National Federation of State
High School Associations

A Parent's / Guardian's Guide To Concussion

National Federation of State High School Associations (NFHS)
Sports Medicine Advisory Committee (SMAC)

What is a concussion?

- A concussion is a brain injury that results in a temporary disruption of normal brain function. A concussion occurs when the brain is violently moved within the skull, typically from a blow to the head or body. An athlete does not need to lose consciousness (be "knocked-out") to suffer a concussion. In fact, less than ten percent of concussed athletes suffer loss of consciousness.

Concussion Facts

- A concussion is a type of traumatic brain injury. The result is a functional problem rather than a clear structural injury, causing it to be invisible to standard medical imaging (CT, or "CAT" scans, and MRI scans).
- It is estimated that over 300,000 high school athletes across the United States suffer a concussion each year. (Data from the NFHS Injury Surveillance System, "High School RIO™")
- Concussions occur most frequently in football, but ice hockey, lacrosse, soccer, and basketball follow closely behind. All athletes are at risk, in all activities, regardless of gender.
- A concussion may cause multiple symptoms that can be categorized as physical, behavioral, and cognitive. Physical symptoms include headaches, dizziness, and sleep changes, among others. Some behavioral changes include irritability, anxiety, and depression. Cognitive symptoms, or thinking changes, include trouble with focus, memory, and word finding. Many symptoms appear immediately after the injury, while others may develop over the next several days. Concussions can result in symptoms that interfere with normal daily life in addition to difficulty with school, work, and social life.
- Concussion symptoms may last from a few days to several months. It is important to remember that each student athlete responds and recovers differently.
- Athletes should not return to sports or activities that will put them at risk for another head injury until the concussion has completely resolved. To do so puts them at risk for prolonged symptoms and a more severe injury. Participation in physical education classes or exercise should be discussed with a qualified appropriate health-care professional.

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

If an athlete is suspected of having a concussion, the athlete must be immediately removed from that activity and be evaluated by a qualified appropriate health-care professional. Continuing to exercise, practice, or play when experiencing concussion

symptoms can lead to worsening of symptoms, increased risk for further injury and rarely death. 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 do so. However, you must be aware of the signs and symptoms of a concussion. If you are suspicious that your child has suffered a concussion, your child must stop activity right away and be evaluated.

When in doubt, sit them out!

All student-athletes who sustain a concussion need to be evaluated by a health care professional who is experienced in concussion management. If your child's school has an athletic trainer (AT), please inform the AT of your concerns. You should call your child's physician and explain what has happened and follow your physician's instructions. If your child is vomiting, has a severe headache, is having difficulty staying awake or difficulty answering simple questions, you should take your child for immediate emergency medical attention.

What are the signs and symptoms of a concussion?

SIGNS OBSERVED BY PARENTS, ATHLETIC TRAINERS, FRIENDS, TEACHERS OR COACHES
Appears dazed or stunned
Is confused about what to do
Forgets plays
Is unsure of game, score, or opponent
Moves clumsily
Answers questions slowly
Loses consciousness
Shows behavior or personality changes
Can't recall events prior to hit
Can't recall events after hit

SYMPTOMS REPORTED BY ATHLETE
Headache
Nausea
Balance problems or dizziness
Double or fuzzy vision
Sensitivity to light or noise
Feeling sluggish
Feeling foggy or groggy
Concentration or memory problems
Confusion

When can an athlete return to play following a concussion?
After suffering a concussion, **no athlete should EVER return to play or practice on that same day**. Studies have shown that the young brain does not recover quickly enough for an athlete to safely return to activity in such a short time.

Concerns over athletes returning to play too quickly have led lawmakers in all 50 states and the District of Columbia to pass laws stating that **no player shall return to play the day of a concussion, and the athlete must be cleared by an appropriate health-**

care professional before being allowed to return to play in games or practices. The laws typically also mandate that players, parents and coaches receive education on the dangers and recognizing the signs and symptoms of concussion. Click here to see what your state law requires: http://usafootball.com/blog/health-and-safety/see-where-your-state-stands-concussion-law.

Once an athlete no longer has symptoms of a concussion AND is cleared for return to play, the athlete should proceed with activity in a step-wise fashion in a carefully controlled and monitored environment to allow the brain to re-adjust to exertion. On average, the athlete will complete a new step every 24 hours. **Please be aware that some states mandate for a longer duration before return to play.** An example of a typical return-to-play schedule is shown below:

Step *1*: Light exercise, including walking or riding an exercise bike. No weightlifting.
Step *2*: Running in the gym or on the field. No helmet or other equipment.
Step *3*: Non-contact training drills in full equipment. Weight training can begin.
Step *4*: Full contact practice or training.
Step *5*: Game play.

