



CONCUSSION AND HEAD INJURIES

Update Mailing No. 3

April 15, 2010

Untold numbers of young people are suffering concussions at an alarming rate. Many go unreported. Concussions are one of the most commonly reported injuries in children and adolescents who participate in sports and recreational activities. The Centers for Disease Control and Prevention estimates that as many as 3,900,000 sports and recreation-related concussions occur in the United States each year. Concussions represent 9% of all sports injuries. Some



other concussion facts to consider:

- 10% of all contact sport athletes sustain a concussion annually.
- 63% of all concussions occur in football.
- Estimated that 20% of all football players sustain a concussion per season.
- An athlete who sustains a concussion is 4 to 6 times more likely to sustain a second concussion.
- Effects of concussion are cumulative in athletes who return to play prior to complete recovery.
- The best way to prevent problems with concussion is to manage them effectively when they occur.

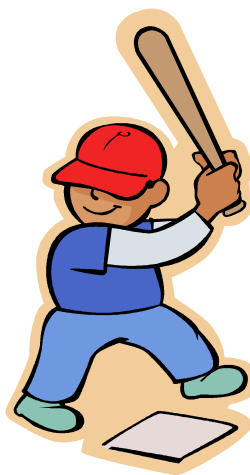
Therefore, the problem is that young athletes are at risk for serious short-term and long-term problems. Further, there is much variation in the knowledge of health care providers managing concussed athletes. Concussions are much more common in high school than any other level due to the large number of participants.

Literature reveals the following facts about concussions:

- Concussions are caused by a blow or motion to the head or body that causes the brain to move rapidly inside the skull.
- Concussions injure the brain and can range from mild to severe and can disrupt the way the brain normally works.
- Concussions occur in organized and unorganized sport or recreational activities and typically result from a fall or from players colliding with each other, the ground or with obstacles.
- Concussions occur with or without loss of consciousness, but the vast majority occur without loss of consciousness.

Young athletes are particularly vulnerable to injury and even death if they continue to play after the initial concussion or head injury. Concern has been voiced that some

affected youth athletes are prematurely returned to play which can result in actual or potential physical injury or death.



More detailed information about this issue follows. This information has been prepared by the Connecticut Concussion Task Force.



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What is a concussion?

Concussions are defined as a brief, transient alteration in mental function. They represent a serious injury that needs to be recognized, diagnosed as to its severity, and treated appropriately. Simply stated, a concussion causes chemical imbalances in the brain to occur. The brain has to then regulate itself to bring the chemical imbalance back to normal. These imbalances cause the brain to work overtime to return itself back to normal. To do this the brain needs blood. However, when the brain is concussed there is a decrease in blood flow to the brain.



This inability for the brain to get energy from the blood creates an energy crisis. With all the systems in the brain working overtime and a decrease in blood flow the neurons in the brain malfunction which cause the signs and symptoms that people feel when they have a concussion. These concussion symptoms can last briefly or last for a long period of time, while the brain tries to recover.

As long as the athlete is still reporting having signs or symptoms it would be dangerous to return to play before all their concussion symptoms have resolved. In addition, signs and symptoms have to return to normal while both at rest and with exertion because an increase in blood pressure can bring back the symptoms and all symptoms have to be resolved to safely return to play. Typical symptoms of concussion are: headache, nausea, fatigue, light sensitivity, noise sensitivity, inability to concentrate, difficulty with memory of new information, dizziness, and at times difficulty with sleep.

Concussions are serious injuries no matter how slight it is thought to be. An athlete of adolescent age needs to be treated more conservatively than the adult athlete. It may take longer for the adolescent to recover from concussion due to the belief that the brain is still developing. But no matter how long the recovery process is, the athlete should never return to sport participation while still suffering from the affects of a concussion.

How long does a concussion last?

There is no standard length of concussion. Concussions can take days, weeks or months to resolve. It is important to treat each concussion individually because not all concussions act the same. A concussion in one person will probably not act the same as a concussion in another person. The average time for a concussion to resolve in an adolescent is between 2-4 weeks, but total symptom resolution at rest and with exertion is paramount when managing concussions.

