

# What is a Concussion?



**C**oncussion is a traumatic brain injury resulting in a disturbance of brain function. There are many symptoms of concussion, common ones being headache, dizziness, memory disturbance or balance problems.

Loss of consciousness, ie. being knocked out, occurs in less than 10% of concussions. Loss of consciousness is not a requirement for diagnosing concussion.

Typically standard brain scans are normal.

## What causes a concussion?

Concussion can be caused by a direct blow to the head, but can also occur when blows to other parts of the body result in rapid movement of the head, eg. whiplash-type injuries.

## Who is at risk?

Concussions can happen at any age. However, children and adolescent athletes:

- are more susceptible to concussion
- take longer to recover
- have more significant memory and mental processing issues
- are more susceptible to rare and dangerous neurological complications, including death caused by a single or second impact

## What is a concussion "risk factor"?

A 'risk factor' is something that is associated with an increased chance of illness or injury, in this case associated with an increased chance of sustaining a concussion. There are 3 main reasons why identifying risk factors may be important:

- 1** Susceptibility – having one or more of these risk factors is likely to make the chances of sustaining a concussion greater
- 2** Recovery – the presence of one or more risk factors may make the recovery process after sustaining a concussion much longer
- 3** Prevention – understanding events that lead to concussion, factors that predispose players to concussion, and which factors influence recovery after a concussion may help prevent future concussions and their short and long-term effects on brain function.

Those factors that have been shown to have a potential influence on increasing brain vulnerability or susceptibility to concussion and/or on prolonging recovery after concussion are listed under the different categories:

## How to recognise a concussion

Everyone involved in the game (including side-line medical staff, coaches, players, parents and guardians of children and adolescents) should be aware of the signs, symptoms and dangers of concussion. It should be noted that the symptoms of concussion can present at any time but typically become evident in the first 24-48 hours following a head injury.

If any of the following signs or symptoms are present following a head injury the player should at least be suspected of having concussion and be immediately removed from play or training.

## Risk and Modifying Factors Associated with Concussion

Risk Factor	Explanation
Age	● Players 18 years and younger, but especially those under the age of 13
Gender	● Women and girls have increased risk compared to men and boys
Concussion history	● Previous concussion – especially more than 2 previous concussions or a concussion in the last 12 months ● Less force than before required to cause successive concussions
Behaviour	● Aggressive on-field behaviour and risk-taking
Medical conditions	● Headache and migraine sufferers ● Previous encephalitis or meningitis ● Epilepsy ● Thyroid dysfunction
Learning disabilities	● Attention-deficit and hyperactivity disorders (ADD or ADHD)
Psychological conditions	● Depression ● Anxiety ● Sleep disorders
Treatment with certain drugs	● Psychostimulants eg. Ritalin or Concerta ● Anti-depressants ● Anti-anxiety drugs (tranquilizers) ● Sleeping tablets ● Thyroid medication ● Anti-epileptics

## Signs and Symptoms of Concussion

<b>What you see immediately</b>	<p>Any one or more of the following clearly indicate a concussion:</p> <ul style="list-style-type: none"><li>● Seizure (fits)</li><li>● Loss of consciousness – confirmed or suspected</li><li>● Unsteady on feet or balance problems or falling over or poor coordination</li><li>● Confused</li><li>● Disorientated – not aware of where they are or who they are or the time of day</li><li>● Dazed, blank or vacant look</li><li>● Behavioural changes eg. more emotional or more irritable</li></ul> <p>Any one or more of the following may suggest a concussion:</p> <ul style="list-style-type: none"><li>● Lying motionless on ground</li><li>● Slow to get up off the ground</li><li>● Grabbing or clutching of head</li><li>● Injury event that could possibly cause concussion</li></ul>
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<b>What the player might tell you</b>	<p>Presence of any one or more of the following signs and symptoms may suggest a concussion:</p> <ul style="list-style-type: none"><li>● Headache</li><li>● Dizziness</li><li>● Mental clouding, confusion, or feeling slowed down</li><li>● Visual problems</li><li>● Nausea or vomiting</li><li>● Fatigue</li><li>● Drowsiness/feeling like “in a fog”/difficulty concentrating</li><li>● “Pressure in head”</li><li>● Sensitivity to light or noise</li></ul>
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<b>What questions should you ask a player with suspected concussion?</b>	<p>Failure to answer any of these questions correctly is a strong indication of concussion or at least suspected concussion.</p> <p>What questions you ask <b>adults</b> and <b>adolescents</b></p> <ul style="list-style-type: none"><li>● “What venue are we at today?”</li><li>● “Which half is it now?”</li><li>● “Who scored last in this game?”</li><li>● “What team did you play last game?”</li><li>● “Did your team win the last game?”</li></ul> <p>What questions you ask <b>children</b> (12 years and under)</p> <ul style="list-style-type: none"><li>● “Where are we now?”</li><li>● “Is it before or after lunch?”</li><li>● “What was your last lesson/class?”</li><li>● “Who scored last in this game?”</li><li>● “What is your teacher’s name?”</li><li>● “What is your coach’s name?”</li></ul>
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## Controlling the conflict

