A FACT SHEET FOR

High School Coaches

CDC HEADS UP
SAFE BRAIN. STRONGER FUTURE.

Below is information to help high school coaches protect athletes from concussion or other serious brain injury, and to help coaches know what to do if a concussion occurs.

What is a concussion?

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 causes the head and brain to move quickly back and forth. This fast movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging brain cells.

What is a subconcussive head impact?

A subconcussive head impact is a bump, blow, or jolt to the head that *does not* cause symptoms. This differs from concussions, which *do* cause symptoms. A collision while playing sports is one way a person can get a subconcussive head impact. Studies are ongoing to learn about subconcussive head impacts and how these impacts may or may not affect the brain of young athletes.

How can I keep athletes safe?

As a high school coach, your actions can help lower an athlete's chances of getting a concussion or other serious injury. Aggressive or unsportsmanlike behavior among athletes can increase their chances of getting a concussion or other serious injury.[3] Here are some ways you can help:

Talk with athletes about concussion:

- Set time aside throughout the season to talk about concussion.
- Ask athletes about any concerns they have about reporting concussion symptoms.
- Remind athletes that safety comes first and that you expect them to tell you and their parent(s) if they think they have experienced a bump, blow, or jolt to their head and "don't feel right."

Focus on safety at games and practices:

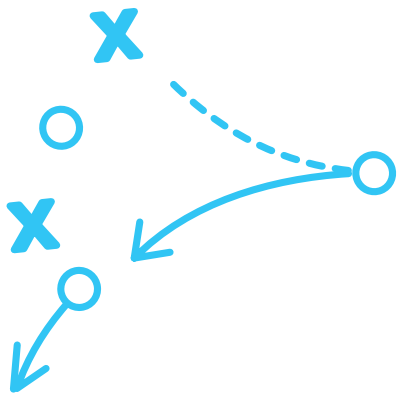
- Teach athletes ways to lower the chances of getting a hit to the head.
- Enforce rules that limit or remove the risk of head impacts.
- Tell athletes that good sportsmanship is expected at all times, both on and off the field.
- Be sure to also work closely with your team's athletic trainer, when available, to promote concussion safety.

Multiple concussions

Athletes who have ever had a concussion have a higher chance of getting another concussion. A repeat concussion can lead to more severe symptoms and longer recovery.[1,2]

Coach's to-do list:

- ✓ Talk with athletes about concussion.
- ✓ Teach athletes ways to lower their chances of getting a hit to the head.
- ✓ Encourage concussion reporting among your athletes.
- ✓ Know what to do if you think an athlete has a concussion.
- ✓ Learn how to help an athlete safely return to play after a concussion.



Make sure athletes do not perform these unsafe actions:

- Use their head or helmet to contact another athlete.
- Make illegal contact or check, tackle, or collide with an unprotected opponent.
- Try to injure another athlete.

Stay up to date on concussion information:

- Review your state, league, or school's concussion plans and rules.
- Take a training course on concussion. The Centers for Disease Control and Prevention (CDC) offers free concussion training at cdc.gov/HEADSUP.
- Download CDC's HEADS UP app or another resource that provides a list of concussion signs and symptoms.

Check equipment and sports facilities:

- Make sure all athletes wear a helmet that is appropriate for the sport or activity; ensure that the helmet fits well and is in good condition.
- Work with the game or event manager to fix any concerns, such as tripping hazards or goal posts without proper padding.

One study found that nearly 70% of athletes continued to play with concussion symptoms.[4]

How can I spot a possible concussion?

Athletes who show or report one or more of the signs and symptoms listed below—or who simply say they just "don't feel right"—after a bump, blow, or jolt to the head or body may have a concussion or other serious brain injury. Concussion signs and symptoms often show up soon after the injury, but it can be hard to tell how serious the concussion is at first. Some symptoms may not show up for hours or days.

Signs coaches or parents may observe:

- Seems confused
- Forgets an instruction or is unsure of the game, position, score, or opponent
- Moves clumsily
- Answers questions slowly or repeats questions
- Can't remember events before or after the hit, bump, or fall
- Loses consciousness (even for a moment)
- Has behavior or personality changes

Symptoms athletes may report:

- Headache
- Nausea or vomiting
- Dizziness or balance problems
- Bothered by light or noise
- Feeling foggy or groggy
- Trouble concentrating or problems with short- or long-term memory
- Does not "feel right"

Signs of a more serious brain injury

In rare cases, a concussion can cause dangerous bleeding in the brain, which puts pressure on the skull. Call 9-1-1 if an athlete develops one or more of these danger signs after a bump, blow, or jolt to the head or body:

- A headache that gets worse and does not go away
- Significant nausea or repeated vomiting
- Unusual behavior, increased confusion, restlessness, or agitation
- Drowsiness or inability to wake up
- Slurred speech, weakness, numbness, or decreased coordination
- Convulsions or seizures (shaking or twitching)
- Loss of consciousness (passing out)

Some athletes may not report a concussion because they don't think a concussion is serious.

