

What Happens When You Suffer a Concussion?



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Q: What is a concussion?

A: A concussion refers to a post-traumatic brain injury that results in temporary interference with neurological function. It may be caused by a jolt, bump to the head, or any movement that causes the head and brain to move rapidly back and forth or rotate severely. Because 50 percent of concussions go unreported, the estimated number ranges from 2 million to 4 million per year. Concussions resulting from competitive sports make up approximately 20 percent of the total number. Sports with the highest number of concussions include hockey, football, women's soccer, wrestling, and cheerleading. Women appear to be more susceptible and more adversely affected than men, likely due to the anatomy of their necks. Because they are less muscular than men, their heads are more prone to snap back and forth or be rotated more quickly. Approximately 10 percent of concussions are associated with brief loss of consciousness or being "knocked out." Other possible symptoms include "fogginess" or feeling poorly, difficulty with concentration, headaches, memory impairment, dizziness, or balance problems, and occasionally nausea or vomiting. Concussed patients may appear dazed or stunned and be forgetful about events prior to the injury (retrograde amnesia) or after the fall or blow to the head (anterograde amnesia).

Q: How are concussions treated?

A: Clinicians at the University of Pittsburgh see over 10,000 new patients a year with concussions, and have characterized several presentations. These

include cognitive and fatigue complaints, anxiety and mood disturbances, dizziness or vestibular abnormalities, migraine-type headaches, difficulty focusing, and ocular or visual abnormalities. Treatment is dependent on the type of concussion and matching the care to the specific profile. Sometimes drugs are prescribed for depression or anxiety. Alternative approaches may include the use of natural anti-inflammatories like fish oil, vitamin D3, magnesium, resveratrol, cannabidiol (CBD), and turmeric. If the patient does not respond, and symptoms are problematic, hyperbaric oxygen therapy may be considered. When we assess a concussed patient, we include a psychosocial history, a study of the injury dynamics and mechanism, the symptoms and presentation, and then a thorough neurological evaluation including cognitive, balance, and ocular function. This will allow treatment tailored to the individual, and increase the likelihood of a successful outcome.

Q: What are the potential long-term effects?

A: When symptoms last longer than a few weeks, the condition is referred to as a post-concussion syndrome. Symptoms may include prolonged headaches, sensitivity to lights, dizziness or unsteadiness, difficulty concentrating, memory impairment, and decreased libido, as well as mood and sleep disturbances. One of the greatest advances in prevention of long-term post-concussion syndromes, particularly for athletes, has been not allowing them to return to contact sports before all symptoms and signs have cleared. This may involve taking a computer-based test called ImPACT. This assessment of memory, cognition, and the processing of information as well as a symptom score are available in most schools throughout the United States. A baseline test should be a prerequisite for participation in any contact sport. Since falls are the most common cause of concussions, there is a pediatric ImPACT test for ages 5-12 that is reasonable for almost any active child. □