



A PARENT'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 which results in a temporary disruption of normal brain function. A concussion occurs when the brain is violently rocked back and forth or twisted inside 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, and 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 more obvious functional problem than a clear structural injury, causing it to be invisible to standard medical imaging (CT and MRI scans).
- It is estimated that over 140,000 high school athletes across the United States suffer a concussion each year. (Data from NFHS Injury Surveillance System)
- Concussions occur most frequently in football, but boys’ ice hockey, boys’ lacrosse, girls’ soccer, girls’ lacrosse and girls’ basketball 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.
- Concussions can cause symptoms which interfere with school, 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 or working-out while still having symptoms from a concussion. To do so puts them at risk for prolonging symptoms and 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 that activity. Continuing to play or work out when experiencing concussion symptoms can lead to worsening of symptoms, increased risk for further injury and possibly death. Parents and coaches are not expected to be able to make the diagnosis of a concussion. A medical professional trained in the diagnosis and management of concussions will determine the diagnosis. However, you must be aware

of the signs and symptoms of a concussion. If you are suspicious your child has suffered a concussion, he or she 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. 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 answering simple questions, he or she should be immediately taken to the emergency department.

What are the signs and symptoms of a concussion?

SIGNS OBSERVED BY PARENTS, FRIENDS, TEACHERS OR COACHES	SYMPTOMS REPORTED BY ATHLETE
Appears dazed or stunned	Headache
Is confused about what to do	Nausea
Forgets plays	Balance problems or dizziness
Is unsure of game, score, or opponent	Double or fuzzy vision
Moves clumsily	Sensitivity to light or noise
Answers questions slowly	Feeling sluggish
Loses consciousness	Feeling foggy or groggy
Shows behavior or personality changes	Concentration or memory problems
Can't recall events prior to hit	Confusion
Can't recall events after hit	

When can an athlete return to play following a concussion?

After suffering a concussion, **no athlete should return to play or practice on that same day.** Previously, athletes were allowed to return to play if their symptoms resolved within 15 minutes of the injury. 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 state lawmakers in almost all states to pass laws stating that **no player shall return to play that day following a 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.

The laws typically also mandate that players, parents and coaches receive education on the dangers and recognizing the signs and symptoms of concussion.

Once an athlete no longer has symptoms of a concussion and is cleared for return to play, he or she should proceed with activity in a step-wise fashion to allow the brain to re-adjust to exertion. On average, the athlete will complete a new step each day. An example of a typical return-to-play schedule is shown below:

Day 1: Light exercise, including walking or riding an exercise bike. No weight-lifting.

Day 2: Running in the gym or on the field. No helmet or other equipment.

Day 3: Non-contact training drills in full equipment. Weight-training can begin.

Day 4: Full contact practice or training.

Day 5: Game play.

If symptoms occur at any step, the athlete should cease activity and be re-evaluated by their health care provider.

How can a concussion affect schoolwork?

Following a concussion, many student-athletes will 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 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 shorten the recovery time.

What can I do?

- Both you and your child should learn to recognize the "Signs and Symptoms" of concussion as listed above.
- Teach your child to tell the coaching staff if he or she experiences such symptoms.
- 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 that 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 in monitoring injured athletes as they move to the next season's sports.

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 any activity too soon (school work, social activity or sports activity), can cause the recovery time to take longer. 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 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 and recovery is ongoing.

Is a “CAT scan” or MRI needed to 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 insensitive to concussive injuries and do not aid in the diagnosis of concussion. Concussion diagnosis is based upon the athlete’s story of the injury and a health care provider’s physical examination and testing.

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 medications that can help speed the recovery. 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, you can allow increased use of computers, phone, video games, etc., but the access must be lessened or eliminated, if symptoms worsen.

How long do the symptoms of a concussion usually last?

The symptoms of a concussion will usually go away within 2–3 weeks of the initial injury. You should anticipate that your child will likely be out full participation in sports for about 3-4 weeks following a concussion. However, in some cases symptoms may last for many more weeks or even 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 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, are very important and must be individually considered when assessing an athlete’s risk for and potential long-term consequences from incurring further and potentially more serious concussions. 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 a physician or neuropsychologist who specializes in treating sports concussions.