- **If symptoms occur at any step, the athlete should immediately stop activity and consult with a qualified appropriate health-care professional before moving on.**

How can a concussion affect schoolwork?
Following a concussion, many student-athletes have difficulty in school. These problems may last from days to months and often involve difficulties with short-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 adjustments (such as a reduced class schedule), until the athlete has fully recovered. Decreasing the stress on the brain and not allowing the athlete to push through symptoms will hasten the recovery time and ensure total resolution of symptoms.

What can I do?

- Both you and your child should learn to recognize the "Signs and Symptoms" of concussion as listed above.
- Encourage your child to tell the medical and/or coaching staff if any of these signs and symptoms appear after a blow to the head or body.
- Emphasize to administrators, coaches, physicians, athletic trainers, teachers and other parents your concerns and expectations about concussion and safe play.
- Encourage your child to tell the medical and coaching staff if there is suspicion that a teammate has suffered a concussion.
- Ask teachers to monitor any decrease in grades or changes in behavior in students that could indicate a concussion.
- Report concussions that occurred during the school year to appropriate school staff. This will help in monitoring injured athletes as they move to the next season's sports.

Click here for more information about returning to school after a concussion:
http://www.cdc.gov/headsup/basics/return_to_school.html

Other Frequently Asked Questions:

Why is it so important that athletes not return to play until they have completely recovered from a concussion?
Student-athletes that return to play too soon may lengthen their recovery time. They also risk recurrent, cumulative or even catastrophic consequences if they suffer another concussion. Such risk and difficulties are prevented if each athlete is allowed time to recover from a 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 and recovery is ongoing.

Is a "CAT scan" or MRI needed to diagnose a concussion?
No! Concussion diagnosis is based upon the athlete's history of the injury and an appropriate health-care professional's physical examination and testing. CT and MRI scans are rarely needed following a concussion. However, they are helpful in identifying life-threatening head and brain injuries such as skull fractures, bleeding or swelling.

What is the best treatment to help my child recover quickly from a concussion?
Treatment for concussion varies from one person to the next. Immediately after a concussion, the best treatment is physical and cognitive rest. Exposure to loud noises, bright lights, computers, video games, television and phones (including text messaging) may worsen the symptoms of a concussion. You should allow your child to rest as much as possible in the days following a concussion. As the symptoms lessen, the appropriate health-care professional may allow increased use of computers, phone, video games, etc., but the access must be lessened or eliminated if symptoms worsen. There are no medications to treat concussions, but an appropriate health-care professional may prescribe medications and therapies to treat symptoms of a concussion, such as headache, dizziness, sleep changes, etc. Some athletes may require rehabilitative therapies, such as physical, occupational, vestibular, ocular or speech/cognitive. Others may require treatment for mood and behavior changes.

How long do the symptoms of a concussion usually last?
For most concussions, symptoms will usually go away within 2–3 weeks of the initial injury. You should anticipate that your child will likely be held out of full participation in sports for several weeks following a concussion. In some cases, symptoms may last for many more weeks or sometimes several months. Symptoms such as headache, memory problems, poor concentration, difficulty sleeping and mood changes can interfere with school, work, and social interactions. The potential for such long-term symptoms indicates the need for careful management of all concussions.

How many concussions can an athlete have before consideration to 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 as well as the number and duration of symptoms following the concussion, are very important. These circumstances must be individually considered when assessing an athlete's risk for potential long-term consequences and potentially more serious brain injuries. The decision to "retire" from sports is a decision best reached after a complete evaluation by your child's primary care provider and consultation with an appropriate health-care professional who specializes in treating concussions.

I've read recently that concussions may cause long-term brain damage in athletes, especially professional football players. Is this a risk for high school athletes who have had a concussion?

The issue of "chronic traumatic encephalopathy (CTE)" has received a great deal of media attention. Currently, CTE can only be diagnosed by autopsy. It has been described in the brains of professional and amateur athletes, including boxers, football players, hockey players, and soccer players, among others. Very little is known about all the causes of these dramatic abnormalities in the brains of these unfortunate players. At this time we do not know the long-term effects of concussions or the cumulative effects of multiple sub-concussive blows that happen during high school athletics. In light of this, it is important to carefully manage every concussion and all concussion-like signs and symptoms on an individual basis.

Some of this information has been adapted from the CDC's "Heads Up: Concussion in High School Sports" materials by the NFHS's Sports Medicine Advisory Committee. Please go to **www.cdc.gov/ncipc/tbi/Coaches_Tool_Kit.htm** for more information.

Revised and Approved April 2016
April 2013
April 2010

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The NFHS regularly distributes position statements and guidelines to promote public awareness of certain health and safety-related issues. Such information is neither exhaustive nor necessarily applicable to all circumstances or individuals, and is no substitute for consultation with appropriate health-care professionals. Statutes, codes or environmental conditions may be relevant. NFHS position statements or guidelines should be considered in conjunction with other pertinent materials when taking action or planning care. The NFHS reserves the right to rescind or modify any such document at any time.

