



What is a Concussion?

In 2012, leading medical experts from around the world gathered in Zurich, Switzerland to provide management guidelines for sport-related concussions. Below was the proposed definition:

“Concussion is a brain injury and is defined as a complex pathophysiological (physical, cognitive and emotional) process affecting the brain, induced by biomechanical forces. Several common features that incorporate clinical, pathologic and biomechanical injury constructs that may be utilized in defining the nature of a concussive head injury include:

1. Concussion may be caused either by a direct blow to the head, face, neck or elsewhere on the body with an “impulsive” force transmitted to the head.
2. Concussion typically results in the rapid onset of short-lived impairment of neurological function (headache, dizziness, amnesia, etc) that resolves spontaneously. However, in some cases, symptoms and signs may evolve over a number of hours.
3. Concussion may result in neuropathological changes, but the acute clinical symptoms largely reflect a functional disturbance rather than a structural injury and, as such, no abnormality is seen on standard or structural neuroimaging studies.
4. Concussion results in a gradual set of clinical symptoms that may or may not involve loss of consciousness. Resolution of clinical and cognitive symptoms typically follows a sequential course. However, it is important to note that in some cases symptoms may be prolonged.” *McCroory, Et Al. Br J Sports Med 2013;47:250*

A concussion is a temporary change in normal brain function sustained after an injury to the head, direct or indirect.

There are both long and short term risks with concussion.

- Long term we are concerned with overall impacts on the brain. The number of times that a brain sustains an impact small or large affects the overall health of the brain. These long term effects are unknown but there are many studies currently underway to evaluate these changes.
- Short term we are most concerned with Second Impact Syndrome. Second Impact syndrome is when the brain is not completely healed from a concussion and the brain sustains another hit. When this happens, a brain can swell and cause vital brain functions to not work.

There are both long and short term concussion risks both of which are currently being heavily researched.