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

The issue of "chronic traumatic encephalopathy (CTE)" in former professional players has received a great deal of media attention lately. Very little is known about what may be causing these dramatic abnormalities in the brains of these unfortunate players. At this time we do not know the long-term effects of concussions (or even the frequent sub-concussive impacts) which 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.

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April 2010**

DISCLAIMER – NFHS Position Statements and Guidelines

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.



Soft or Padded Headgear in Non-Helmeted Sports Position Statement

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

The NFHS SMAC has developed the following position statement regarding soft or padded headgear products in non-helmeted sports:

The NFHS does not consider soft or padded headgear products as effective equipment in preventing a concussion in non-helmeted sports. As explained below, soft or padded headgear products may be worn in non-helmeted sports that allow for such optional equipment, but the intent of that equipment should be for reasons other than concussion prevention. Valid scientific research should be pursued to more definitively determine evidence-based efficacy regarding using such products to decrease the incidence of concussion. However, no currently available soft or padded headgear can prevent a concussion.

The NFHS recommends caution in using soft or padded headgear devices to permit medical clearance of a student-athlete, if he or she would otherwise not be medically cleared to participate in sports. Currently, wearing such headgear as a condition to play in order to prevent another concussion is not scientifically or medically supported; therefore, a medical waiver for wearing this type of equipment in the case of hastening return to play after a concussion is inappropriate. However, this equipment may be used to cover lacerations and sutures, if these devices are deemed appropriate within the sport's playing rules.

Current design and recommended use of these devices do not address the proposed mechanism of concussive injury, that being acceleration, deceleration and rotational forces acting on the brain. Schools should refer to equipment standards from the National Operating Committee on Standards for Athletic Equipment (NOCSAE), American Society for Testing Materials (ASTM), and the Hockey Equipment Certification Council, Inc. (HECC), when considering protective equipment for student-athletes, and monitor that the equipment is being used for mitigating the risk of injuries for which the equipment is designed.

When considering the use of optional soft or padded headgear products in non-helmeted sports, athletes and coaches should take the time to read the qualifying statements provided with such products that address specific limitations, particularly those related to preventing serious head injuries. Wearing such products may provide a false sense of security in concussion protection to student-athletes, coaches and parents. Moreover, a false sense of security in concussion protection may increase the likelihood that players, coaches and parents will consider a given medical condition to be adequately addressed and may cause them to place less importance upon avoiding head impact, reporting concussion symptoms and recovering fully before returning to play.

The NFHS SMAC will continue to monitor developments in soft and padded headgear and will consider adjustments to its position should valid scientific and clinical evidence arise.

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Invasive Medical Procedures on the Day of Competition **Position Statement**

**National Federation of State High School Associations (NFHS)
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The NFHS Sports Medicine Advisory Committee (SMAC) investigates numerous issues, rules, and situations and considers their potential risks to student athletes. One of these issues has been inquires about invasive procedures on the day of a contest.

This position statement is intended to represent the general philosophy of the NFHS SMAC and is not intended to be used as a rule or to direct the individual practice of medicine by a physician who is highly trained and experienced in sports medicine, on his or her patient. In considering these invasive procedures, the NFHS SMAC recommends that the physician remembers that the patient is a student athlete.

The NFHS SMAC encourages a philosophy that high school athletics serve the purpose of providing young men and women the opportunity for personal growth in a reasonably and acceptably safe and controlled environment. Medical interventions can enhance athletic performance by encouraging more optimal health and fitness and providing better control of chronic disease processes. Medical intervention can also enhance athletic performance by minimizing the symptoms of injury without increasing the risk of additional injury.

Medical interventions which increase the risk of disease exacerbation or additional injury are never appropriate on the day of competition, or on any other day, for a student athlete. There are three steps of decision making for the Basis of the Return to Play¹. These include evaluation of health risks, participation risks, and any factors in decision modification. If a disease process or injury is not adequately controlled by the day of competition to allow safe clearance for play with full function, then heroic invasive procedures, on the day of competition, performed with the sole purpose of enabling the athlete to participate, are philosophically inappropriate.

Finally, while the primary concern is with protecting the health of the student athlete, the NFHS SMAC believes invasive procedures are also a matter of participation equity to be addressed by member state associations.

1. Creighton DW, Shrier I, Shultz, R, et al. *Return-To-Play in Sport: a Decision-based Model*. [Clin J Sport Med](#). 2010; 20:379-385.

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