CONCUSSION FACT SHEET FOR PARENTS

HEADS UP CONCUSSION

WHAT IS A CONCUSSION?

A concussion is a type of traumatic brain injury. Concussions are caused by a bump or blow to the head. Even a "ding," "getting your bell rung," or what seems to be a mild bump or blow to the head can be serious.

You can't see a concussion. Signs and symptoms of concussion can show up right after the injury or may not appear or be noticed until days or weeks after the injury. If your child reports any symptoms of concussion, or if you notice the symptoms yourself, seek medical attention right away.

WHAT ARE THE SIGNS AND SYMPTOMS OF CONCUSSION?

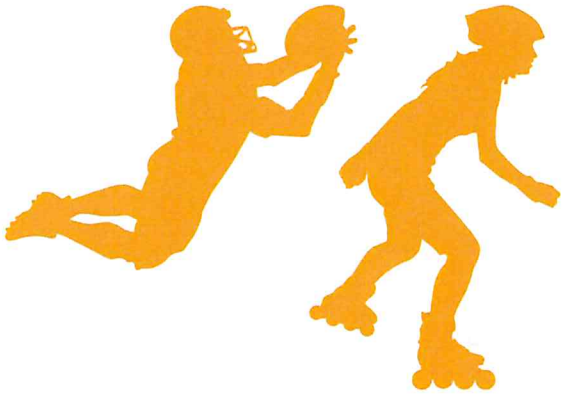
If your child has experienced a bump or blow to the head during a game or practice, look for any of the following signs of a concussion:

SYMPTOMS REPORTED BY ATHLETE:

- Headache or "pressure" in head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light
- Sensitivity to noise
- Feeling sluggish, hazy, foggy, or groggy
- Concentration or memory problems
- Confusion
- Just not "feeling right" or is "feeling down"

SIGNS OBSERVED BY PARENTS/ GUARDIANS:

- Appears dazed or stunned
- Is confused about assignment or position
- Forgets an instruction
- Is unsure of game, score, or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows mood, behavior, or personality changes



DANGER SIGNS

Be alert for symptoms that worsen over time. Your child or teen should be seen in an emergency department right away if s/he has:

- One pupil (the black part in the middle of the eye) larger than the other
- Drowsiness or cannot be awakened
- A headache that gets worse and does not go away
- Weakness, numbness, or decreased coordination
- Repeated vomiting or nausea
- Slurred speech
- Convulsions or seizures
- Difficulty recognizing people or places
- Increasing confusion, restlessness, or agitation
- Unusual behavior
- Loss of consciousness (even a brief loss of consciousness should be taken seriously)

WHAT SHOULD YOU DO IF YOU THINK YOUR CHILD HAS A CONCUSSION?

1. SEEK MEDICAL ATTENTION RIGHT AWAY
   A health care professional will be able to decide how serious the concussion is and when it is safe for your child to return to regular activities, including sports.
2. KEEP YOUR CHILD OUT OF PLAY.
   Concussions take time to heal. Don't let your child return to play the day of the injury and until a health care professional says it's OK. Children who return to play too soon - while the brain is still healing - risk a greater chance of having a second concussion. Repeat or later concussions can be very serious. They can cause permanent brain damage, affecting your child for a lifetime.
3. TELL YOUR CHILD'S COACH ABOUT ANY PREVIOUS CONCUSSION.
   Coaches should know if your child had a previous concussion. Your child's coach may not know about a concussion your child received in another sport or activity unless you tell the coach.

HOW CAN YOU HELP YOUR CHILD PREVENT A CONCUSSION OR OTHER SERIOUS BRAIN INJURY?

- Ensure that they follow their coach's rules for safety and the rules of the sport.
- Encourage them to practice good sportsmanship at all times.
- Make sure they wear the right protective equipment for their activity. Protective equipment should fit properly and be well maintained.
- Wearing a helmet is a must to reduce the risk of a serious brain injury or skull fracture.
  - However, helmets are not designed to prevent concussions. There is no "concussion-proof" helmet. So, even with a helmet, it is important for kids and teens to avoid hits to the head.

HOW CAN I HELP MY CHILD RETURN TO SCHOOL SAFELY AFTER A CONCUSSION?

Children and teens who return to school after a concussion may need to:

- Take rest breaks as needed
- Spend fewer hours at school
- Be given more time to take tests or complete assignments
- Receive help with schoolwork
- Reduce time spent reading, writing, or on the computer

Talk with your child's teachers, school nurse, coach, speech-language pathologist, or counselor about your child's concussion and symptoms. As your child's symptoms decrease, the extra help or support can be removed gradually.

HEADS UP

JOIN THE CONVERSATION ↳ www.facebook.com/CDCHeadsUp

TO LEARN MORE GO TO >> WWW.CDC.GOV/CONCUSSION

Content Source: CDC's Heads Up Program. Created through a grant to the CDC Foundation from the National Operating Committee on Standards for Athletic Equipment (NOCSAE).