



## **CONCUSSION FAQs**

### *WHAT IS A CONCUSSION?*

A concussion is a common form of head and brain injury, and can be caused by a direct or indirect hit to the head or body (for example, a car crash, fall, or sport injury). This causes a change in brain function, which results in a variety of symptoms. With a concussion there is no visible injury to the structure of the brain, meaning that tests like MRI or CT scans usually appear normal.

### *WHAT ACTUALLY HAPPENS?*

When a person suffers a concussion, the brain suddenly shifts or shakes inside the skull and can knock against the skull's bony surface. A hard hit to the body can result in an acceleration-deceleration injury when the brain brushes against bony protuberances inside the skull. Such forces can also result in a rotational injury in which the brain twists, potentially causing shearing of the brain nerve fibres. It is not yet known exactly what happens to brain cells in a concussion, but the mechanism appears to involve a change in chemical function.

In the minutes to days following a concussion, brain cells remain in a vulnerable state. New research emphasizes that the problem may not be the structure of the brain tissue itself, but how the brain is working. The exact length of this change is unclear. During this time period, the brain does not function normally on a temporary basis, and is more vulnerable to a second head injury.

### *HOW DO CONCUSSIONS OCCUR?*

Most concussions occur as a result of a collision with another object while the object or person is moving at a high rate of speed. Forces such as these (and others) can result in deceleration and rotational concussive injuries.



## *WHO SHOULD I TELL ABOUT A CONCUSSION?*

It is important to seek medical advice immediately after a high impact hit to the head or body. Often, concussions can go untreated (and even unnoticed by others) because symptoms are often invisible to casual observers. Many times, the symptoms of a concussion may not be identified until the person recovers to the point where increased exertion causes symptoms to worsen. Although symptoms may not be immediately apparent, it is important to be aware of possible physical, cognitive and emotional changes. Symptoms may actually worsen throughout the day of the injury or even the next day. Without proper management, a concussion can result in permanent problems and seriously affect one's quality of life.

Because a concussion affects the function of the brain, and can result in symptoms such as memory loss or amnesia, it is important that others be aware of the signs and symptoms of concussions in order to help identify the injury in others. Individuals should be removed immediately from the current activity (including sports, work and school), should not drive, and seek medical attention immediately.

## *WHAT ARE THE SYMPTOMS OF A CONCUSSION?*

Following a concussion, individuals may experience many different signs and symptoms. A symptom is something the athlete will feel, whereas a sign is something friends, family or a coach may notice. It is important to remember that some symptoms may appear right away and some may appear later. No two concussions are the same. The signs and symptoms may be a little different for everyone. Some may be subtle and may go unnoticed by you as the injured person, co-workers, friends and family.



## *SCREENING AND DIAGNOSIS*

Mild concussions can resolve fully with proper rest and management in a week or two, but concussions which are not diagnosed can lead to long term and more serious health implications. The first and most important step is to consult a doctor, preferably one familiar in concussion management. There are many potential factors which may help to inform individual diagnosis, concussion management and recovery, although many of these are still being researched to find the exact link. For example, severity is likely impacted by a number of factors such as the person's history of previous head injuries, including number of past concussions, length of recovery time, timing between past concussions, age and style of play. Factors such as these can lead to a different, slower recovery, which is why it is important that concussion history is monitored.

Return to activity while still concussed and experiencing symptom can lead to an increased risk for another concussion, more intense symptoms, and a prolonged recovery.

Diagnosing a concussion may take several steps. A doctor may ask questions about concussion and work/sport history, other recent injuries, and will conduct a neurological exam. This can include checking your memory and concentration, vision, coordination and balance. Further tests including a CT scan or MRI, can be important to assess for other skull or brain injury but they do not inform concussion diagnosis. In the majority of concussions, there will not be any obvious damage found on these tests. Sometimes the role of neuropsychological testing is important in identifying subtle cognitive (e.g., memory, concentration) problems caused by the concussion and may at times help to plan return to pre-injury activity. In addition, balance testing may be required. Usually these are arranged by the concussion expert.



## *WHEN CAN/SHOULD I RETURN TO ACTIVITY?*

Working under the supervision of a doctor, concussed individuals wishing to resume daily activities must follow the graduated stages of recovery as detailed within the “Return to Learn” (in the case of students) and “Return to Sport” strategies. Concussed individuals must only return to normal daily activity after they have been cleared by their doctor. A concussed person should be removed from activity immediately and assessed by a medical doctor. Given that symptoms may worsen after the event, individuals should not return to activity. When concussed, the ability to assess situations and events may be impaired. Post-concussive symptoms may intensify with an increase in activity, so it is important that return to activity is gradual and monitored/supervised by a medical professional.

## *HOW DO I PREVENT CONCUSSIONS?*

It is important to take a preventive approach when dealing with concussions. This is especially true after a recent concussion. Prevention of concussions and head injuries is most successful when teammates and colleagues are properly educated and the safety rules of the working and sporting environment are enforced. Respect for the mutual safety of others must be highlighted. Because concussions are an invisible injury, it is important to share concussion information with others – to inform them of the injury and provide information education on concussions.

Protective equipment can reduce the risk and severity of head injury. It is important to have a good quality, properly fitted hard hat/helmet for work environments and collision sports. Safety procedures should be mandated on work sites and protective equipment should be certified and well maintained.