This refers to dealing with irate players, parents, coaches or referees. Not intervening in a situation where a player has a suspected concussion or notable head or neck injury may compromise that player’s career or even life in certain instances. This is never easy when working with emotive and irate people, and can become an uncomfortable situation to deal with. The key here is to remain calm, always stay objective and not bring emotions into the fray. Remember concussion is NOT simply a ‘head’ injury, it’s a BRAIN injury.

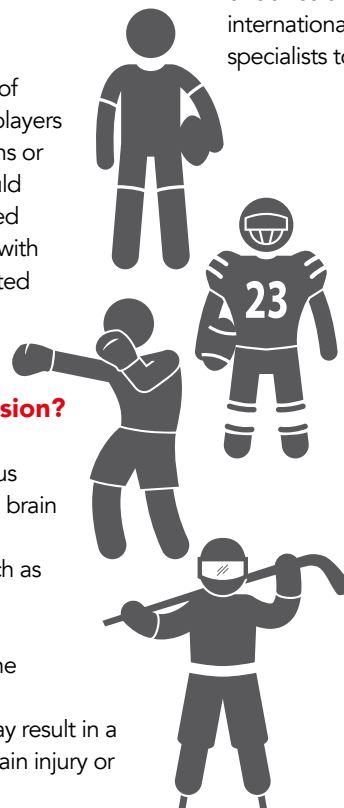
## Recurrent or multiple concussions

Players with a history of two or more concussions within the past year are at greater risk of further brain injury and slower recovery and should seek medical attention from practitioners experienced in concussion management before return to play.

In addition, a history of multiple concussions or players with unusual presentations or prolonged recovery should be assessed and managed by health care providers with experience in sports-related concussions.

## Why should you worry about concussion?

- The injury may mimic something more serious such as a bleed on the brain
- There may be other associated injuries such as neck injuries
- A second blow to the injured brain before the brain has fully recovered may result in a much more serious brain injury or even death



- Repeated brain injuries may also have permanent residual or remaining effects.

Athletes who participate in contact sports may be at risk for developing long-term alterations in brain function and subsequent neurodegenerative (premature degeneration or aging of the nerves in the brain), such as chronic traumatic encephalopathy (CTE). Although there is no direct cause-effect proven as yet, and what degree of injury one needs to have these long term consequences. What is known, is that between 40–50% of athletes who experience a moderate-to-severe traumatic brain injury (TBI), be it in rugby, American football, boxing or ice hockey for example, are likely to experience acute neurological deficits and the manifestation of neurodegenerative complications.

So the key take-home message is that fellow players, coaches, match officials, team managers, administrators or parents who observe an injured player displaying any of the signs of concussion MUST do their best to ensure that the player is removed from the field of play in a safe manner.

The Pocket Concussion Recognition Tool™ (Pocket CRT), is a step by step tool or device that has been developed by an international group of concussion specialists to aid in the recognition (and

make easier) the identification of a player with suspected concussion. It is advised that this tool be carried and used by anyone who may be required or responsible in helping a player – be it a referee, coach, medical person, teacher, adult player at club or community rugby; or parent assisting at school games. Remember player safety first, to ensure a successful concussion outcome is to recognise and remove the player. If in doubt, sit them out.

The Pocket Concussion Recognition Tool is freely available for printing out at the following link

<https://spxj.nl/2nVevdW>

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