

PHYSICIAN'S CONCUSSION GUIDE

Quick Facts >

1. ALWAYS remove athletes immediately after suspecting a concussion. Do NOT allow return to play the same day with a concussion.
2. Athletes do NOT have to be knocked out to have a concussion. 90% of concussions occur without a loss of consciousness.
3. CT scans don't diagnose concussions. Everyone with a concussion has a normal CT scan.
4. It is OK to let someone fall asleep after being hit in the head. With careful monitoring, rest and sleep will be helpful.
5. "Warm Up for Return" is a graded process that requires a minimum of five days.
6. 9 out of 10 athletes will be back to normal within two weeks. They may miss a few games.
7. Kansas law requires a physician's signature (MD/DO) to "Return to Play."
8. Athletes who return to full contact too early risk Second Impact Syndrome, a rare but devastating brain injury that may result in death.
9. Concussions can affect driving, school work, sleep, emotions, relationships and self worth.
10. The "game plan" is not just about returning an athlete to their sport; it is about returning the person back to their life.

Recognition >

SIGNS OBSERVED BY OTHERS

- Appears dazed or stunned
- Is confused about assignment
- Forgets plays
- Is unsure of game, score or opponent
- Moves clumsily or has slurred speech
- Answers questions slowly
- Loses consciousness
- Shows behavior or personality changes
- Cannot recall events prior to hit
- Cannot recall events after hit

SYMPTOMS REPORTED BY ATHLETE

- Headache
- Nausea or vomiting
- Balance problems or dizziness
- Double or fuzzy vision
- Sensitivity to light or noise
- Feeling sluggish or drowsy
- Feeling foggy or groggy
- Concentration or memory problems
- Confusion

Definition >

A **concussion** is the most common form of head injury suffered by athletes. It is a form of traumatic brain injury that occurs when the brain is violently jarred back and forth or rotated inside the skull as a result of a blow to the head or body. This can "stun" the brain cells or even result in their death. You **do not** need to lose consciousness to suffer a concussion.

Any athlete in motion is at risk for a concussion. This may occur in any sport, to boys and girls alike. Symptoms may appear immediately or develop over several days. They may last a few days to several months and interfere with schoolwork and social life.

Management >

What do I do if I suspect an athlete has a concussion?

If you are on the sideline, immediately pull the athlete out of practice or the game to avoid further aggravating the injury. If necessary, check airway, breathing and circulation and pay special attention to a possible cervical spine injury. Look for signs or symptoms listed under the "Recognition" section of this guide when conducting an evaluation and consider the need for emergency medical services. Notify parents/guardians of the athlete's injury.

If not on the sideline, see the athlete within 48-72 hours after the initial injury. While the athlete is symptomatic and if the physical exam is abnormal, do not allow him/her to participate in any physical activity and limit mental activities.

If the athlete has a concussion, he/she will not be able to participate in practice or a game until a written authorization form is signed by a physician (MD/DO) as required by Kansas law.

When does the athlete need to visit the Emergency Department?

If a focal neurological deficit is noted or severe symptoms appear, such as vomiting, severe headache, difficulty answering simple questions, declining mental status, loss of consciousness or seizures, call 911 or refer immediately to an Emergency Department for further evaluation.

How should I conduct the sideline evaluation?

Once stabilized, and if no severe symptoms appear, the athlete can be examined by using KSCP's sideline concussion assessment SCORE Cards or SCAT3. A history and full neurological exam should be performed. If a concussion is suspected, do not allow the athlete to return to play. Serious complications may occur if the athlete returns to play following a concussion.

When should I order a CT scan or MRI?

Concussions occur at a cellular level beyond our ability to clearly see during a physical exam or with CT or MRI scans. If the injury is truly a concussion, these scans will be completely within normal limits. However, if symptoms are severe, prolonged or if focal neurological deficits are present, advanced imaging should be considered.

How should the athlete be treated during the concussion recovery?

- The athlete should not be left unmonitored for the initial 12-24 hours in case of clinical worsening. While it is not necessary to keep the athlete awake, he/she should be observed periodically to ensure he/she is resting comfortably and breathing easily.
- Establish a medical follow-up plan after the athlete is evaluated. Closely monitor the athlete until he/she returns to a baseline in terms of pain, emotions, sleep habits and ability to concentrate. Seek assistance from the coach, athletic trainer, designated school official or parents for daily evaluation of the athlete's symptoms.
- Encourage the athlete to rest as much as possible. He/she may need frequent naps during the first few days after the injury. The more aggressive your patient rests the brain, the sooner healing will occur.
- The athlete should avoid places with bright lights or loud noise and activities that

stimulate the brain because mental rest is vital to recovery. Recommend eliminating or reducing watching television or movies, texting, reading, playing video games and browsing on a computer.

