration, and delayed recall. It also assesses balance and coordination. The SCAT can also be used to monitor an athletes progress as they recover.

Any player who is suspected of suffering from a concussion must immediately be removed from practice or play.

Any player who is suspected of suffering from a concussion must not be allowed to return to play on the same day.

How is a Concussion Treated?

The most important part of concussion management is absolute physical and cognitive rest until the symptoms have resolved, followed by a progressive programme of exertion prior to returning to play.

Activities that require concentration and attention (school, work, video games, texting) may

increase symptoms and delay recovery. Children should stay home from school if the symptoms get worse while they are in class. As the symptoms resolve, they may return on half and then full days.

Anyone suspected of suffering from a concussion should not be

left alone and should be checked through the night at first. If there are concerns about their breathing or how they are sleeping, wake them up. Otherwise, let them sleep. It is no longer recommended that someone with a concussion is woken hourly as this does not allow the brain to rest.

Getting You Back to Living – ProActively!



It is always unsafe to return to play while still experiencing the symptoms of concussion.

How Soon can an Athlete Return to Play?

Anyone who has had a concussion should be reviewed by a medical doctor before returning to sports or a physical job. The decision to return to play is best made by a team of people including the player, coach, physician, physiotherapist or athletic therapist, and parents if appropriate.

The return to play protocol follows a step-wise process. The athlete can progress to the next level if they have been symptom-free at the current level. Each step should take at least 24 hours, so an

athlete can be expected to take approximately **one week** to proceed through the full rehabilitation programme. If any post-concussive symptoms occur during the programme, the athlete drops back to the previous asymptomatic level and tries to progress again after at least another 24 hour period of rest.

This rehabilitation protocol is a guideline. Other factors must be considered such as the incidence of previous concussions, length of time between

concussions, length of time for symptoms to resolve, the age of the athlete, and the level and type of sport returning to. It is likely that some athletes will take longer than one week to work through the stages. Progressing too rapidly through the stages while still experiencing symptoms will prolong the athletes total recovery.

Returning to play too soon increases the risk of a new concussion, more severe post-concussion symptoms, or second impact syndrome.

Graduated Return to Play Protocol

Rehabilitation Stage		Functional Exercise at each Stage of Rehabilitation	Objective of Each Stage
1	No activity	Complete physical and cognitive rest.	Recovery
2	Light aerobic exercise	Walking, swimming or stationary cycling keeping intensity <70% maximum predicted heart rate. No resistance training.	Increase heart rate
3	Sport-specific exercise	Skating drills in ice hockey, running drills in soccer. No head impact activities.	Add movement
4	Non-contact training drills	Progression to more complex training drills, eg: passing drills in football and ice hockey. May start progressive resistance training.	Exercise, coordination and cognitive load.
5	Full contact practice	Following medical clearance, participate in full training activities.	Restore confidence and assess functional skills by coaching staff.
6	Return to play	Normal game play.	



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Where can I Find more Information?

Assessment, monitoring of recovery, and supervised return to play can be carried out by professionals such as Athletic Therapists, and some Physiotherapists in

conjunction with the coaches and trainers from the team.

Contact the therapists at ProActive Rehab and Sport Injury Centre for more information.

Anyone who is suspected of suffering from a concussion should also be reviewed by a physician before returning to sports.

ThinkFirst Canada – information for athletes, parents, trainers, and physicians
www.thinkfirst.ca

The Pashby Sport Safety Concussion Website
www.concussionsafety.com

Canadian Athletic Therapists Association Publications – copies of The SCAT for medical professionals; Pocket SCAT for coaches, trainers, and parents.
www.athletictherapy.org/publications_information.aspx

About our Physiotherapists and Athletic Therapists:



Leslie Tempest is a Registered Physiotherapist. Her experience is varied but has primarily focused in an out-patient environment and in private practice. She also enjoys working with dancers and athletes to

overcome injury and develop improved training programs for strength development and injury prevention.

has worked as the therapist for several sports teams, including hockey, football, soccer and rugby, ranging from high school to elite level athletes.

Stella Barnett-Walsh is a Registered Physiotherapist, and a Certified Athletic Therapist. Stella has a special interest in the rehabilitation of lower limb injuries and athletes. She



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