They may also worry about:

- Losing their position on the team or losing playing time during a game,
- Putting their future sports career at risk,
- Looking weak,
- Letting down their teammates or the team, and/or
- What their coach or teammates think of them.[5-7]

What should I do if an athlete has a possible concussion?

As a coach, if you think an athlete may have a concussion, you should:

Remove the athlete from play.

When in doubt, sit them out! Record and provide details on the following information to help the school nurse, athletic trainer, or first responders assess the athlete after the injury:

- Cause of the injury and force of the hit or blow to the head or body
- Any loss of consciousness (passed out) and for how long
- Any memory loss right after the injury
- Any seizures right after the injury
- Number of previous concussions (if any)

Keep an athlete with a possible concussion out of play on the same day of the injury and until cleared by a healthcare provider.

Do not try to judge the severity of the injury yourself. Only a healthcare provider should assess an athlete for a possible concussion and decide when it is safe for the athlete to return to play.

Inform the athlete's parent(s) about the possible concussion.

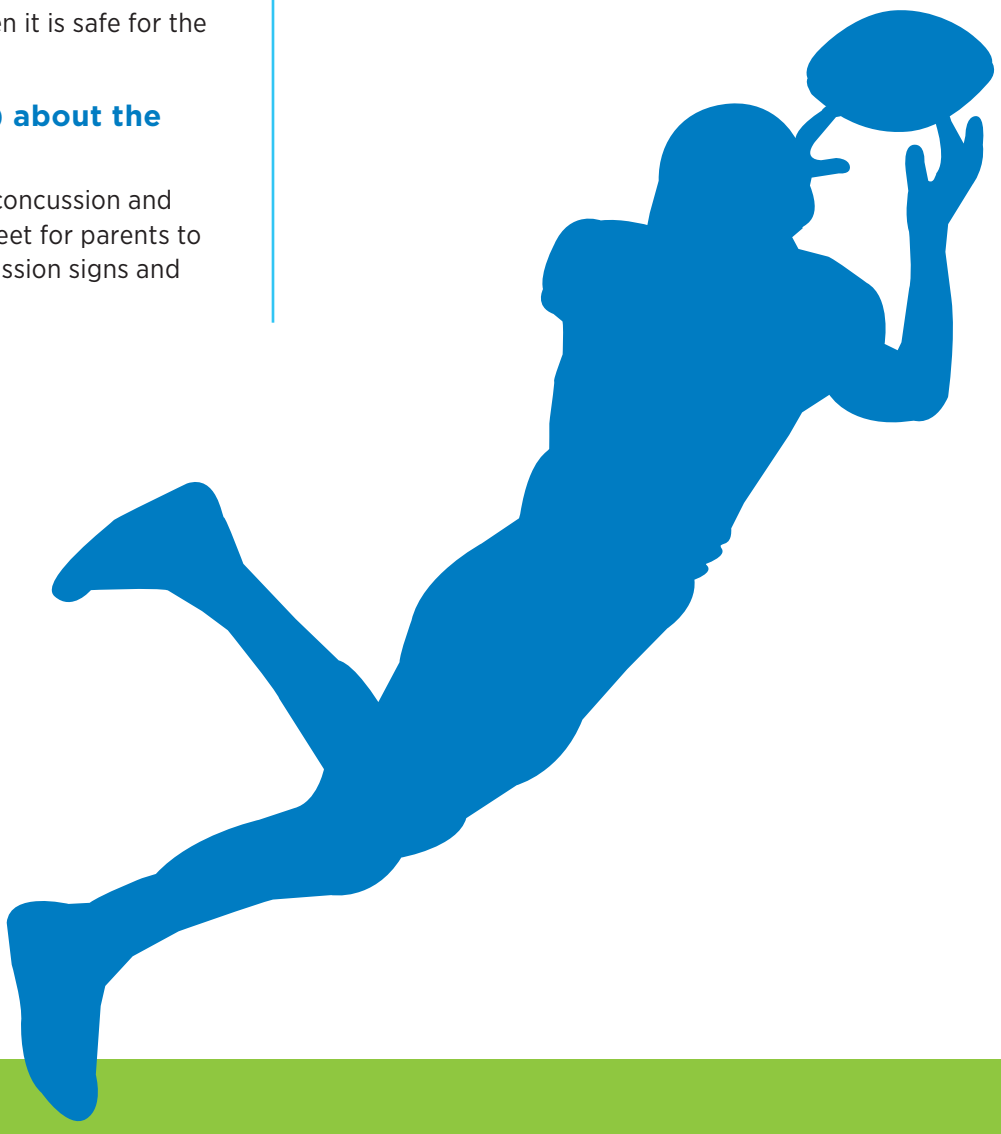
Let parents know about the possible concussion and give them the CDC HEADS UP fact sheet for parents to help them watch the athlete for concussion signs and symptoms at home.