How soon can the student athlete return to play his/her sport?

An athlete can return to a sport when they present with no symptoms at rest, no symptoms with exertion and with normal cognitive function.



Exertion is defined as mental exertion, meaning that the athlete is able to go to school full time and take tests and do homework without an increase in symptoms. Exertion also needs to be measured with physical activity, meaning that with exercise the symptoms don't return. Normal cognitive function can best be assessed with the use of



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a neuro-psychological test program. Examples of these tests are ImPACT, Headminder, CogSport, or the ANAM program. The most frequently used programs are ImPACT and Headminder.

What are the symptoms of a concussion?

There are many symptoms of concussion. A person may have some of these but usually not all of them. They are: headache, nausea,



vomiting, dizziness, balance problems, motor skill problems, fatigue, double or blurry vision, sensitivity to light, sensitivity to noise, emotional changes, irritability, foggy feeling, difficulty with concentration or attention, short term memory problems, feeling slowed down, difficulty with sleep or sleeping a great deal and drowsiness. If an individual has gotten hit in the head and is experiencing any of these symptoms then they should seek medical attention.

The Connecticut Concussion Task Force/Pending Legislation

The Connecticut Concussion Task Force's mission is to increase the knowledge of the population of Connecticut on the injury of concussion. The role of the Task Force is to add to the research being done on concussions, standardize care for the concussed patient and educate medical providers on the protocols available for treatment.

Legislation is pending in this session of the General Assembly pertaining to concussions. The suggested legislation would require coaches to be trained to spot the signs of concussion and injured athletes would have to stay away



from practice and games until cleared for playing by a doctor. Currently, about 40% of those with a concussion return to play before qualified medical personnel indicate it's appropriate to do so. Under the legislation, similar to laws in Oregon and Washington, training for state coaching permits would include information about how to recognize signs of a concussion and how to seek proper treatment.

Medical Recommendations

The Connecticut State Medical Society has provided a number of recommendations pertaining to the management of adolescent concussions. Previously, patients were often told to "take it easy" for a few days and then to return to play. Now, how long concussion symptoms last has turned out to be far more important than the initial symptoms of concussions in predicting outcomes. The group has made the following recommendations:

1. No adolescent with a concussion should continue to play or return to a game after sustaining a concussion.
2. An individual sustaining a concussion should cease doing any activity that causes the symptoms of a concussion to increase. (e.g. headaches, dizziness, nausea, etc.)



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3. School attendance and activities may need to be modified.
4. Neuro-cognitive testing is an important component for the management of concussions.
5. No athlete should return to contact competitive sports until they are symptom free, both at rest and with exercise and have normal neuro-cognitive testing.
6. All sports and health education programs should teach students the specific signs and symptoms of concussions. Instructors must emphasize the serious consequences of ignoring concussion symptoms and the consequences that will occur if concussions are not properly treated.

This presentation does not allow the depth of information and specific steps provided under each of the above recommendations.

In addition, the aforementioned **Connecticut Concussion Task Force** would like to see districts administer a computerized test, which takes about 20 minutes, to create a baseline of data to be

used to determine the severity of a concussion should a student suffer one.

The CIAC has been very involved with this topic, having held a workshop last year on this issue. Their current position is one of advocacy and has not mandated use of such a test at this time due to the cost factor. The CIAC supports the legislation introduced in the General Assembly pertaining to concussions.



Policy Implications: A new sample policy, #5141.7, “Competitive Sports – Concussions and Head Injuries,” is provided as a foundation for districts’ management of concussions and head injuries in competitive sports. Adoption of such a policy provides an opportunity for the board to understand the topic, the concerns and their role in overseeing the district’s response. An administrative regulation is also provided for your consideration.

At this time, these are considered optional for inclusion in a district’s policy manual.

concussion con·cus·sion (kən-kūsh'ən) *n.*

1. A violent shaking or jarring.
2. An injury to a soft structure, especially the brain, produced by a violent blow and followed by a temporary or prolonged loss of function.

The American Heritage® Stedman's Medical Dictionary

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