

Concussion Education & Awareness

What is a Concussion?

A concussion is a mild traumatic brain injury (mTBI), with both physical and functional components.

How are concussions caused?

Concussions happen when the brain is twisted rapidly or impacts the inside of the skull as a result of a direct blow to the head, a whiplash motion, or a blow to the body that transfers forces to the head. These forces can cause injury to the tissues of the brain. When these tissues are injured, they release chemicals that interfere with the brain's functioning and cause the signs and symptoms we associate with concussions. The specific combination of signs and symptoms will depend on which areas of the brain are affected.

Common Signs & Symptoms

Because concussions are internal injuries that can't be seen directly, or even on medical imaging like MRIs or CT scans, we recognize them by the signs and symptoms they cause. **Signs** are observable clues that a person may be suffering from a concussion, while **symptoms** are feelings and sensations experienced by the person who has the concussion.

Any athlete who sustains a significant blow to the head, neck, or body followed by ANY of the signs or symptoms listed below should be removed from participation and evaluated for concussion.

It is not necessary for a person to exhibit all, or even most, of the common signs and symptoms to have a concussion, and loss of consciousness is not a determining factor of whether a person has sustained a concussion.

No two concussions are the same, and even if an individual has had a previous concussion, subsequent ones may exhibit different signs and symptoms. Recognize that while some concussions cause signs and symptoms right away, others may take 24-48 hours before the injury is noticed by the person suffering it or those around them. For this reason, anyone with a suspected concussion should be closely monitored for the first several hours following the injury.

Both signs and symptoms can be categorized as physical, cognitive, or emotional/behavioral. Common signs and symptoms of concussions are summarized on the following chart.

SIGNS & SYMPTOMS OF CONCUSSION

PHYSICAL	
SIGNS	SYMPTOMS
Dazed or vacant look Decreased playing ability Facial injury following head trauma Grabbing or clutching the head Lying motionless on the ground or being slow to get up Poor coordination or balance Slurred speech	Blurred or double vision Dizziness or problems with balance Fatigue or feeling tired Feeling “off” or not right Headache or feeling of pressure in the head Neck pain Nausea or vomiting Ringing in the ears Seeing stars or flashes of light Sensitivity to light or noise Trouble falling asleep
COGNITIVE	
SIGNS	SYMPTOMS
Confusion Difficulty concentrating Easily distracted Slow reaction/response time	Confusion Difficulty concentrating or remembering Feeling dazed or “in a fog” Slowed down, fatigue or low energy
EMOTIONAL/BEHAVIORAL	
SIGNS	SYMPTOMS
Strange or inappropriate emotions	Irritable, sad, more emotional than usual Nervous, anxious, depressed

Recovering from a Concussion

Everyone recovers from a concussion at their own speed, and recovery is gauged by the patient’s self-report of symptoms as well as performance on tests of balance, memory, reaction time, and coordination. The more concussions a person has had, the longer healing is likely to take.

Following a concussion, a patient should have a period of relative physical and cognitive rest. This should involve avoiding strenuous physical activity as well as limiting activities that are cognitively taxing. In addition to the obvious tasks such as schoolwork, other stimulation such as video games, TV, computer work, and texting should all be limited initially, before being gradually reintroduced.

An athlete should complete a graduated return-to-school and return-to-sport program supervised by a medical professional with specific training in concussion care, and should not return to participation in athletics until concussion symptoms have resolved, both at rest and with exertion. The amount of time this takes can vary from one person to the next, and from one concussion to the next in the same

person. Adults tend to recover faster than children, with most returning to activity in 7-10 days. Children may take four weeks or more to fully recover. While the majority of concussions will resolve on their own in a fairly short time, some individuals experience long-term symptoms referred to as post-concussion syndrome. This condition can last for months or even years following the injury.

Dangers of Ignoring a Concussion

Athletes often don't want to report concussion symptoms because they don't want to be removed from participation, but this is a dangerous choice. As soon as an athlete suspects they may have sustained a concussion, they need to stop participation and be evaluated by a medical professional with training in concussion care.

As a teammate, referee, or sideline observer, if you notice someone showing signs of a concussion, speak up, stop them from participating, and have them be evaluated by a medical professional.

If an athlete suffering from a concussion takes another concussive force before healing, they risk a condition called **second impact syndrome** which causes rapid and severe swelling of the brain, and is often fatal.

Prevention

While there is no magical piece of equipment that can prevent athletes from sustaining concussions, everyone involved in sports can play a role in helping to decrease the number of concussions suffered.

1. Players can demonstrate good sportsmanship and refrain from participating in excessively rough play with the intent of injuring others.
2. Coaches and instructors can teach proper techniques that minimize contact to the head.
3. Sports officials can promote safe and fair game play by consistently enforcing rules, and managing the emotional environment on the field of play to prevent the "in the heat of the moment" and retaliating situations.
4. Facility managers can ensure facilities are safe, minimizing holes or uneven playing surfaces, removing obstacles or obstructions, and making sure appropriate padding is in place on walls and poles when appropriate.
5. Administrators can assess program offerings, offer low- or no-contact versions of sports, and perform a risk-rating exercise for high-risk activities to determine if the department can effectively manage the risk.
6. Parents can explain the consequences of violence in sport and instill a sense of fair play and respect for the other athletes and for the sport itself.
7. Fans can stop reinforcing violent behavior.

Shared Responsibility

Concussion care is a team effort. Everyone involved with recreational sports shares the responsibility of knowing what concussions are and how they occur, how to recognize the signs and symptoms of concussion, and what to do when a concussion is suspected. We may not be able to prevent all concussions from happening, but we can work together to ensure that athletes suffering concussions get the care they need.

