



Concussion 101

A concussion is a type of traumatic brain injury caused by a bump, blow or jolt to the head or by a hit to the body that makes the brain move rapidly back and forth.

According to the Centers for Disease Control and Prevention, the number of reported concussions doubled between 2002 and 2012, rising to 3.8 million a year. Studies have shown that women are more than twice as likely to get a head injury than men playing the same sport. As the number of young female athletes participating in sports grows, the rate of sport-related concussions in female athletes is increasing, as well.

Research suggests that female athletes experience different concussion characteristics than male athletes. Some possible reasons for these differences are that female athletes have lower neck strength and girth compared to male athletes and that female athletes are more likely to report symptoms and have longer recovery times.

Concussion signs and symptoms

Concussion symptoms can range from mild to very severe. All are to be taken seriously. The days of “getting your bell rung” and returning to play are over because the risk of another injury is just too great.

Some of the more common symptoms of concussion are:

- Headache
- Nausea
- Irritability
- Difficulty remembering or concentrating
- Trouble sleeping
- Blurred vision
- Balance problems
- Dizziness

Some changes you may see in concussed athletes:

- Acting dazed or stunned
- Becoming confused about their position or a coach’s instruction, or being unable to recall the time, score or opponent
- Answering slowly
- Moving clumsily

If you suspect a concussion

It’s important that the athlete is evaluated by a doctor with experience in concussions so that the concussion can be correctly diagnosed and managed to allow a timely and safe return to sports. Many sports leagues require written clearance.

When to call 911:

- Prolonged loss of consciousness or lethargy
- Convulsions or seizures

- Significant neck pain
- Numbness or weakness in arms or legs

When to drive to the ER:

- Worsening symptoms
- Persistent confusion, headache and vomiting
- Slurred speech
- Drowsiness
- Restlessness or agitation

The current approach is to use multiple evaluative tools to diagnose a concussion, including neurocognitive testing. The most common neurocognitive testing system is ImpACT, a computerized tool that assesses pre-concussion values for memory, reaction time and mental processing and then compares them to post-concussion values.

New treatment guidelines

- Brain and cognitive rest: Limit school work and avoid screen time, including television, computers and cell phones.
- Adequate sleep: Eight to 10 hours of sleep a night is advised, and naps are okay. Sleeping is the best rest for the young athlete’s brain.
- Social integration: Let athletes continue with some social activity to help them recover and limit the risk of depression.
- Light physical activity: Non-contact physical activity that does not worsen symptoms is encouraged early on, but don’t return to sport too soon. Studies have shown that after an athlete has sustained one concussion, he or she is more likely to sustain another that same season, which can lead to long-term cognitive deficits, memory issues and prolonged recovery.

Contact Us

For more information about ImpACT or how Stanford Children’s Health can coordinate baseline testing, contact us at **(844) 36-SPORT** or sports@stanfordchildrens.org.