

# Recognizing concussion key to getting proper treatment

By Jonathan Finnoff

Approximately 2 million to 3.5 million sports related concussions occur annually in the United States. While this number is significant, it probably underestimates the true number of concussions because athletes frequently don't realize they've sustained a concussion or do not report concussion symptoms to their coaches, parents or physician.

**What is a concussion?** A concussion is a brain injury that occurs when the brain, which is a soft, Jell-O like structure, is shaken around inside of the hard skull. When this occurs, the nerves in the brain are stretched and injured. A majority of the injury is functional, meaning that the nerve isn't killed but rather temporarily doesn't work. With proper treatment, these "stunned" nerves gradually recover. However, based upon brain autopsies of former athletes, concussions also cause some permanent nerve damage in the brain.

**How do I recognize a concussion?** One reason concussions are so difficult to recognize is due to their varied presentation. Many people think concussions only occur when the athlete is knocked out. Although it is true that any athlete who is knocked out certainly sustained a concussion, concussions rarely present themselves with a loss of consciousness. Most of the time, the athlete remains conscious but develops concussion symptoms such as a headache, dizziness, confusion, and memory problems. These symptoms are referred to as "post-concussion symptoms." By definition, any athlete who receives a hit that could cause a concussion and subsequently develops any of these symptoms has had a concussion.

**Post -**



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**concussion**  
**symptoms:**  
Headache,  
drowsiness,  
nausea,  
sensitivity to  
light,  
vomiting,  
sensitivity to  
noise, balance  
problems,  
irritability,  
dizziness,  
sadness,  
fatigue,  
nervousness,  
trouble  
falling  
asleep,  
feeling more  
emotional than  
usual,  
sleeping more  
than usual,  
numbness or  
tingling,  
sleeping less  
than usual,  
feeling slowed  
down, feeling  
mentally  
foggy,  
difficulty  
concentrating,  
difficulty  
remembering,  
visual  
problems.

**How serious are concussions?** Most concussed athletes recover over a week or two with proper treatment. However, some athletes may develop persistent, disabling post-concussive

symptoms referred to as post-concussion syndrome (PCS), or long-term brain problems such as chronic traumatic encephalopathy, early onset dementia, movement disorders, psychiatric disorders or potentially motor neuron disease. The most significant potential injury is second impact syndrome (SIS). SIS occurs when a concussed athlete who is still experiencing symptoms returns to athletics and gets another injury to the head. In this case, rather than just experiencing post-concussion symptoms, the blood vessels in the athlete's brain rapidly dilate, increasing the pressure inside the head, causing either death or severe brain injury.

**What should I do if I think someone has a concussion?** The first thing to do is have the person evaluated immediately. Any person who you suspect has concussion should not be allowed to return to competition the same day. The athlete should rest physically and cognitively, avoiding any activity that would increase the athlete's heart rate or blood pressure. Cognitive rest means avoiding any activity that requires significant amounts of concentration such as school work, video games or texting. The person also should avoid loud or bright environments. They will need to be seen by a sports medicine physician who will monitor their recovery and direct their return to sports..

**Key points for sports concussions:**

1. Concussions usually occur without a loss of consciousness.
2. The most common symptom is a headache.
3. Inappropriate management of concussions can result in serious complications including disabling post-concussive symptoms or death.
4. No athlete who sustains a concussion should return to play the same day as their injury.

5. The initial treatment for concussions is physical and cognitive rest, and avoidance of loud, stimulating environments.

6. Anyone who sustains a concussion should be evaluated and treated by a sports medicine physician experienced in concussion management.

*Tahoe Orthopedics and Sports Medicine is developing a comprehensive sports concussion program with the assistance of physician Jonathan Finnoff, an internationally recognized concussion expert and former co-director of the Mayo Clinic Sports Medicine Center Concussion Program. He recently joined the team of sports medicine clinicians at Tahoe Center for Orthopedics. To learn more about Tahoe Center for Orthopedics concussion program, go online.*