

# Concussion 101

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Everywhere you turn these days you hear the word concussion. Whether it is on the sports highlight reel, the news, or through general conversation with a student, colleague or friend, concussions are definitely a hot topic. But, what exactly is a concussion?

The formal definition for a concussion is a complex pathophysiological process affecting the brain induced by traumatic biomechanical forces.

How does a concussion occur? A concussion may be caused by a direct hit to the head or an indirect force that is transmitted to the head. This means that you could slip and fall without any impact to the head and still suffer a concussion.

How long do concussions last? Concussions typically result in short-lived neurological impairments that usually resolve spontaneously. We know that approximately 85 per cent of concussions heal within 15 to 22 days and people usually report feeling better anywhere from three to 15 days after the injury. We also know that approximately 15 per cent of concussions do not heal within this time frame and can persist for months. There are several proposed mechanisms as to why symptoms persist. However, a recent study found that having access to a specially trained practitioner within the first week of a concussion can reduce recovery time from 30 to 50 days down to 16 days. This indicates that the sooner you see a healthcare professional, the better.

## Signs and Symptoms

There are 22 signs and symptoms of a concussion that have been identified and are part of a standard concussion assessment. They include physical, emotional, and cognitive signs and symptoms because these

are the various areas of the brain that are altered with a concussion.

The signs and symptoms include: headaches; pressure in the head; neck pain; nausea; dizziness; blurred vision; balance problems; sensitivity to light; sensitivity to noise; feeling slowed down; feeling like being in a fog; not feeling right; difficulty concentrating; and remembering; fatigue; confusion; drowsiness; trouble falling asleep; more emotional and irritable; sadness; and feeling nervous/anxious. It is important to recognize that some or all of these signs and symptoms may be present with a concussion.

## Warning Signs

After a trauma, it is important to rule out more sinister pathologies that could occur with a head injury, including a brain bleed. There are several warning signs that indicate an injury is more severe than a concussion. If any of these warning signs are present you should go to the emergency room for examination. Warning signs include a severe worsening headache, extreme drowsiness, seizures, decreasing level of consciousness more than two hours post injury, unable to recognize people or places, unusual behavior, weakness or numbness in the arms or legs, unsteadiness, slurring of speech, fluid leaking from the ears, bruising behind the ears, two black eyes, vomiting, and the inability to remember more than 30 minutes.

## Post-Injury Advice

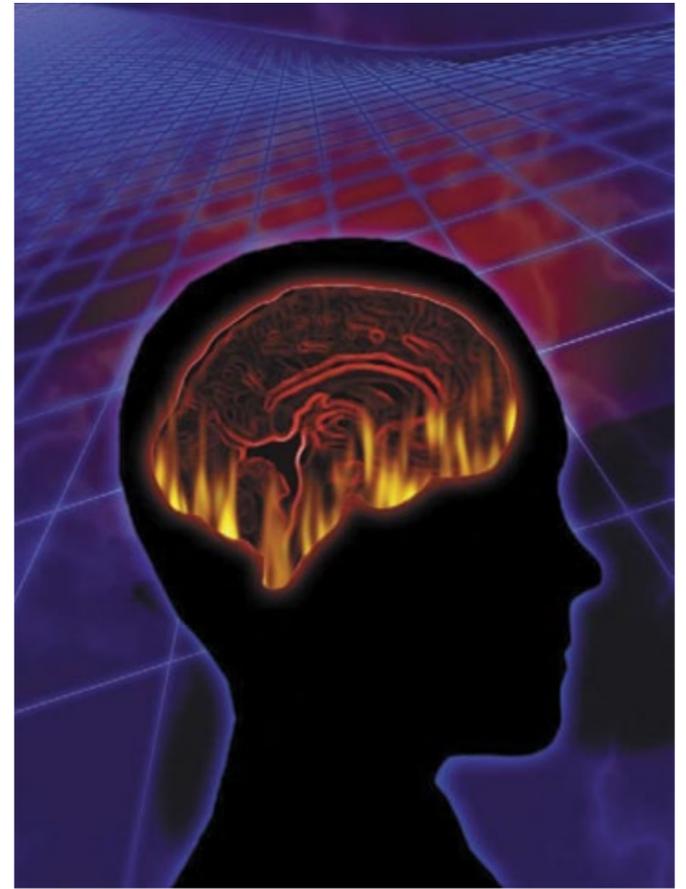
The first 24 hours after a concussion is a critical window to rest your brain, therefore it is best to have absolute physical and mental rest during this time. The best way to achieve this is to sit in a dark room without

any distractions; at this point your brain is running on less energy so it is really important that you let it rest. It is also important not to take any pain medications at this time. The main reason for this is because you do not want to mask any of the warning signs that something more serious is occurring. For example, if you are having a terrible headache, you need to be able to notice it. It is also important not to drive immediately following a concussion. We know that our processing speed is a little bit slower after a concussion and our energy is lower, so it is best to avoid situations that demand a lot of attention, such as driving.

Returning to Work or School and Sports whether it be returning to work or school following a concussion the same principles apply—a gradual return is best. In most cases, the return to work or school should be initiated as soon as the symptoms have resolved. Once the symptoms have resolved it is best to start with small windows of cognitive activity, then progress to a half-day of work or school, and finally progress to a full day of work or school. Once a full day of work or school is completed, a gradual return to sport can be initiated. It is important to note that no two concussions are the same and that everyone progresses differently. This is why it is best to have your return to work or school monitored by a healthcare professional.

## Post-Concussion Syndrome

As mentioned above, approximately 85 per cent of concussions heal within a 15



to 22 day window. This means that 15 per cent of concussions persist past the 22-day mark. Generally, there are several entities within post-concussion syndrome including vestibular dysfunction, visual deficiency, autonomic dysfunction, cervical spine pathology, and psychological difficulties. Due to all the various components within this diagnosis, it is best practice to have a multi-disciplinary team monitoring your recovery.

## Baseline Testing

A Baseline Test is essentially a concussion assessment when a concussion does not exist. It is the current gold standard in concussion management and diagnosis because it allows a practitioner to compare pre and post injury values for the individual as opposed to normative data. Anyone can get a baseline test, but it is best to have it performed pre-season if you engage in a sport.

For more information, you can visit ACCEL Physiotherapy and Sport Performance Centre online at [www.accelphysio.ca](http://www.accelphysio.ca).

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