- Do not allow the athlete to perform any physical activities, such as weightlifting, riding a bike, jogging, practice drills or other types of exercise.
- Do not allow the athlete to drive because the symptoms from a concussion can slow his/her reaction times and lead to an accident.
- It may be necessary to keep the athlete out of school or reduce attendance to partial days. Upon return to school, it may be necessary to recommend that the athlete delay tests and major assignments. The athlete may benefit from written instructions for homework and repeated presentation of new information.
- For more information, consult KSCP's Return-To-Learn Safe Progression guide.
- Use KSCP's **Return to Learn Classroom Rx ③** in coordination with the school concussion team.

When should I refer the athlete to a specialist?

If symptoms persist beyond 2 weeks or are unusually severe, consider referring your patient to a concussion specialist, such as a sports medicine physician, neurologist, neuropsychologist or physical medicine and rehabilitation physician.

What are possible complications from a concussion?

While 90% of athletes are back to their baseline within 7-10 days, there are 10% of athletes who will experience prolonged symptoms or other complications.

This is called **Post-Concussive Syndrome** and occurs when symptoms from a concussion are prolonged. Difficulty with concentration, memory and persistent headaches are common symptoms. A referral to a specialist for further evaluation and treatment may be required.

What might happen if the athlete returns to his/her sport too soon?

If an athlete receives another blow while still recovering from a first concussion, he/she could develop **Second Impact Syndrome**. This syndrome can cause serious life-long health difficulties or, in rare situations, even result in death. This possibility is a major reason why health care professionals are concerned about carefully treating any concussion. While the brain is still healing, it may not be able to compensate and protect itself from a new injury.

How can I help prevent concussions?

- Encourage a culture of safety within the local sports environment. This should include coaches, athletic trainers, school officials, parents and athletes – all who are concerned with an athlete's health and want to create a safe playing environment for each athlete.
- Establish yearly educational activities on concussions with coaches, athletic trainers, parents and student athletes.
- Help develop an emergency action plan for concussions with other local health professionals, school nurses, coaches, athletic trainers and school officials. This will ensure a prompt, coordinated response when a concussion is suspected.
- When an injury does occur, encourage athletes and parents to take the necessary time to heal.

SCORE Card >

The first health care professional that evaluates the athlete should complete KSCP's **SCORE Card ①**, a useful tool for monitoring and evaluating concussion symptoms. If you are not the first person to evaluate the athlete, make sure you receive a copy of **SCORE Card ①**. This will contain important information that will help you determine how to care for the athlete's concussion and monitor his/her progression from the injury.

At the initial visit, a complete neurological exam should accompany **SCORE Card ①** and **②** evaluations. Collect a history of previous concussions or head injuries.

Depending on the situation, the athlete may need to visit your office once a week or on a daily basis for a few days. Each time you see the patient, use the **SCORE Card ①** as a tool for serial monitoring.

Return to Play >

When can the student athlete start playing his/her sport again?

Only consider approving the Warm Up to Play progression once the student athlete is fully participating in school again without any symptoms. The athlete's return to sports will be a step-by-step process. Once he/she has no symptoms or signs of concussion and achieves normalized results on **SCORE Card ②**, a medical authorization will start a **Warm-up for Return ④**. This process should be monitored by an athletic trainer, coach or designated school official. Encourage the student to tell you, their parents, the athletic staff or teachers immediately if he/she does not feel quite right at any time.

After the athlete is symptom-free, what is the progression back to play?

Think of this progression as a warm up for the athlete to return to his/her sport. Each step takes at least 24 hours before moving on to the next step.

During this progression, the coach or athletic trainer should ask the athlete if any symptoms are starting to return. If symptoms recur, the athlete must stop for the day and rest. Before starting the progression again, the athlete must be completely symptom-free.

Step 1. Light aerobic exercise, including walking or riding an exercise bike. No weightlifting.

Step 2. Running in a gym or on the field. No helmet or equipment should be used.

Step 3. Non-contact training drills and full equipment. Start light resistance training or light weight training.

Step 4. Full contact training under supervision of coach/athletic trainer.

Step 5. Return to competition or game play.

The athlete must be seen by a physician (MD/DO) during the warm up progression to be legally released for return to competition or practice.

Other Resources >

Kansas Law: www.kslegislature.org/li/b2011_12/year1/measures/hb2182/

KSHSAA Guidelines: www.kshsaa.org/Public/General/ConcussionGuidelines.cfm

Centers for Disease Control and Prevention: www.cdc.gov/concussion/HeadsUp/youth.html

Kansas Sports Concussion Partnership: www.kansasconcussion.org

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