

Guide to Sport Related Concussions For Student-Athletes, Parents, and Coaches

What is a concussion (SRC- Sport related concussion)?

A concussion is a brain injury resulting in a temporary disruption of normal brain function. A concussion occurs when the brain is violently rocked back and forth inside the skull (from a blow to the head or body, or from a whiplash type injury). An athlete DOES NOT need to lose consciousness (be “knocked out”) to suffer a concussion. In fact, less than ten percent of concussed athletes lose consciousness.

Concussion Facts

- A concussion is a type of traumatic brain injury. The result is a functional problem rather than a structural injury, thus it can't be seen with standard medical imaging (CT or MRI scans).
- It is estimated over 140,000 high school athletes across the United States suffer a concussion each year. (Data from National Federation of State High School Injury Surveillance System)
- Concussions occur most frequently in football, but ice hockey, lacrosse, soccer, basketball and cheer leading follow closely behind — all athletes are at risk.
- A concussion may cause multiple symptoms. Many symptoms appear immediately after the injury while others may develop over the next several days or weeks. The symptoms may be subtle and are often difficult to fully recognize. Headache is the most common symptom, but other problems (even without a headache reported) may indicate a concussion. Concussions are no longer labeled “mild” or “severe”. One symptom does not indicate a less dangerous concussion and numerous symptoms are not required for a concussion to be serious. In the old days, the term “getting your bell rung” was often used and many athletes with symptoms were told this was ‘part of the sport’ - these incidents are concussions and should be removed from sport and evaluated by a health care provider knowledgeable in Concussion Management before returning to sport.
- Concussion can cause symptoms which interfere with school, sleep, work and social life.
- Concussion symptoms may last from a few days to several months.
- An athlete should not return to sports or physical activity like physical education, conditioning, working-out, swimming, lifting weights, or dance/cheer while still having symptoms from a concussion. To do so, puts him or her at risk for prolonging symptoms and potential further injury.

What should I do if I think my child has had a concussion?

If an athlete is suspected of having a concussion, he or she must be immediately removed from activity. Continuing to play or work out when experiencing concussion symptoms can lead to worsening symptoms, and increase risk for further injury and possibly even death (Second Impact Syndrome). Parents and coaches are not expected to make the diagnosis of a concussion. A medical professional trained in the diagnosis and management of concussions will determine the diagnosis, usually seeing the athlete within 2-3 days of the injury. However, coaches and parents must be aware of the signs and symptoms of a concussion. If you are suspicious your child may have a concussion, he or she must stop

activity right away and remain out of activity until evaluated by a concussion management team physician. This is not only the “right thing to do” for the athlete- it’s also Kansas and Missouri state law!

IF IN DOUBT, GET CHECKED OUT!

All student-athletes who may have a concussion need to be evaluated by a health-care professional who is experienced in concussion management. You should call your child’s physician- or see a Concussion trained health care provider- and explain what has happened and follow your physician’s instructions.

If your child has worsening symptoms, begins vomiting, has a severe headache or is having difficulty staying awake or answering simple questions, he or she should immediately be taken to the emergency department. These symptoms may be a concussion- but they may also be clues to something other than a concussion.

What are the signs and symptoms of a concussion?

SIGNS OBSERVED BY PARENTS, FRIENDS, COACH, TEACHER OR SYMPTOMS REPORTED BY ATHLETE

While headache is most common, any of the following (with or without a headache) could indicate a Concussion

Headache	Feeling sluggish
Appears dazed or stunned	Loses consciousness
Is confused about what to do	Feeling foggy or groggy
Nausea	Shows behavior or personality changes
Forgets plays	Concentration or memory problems
Balance problems or dizziness	Can’t recall events prior to the incident
Is unsure of game, score, or opponent	Confusion
Double or fuzzy vision	Can’t recall events after the incident
Moves clumsily	Answers questions slowly or seems confused
Sensitivity to light or noise	Irritable or more emotional than usual

When can an athlete return to play following a concussion?

After a head injury, no athlete should return to play or practice on the same day. Concerns over athletes returning to play too quickly have led state lawmakers in almost all states to pass laws stating no player shall return to play the day of a suspected concussion, and the athlete must be cleared by an appropriate health-care professional before he or she is allowed to return to play in games or practices. Most state laws mandate players, parents and coaches receive education on the dangers of concussion as well as recognize the signs and symptoms of a concussion. Once an athlete no longer has symptoms of a concussion has a normal exam, and scores within normal limits on a neurocognitive test, he or she may proceed with activity in a step-wise fashion to allow the brain to re-adjust to exertion. Typically, the athlete will complete a new step each day as long as they continue to have no symptoms. An example of a return to play protocol is shown below:

Day 1: Light aerobic exercise for 10-20 minutes

Day 2: Light exercise and a body weight circuit for 30-40 minutes

Day 3: Moderate exercise and a plyometric and resistance workout for 50-60 minutes

Day 4: Limited controlled return to full contact practice

Day 5: Full Participation

If symptoms occur at any step, the athlete should cease activity and discuss with their health-care provider.

How can a concussion affect schoolwork?

Following a concussion, student-athletes may have difficulty in school. These problems may last from days to months, and often involve difficulties with short and long-term memory, concentration and organization.

In many cases after the injury, it is best to decrease the athlete's class load early in the recovery phase. This may include staying home from school for a few days, followed by academic accommodations (such as reduced class schedule), until the athlete has fully recovered. Decreasing the stress on the brain and not allowing the athlete to push through symptoms may help shorten the recovery time.

In the "old days" it was recommended to have a concussed athlete stay in a dark room and avoid all activity. Today- recommendations have changed- it is recommended to avoid anything that could cause a second injury (such as sport) and to avoid things that increase symptoms. But if school-work, listening to music, short periods of time reading or using the computer do not increase symptoms- this is "ok" in most cases. Driving (and using machinery) should be restricted until discussed with a Concussion trained health care provider.