Ask for written instructions from the athlete's healthcare provider on return to play.

This should include information about when the athlete can return to play and steps you should take to help the athlete safely return to play. Athletes who continue to play while having concussion symptoms have a greater chance of getting another concussion. A repeat concussion that occurs before the brain has fully healed can be very serious and can increase the chance for long-term problems. It can even be fatal.

Offer support during recovery.

An athlete may feel frustrated, sad, angry, or lonely while recovering from a concussion. Talk with them about it, and allow an athlete recovering from a concussion to stay in touch with their teammates, such as cheering on their team at practices and competitions.



What steps should I take to help an athlete return to play?

An athlete's return to school and sports should be a gradual process that is approved and carefully managed and monitored by a healthcare provider. When available, be sure to also work closely with your team's certified athletic trainer.

There are six gradual steps to help an athlete safely return to play. These steps should not be done in one day, but instead over days, weeks, or months. ***An athlete should move to the next step only if they do not have any new symptoms at the current step.***

Step 1: Return to non-sports activities, such as school, with a greenlight from the healthcare provider to begin the return-to-play process

Step 2: Light aerobic exercise

- Goal: Increase the athlete's heart rate
- Activities: Slow to medium walking or light stationary cycling

Step 3: Sport-specific exercise

- Goal: Add movement
- Activities: Running or skating drills; no activities with risk for contact

Step 4: Non-contact training drills

- Goal: Increase exercise, coordination, and thinking
- Activities: Harder training drills and progressive resistance training

Step 5: Full-contact practice

- Goal: Restore confidence and have coaching staff assess functional skills
- Activities: Normal training activities

Step 6: Return to regular sports activity

Remember: It is important for you and the athlete's parent(s) to watch for concussion symptoms after each day's activities, particularly after each increase in activity. If an athlete's concussion symptoms come back, or if he or she gets new symptoms when becoming more active at any step, this is a sign that the athlete is working too hard. The athlete should stop these activities, and the athlete's parent should contact the healthcare provider. After the athlete's healthcare provider says it is okay, the athlete can begin at the step before the symptoms started.

1. Chrisman SPD, Lowry S, Herring SA, et al. Concussion incidence, duration, and return to school and sport in 5- to 14-year-old American football athletes. *J Pediatr.* 2019;207:176-184. doi:10.1016/j.jpeds.2018.11.003.

2. Guskiewicz KM, McCrea M, Marshall SW, et al. Cumulative effects associated with recurrent concussion in collegiate football players: the NCAA Concussion Study. *JAMA.* 2003;290(19):2549-2555.

3. Collins CL, Fields SK, Comstock RD. When the rules of the game are broken: what proportion of high school sports-related injuries are related to illegal activity? *Inj Prev.* 2008;14(1):34-38.

4. Rivara FP, Schiff MA, Chrisman SP, Chung SK, Ellenbogen RG, Herring SA. The effect of coach education on reporting of concussions among high school athletes after passage of a concussion law. *Am J Sports Med.* 2014;42(5):1197-1203.

5. Kerr ZY, Register-Mihalik JK, Marshall SW, Evenson KR, Mihalik JP, Guskiewicz KM. Disclosure and non-disclosure of concussion and concussion symptoms in athletes: review and application of the socio-ecological framework. *Brain Inj.* 2014;28(8):1009-1021.

6. Register-Mihalik JK, Guskiewicz KM, McLeod TC, Linnan LA, Mueller FO, Marshall SW. Knowledge, attitude, and concussion-reporting behaviors among high school athletes: a preliminary study. *J Athl Train.* 2013;48(5):645-653.

7. Chrisman SP, Quitiquit C, Rivara FP. Qualitative study of barriers to concussive symptom reporting in high school athletics. *J Adolesc Health.* 2013;52(3):330-335.

The information provided in this fact sheet or through linkages to other sites is not a substitute for medical or professional care. Questions about diagnosis and treatment for concussion should be directed to a physician or other healthcare provider.

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