What can I do as a Parent and/or Guardian?

- Both you and your child should learn to recognize the "Signs and Symptoms" of a concussion as listed above.
- Teach your child to tell the coaching staff (or certified athletic trainer or school nurse) if he or she experiences symptoms of a concussion.
- Emphasize to administrators, coaches, teachers and other parents your concerns and expectations about concussion and safe play.
- Teach your child to tell the coaching staff if he or she suspects a teammate has suffered a concussion.
- Ask teachers to monitor any decrease in grades or changes in behavior that could indicate a concussion.
- Report concussions that occurred during the school year to appropriate school staff. This will help monitoring injured athletes as they move to the next sport season.

Other Frequently Asked Questions

Why is it important athletes not return to play until they have completely recovered from a concussion?

Student-athletes that return to activity too soon (school work, social activity, weight lifting or sports activity), can prolong their recovery time. They also risk recurrent, cumulative or even catastrophic consequences if they suffer another concussion before the first concussion is resolved. Such risk and difficulties may be prevented if each athlete is allowed time to recover from his or her concussion and the return to play decisions are carefully and individually made. No athlete should return to sport or other at-risk activity when signs or symptoms of concussion are present. A concussion trained health care provider should give clearance before resuming sport.

Is a "CAT scan" (CT) or MRI needed to diagnose a concussion? Are there other tests that can help diagnose a concussion?

Diagnostic testing, which includes CT ("CAT") and MRI scans are rarely needed following a concussion. While these are helpful in identifying life-threatening head and brain injuries (skull fractures, bleeding or swelling), they are currently not sensitive in detecting a concussion. Concussion diagnosis is based upon the athlete's injury history in conjunction with a health-care provider's physical examination, neurocognitive testing, balance testing, and evaluation.

There is newer technology such as MRI spectroscopy and DTI that are being researched for possibly aiding in diagnosing concussions. Standards have not been accepted for use in patient care yet. In fact, there are even some blood tests (biomarkers) that are being considered to aid in diagnosing concussion- one test has been FDA approved but isn't being widely used in athletes yet.

What is the best treatment to help my child recover quickly from a concussion?

The best treatment for a concussion is rest. There are no research proven medications that can help speed the recovery. There is limited research on vitamins, supplements, over the counter medicines and prescription medicines that may help alleviate concussion symptoms in certain circumstances. Some medicines may cause worsening symptoms (or rebound headaches that initially help but then headaches increase). Talking to your health care provider to help decide if medications should be a part of the concussion treatment plan should take place within 2-3 days after the head injury. Exposure to loud noises, bright lights, computers, video games, television and phones (including text messaging) may worsen the symptoms of a concussion and may need to be limited or removed. As the symptoms lessen, you can allow increased use of computers, phone, video games, etc., but access may still need to be limited. If symptoms worsen, access of what activity "triggers" the symptoms must be limited and closely monitored by a parent or guardian.

How long do the symptoms of a concussion usually last?

The symptoms of a concussion will typically resolve within 10-14 days of the initial injury with rest and appropriate treatment. However, in some cases symptoms may last for many more weeks or even several months. Symptoms such as headache, memory problems or poor concentration, difficulty sleeping and mood changes can interfere with school, work and social interaction. In some instances, if there is delayed recovery, prescription medications, additional specialists such as a neuropsychologist, and vestibular rehabilitation (a form of physical therapy that can help dizziness, unsteadiness, visual problems, and nausea) may be required. Choosing a health care provider that is familiar with Concussion Management can help ensure the current standard of care treatment options are offered from the start- and what other providers may be able to help resolve symptoms more quickly.

How many concussions can an athlete have before he or she should stop playing sports?

There is no "magic number" of concussions that determine when an athlete should give up playing contact or collision sports. The circumstances that surround each individual injury, such as how the injury occurred and the duration of symptoms following the concussion, along with the athlete's personality, performance in school, and sleep are each important and must be individually considered when assessing an athlete's risk for and potential long-term consequences from further and potentially more serious injury. The decision to "retire" from contact sports is best reached after a complete evaluation by your child's health care provider and consultation with a physician or neuropsychologist who specializes in treating sports concussions. The short term goal is to have a resolution of symptoms and ability to return to academic and sport participation. The long term goals are to have no difficulty with memory or concentration, a normal personality and normal relationship with others, normal sleep, and the ability to perform the cognitive and physical demands the patient will need for their lifetime.

What is the purpose of the Return to Play (RTP) protocol?

Upon increasing activity after concussion, some athletes may experience a return of symptoms, indicating the brain has not fully healed from the initial injury. Therefore, a sport-specific and step-wise protocol is used and must be completed prior to full medical clearance. Successful completion of this indicates the brain is able to handle the demands of athletic participation. The protocol is typically five steps, each step separated by at least 24 hours, during which the athlete gradually increases duration

and intensity of athletic participation, while at the same time is monitored by a Certified Athletic Trainer (if available at your school/club) for any signs or symptoms.

New research has suggested that starting Step 1 (10-15 minutes of light aerobic exercise such as a fast walk- without resistance, without plyometric exercise, and no exercise that could risk another head injury) may be safe to start so long as symptoms are decreasing (rather than waiting for them to completely go away). Research continues to recommend not progressing with the Five Step Return to Sport (Steps 2-5) until completely symptom free. This can be discussed with your concussion management team.

Some of this information has been adapted from the CDC's "Heads up: Concussion in High School Sports" and the NFHS: A Parent's Guide to Concussion.



www.wellbodyKC.com/concussion