

PSAL:

Concussion in Sports

and the

“Concussion Management and Awareness Act”

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Concussion Overview



Concussion accounts for 1 of 10 sports injuries

CDC: Estimated 2,651,581 children/adolescents under age 19 sustain a head injury annually

New York State (2009): 50,500 children/adolescents under age 19 visited the ER for traumatic brain injury (3000 were hospitalized)

>300,000 sports-related concussions occur annually in the United States, and the likelihood of suffering a concussion while playing a contact sport is estimated to be as high as 19 percent per year of play

Between four and 20 percent of college and high school football players will sustain a brain injury over the course of one season. The risk of concussion in football is three to six times higher in players who have had a previous concussion.

McGill University found 60 percent of college soccer players reported symptoms of a concussion at least once during the season. The study also revealed that concussion rates in soccer players were comparable to those in football. According to this study, athletes who suffered a concussion were four to six times more likely to suffer a second concussion.

Concussion Rates Among High School Athletes in Sports



Football
Boys ice hockey
Boys lacrosse
Girls soccer
Girls lacrosse
Girls basketball
Boys soccer
Boys wrestling
Girls field hockey
Boys Basketball
Girls softball



Mallika Marar, Natalie M. McIlvain, Sarah K. Fields and R. Dawn Comstock. Epidemiology of Concussions Among United States High School Athletes in 20 Sports. Am J Sports Med.

2012 40:747

Concussion Overview



ESPN video: Life Changed By Concussions (Zackery Lystedt Law)

<http://espn.go.com/video/clip?id=7525526>

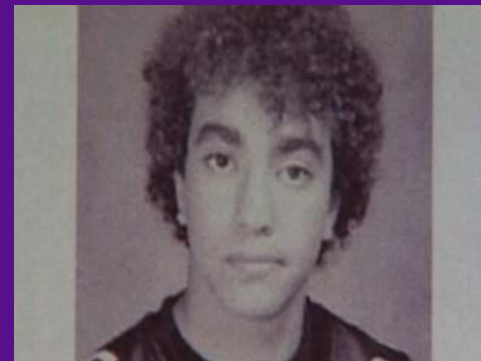
ESPN video: Nathan Stiles (Kansas High School football player)

<http://sports.espn.go.com/espn/otl/news/story?id=5818575>

Brain injuries in high school football with incomplete recovery reached the double digits in three of the past four years

There are approximately 3 deaths per year related to brain injury in high school football

- Ryne Dougherty, 16 y.o.
Montclair High School, NJ
Died after sustaining head injury October 2008
Second concussion of season



Concussion Management and Awareness Act



- Statute's provisions take effect July 1, 2012
- Requires the biennial completion of an approved State Education Department and Department of Health course relating to recognizing the symptoms of mild traumatic brain injuries (“concussion”) and monitoring and seeking proper medical treatment for athletes who suffer mild traumatic brain injuries.
 - Coaches
 - Physical education teachers
 - School nurses
 - Athletic trainers
- Deemed to be the minimum standards that must be complied with but more stringent standards may be adopted



Concussion Management and Awareness Act



During school athletic activities schools are required to remove from activity any student suspected of sustaining a mild traumatic injury (“concussion”)

Student is not permitted to return to athletic activity until:

- Symptom free for not less than 24 hours
- Evaluated by and received written signed authorization from a licensed physician
- Students required to receive clearance by the district’s medical director
- Authorization is required to be kept in the student’s permanent health record
- Schools required to follow any guidance from the student’s treating physician in regards to limitations on school attendance and activities

School districts are permitted to choose to establish a:

- Concussion management team to oversee implementation of the regulations
- Program which provides information on mild traumatic brain injuries to parents/guardians

Concussion Management and Awareness Act



Course of instruction shall include but not be limited to:

- Definition of mild traumatic brain injury
- Signs and symptoms of mild traumatic brain injuries
- How mild traumatic brain injuries may occur
- Practices regarding prevention
- Guidelines for the return to school and school activities for a pupil who has suffered a mild traumatic brain injury, regardless of whether such injury occurred outside of school (graduated return to activities)
- Such information will be included in any permission form or consent form or similar document that may be required from a parent or person in parental relation for a pupil's participation in interscholastic sports

Concussion Management and Awareness Act



Requires the immediate removal from athletic activities of any pupil believed to have sustained a mild traumatic brain injury.

In the event that there is any doubt about whether a pupil has sustained a concussion it shall be presumed that he or she has been so injured until proven otherwise.

Concussion management team may be composed of:

- Athletic Director
- School nurse
- School physician
- Coach of an interscholastic team
- Athletic trainer or other appropriate personnel as designated by the school

Concussion management team:

- Oversee the concussion program including requirement regarding completion of biennial concussion training program by appropriate personnel
- May establish and implement a program that provides information on mild traumatic brain injuries to parents and persons in parental relation throughout each school year

Concussion Overview



Concussion = mild traumatic brain injury

- Injury to the brain
- Direct impact to head or blow occurring anywhere on the body
- A result of brain moving back and forth or twisting rapidly inside the skull
- Symptoms of concussion are a result of temporary change in the brain's function
- In most cases symptoms resolve over a short period of time but in some cases symptoms can last for weeks or longer
- In cases of re-injury during the recovery phase...permanent brain injury is possible
- Children and adolescents are more susceptible to concussions and take longer than adults to fully recover...therefore it is imperative to immediately remove from athletic activity any student suspected of having sustained a concussion
- Student must remain out of athletic activities until evaluated and cleared to return to athletic activity by a licensed physician

Prevention and Safety



- Education
 - Proper equipment
 - Supervision
-
- Students need to know the symptoms of a concussion!
 - Students need to inform parent/guardian, appropriate school personnel, even if they believe they have sustained the mildest of concussions
 - Review information with student athletes periodically throughout each season
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- Educate student athletes to avoid initiating contact to another player with their head or to the head of another player
 - Instruct sport-specific safe body alignment
 - Athletes should be encouraged to be aware of what is going on around them to reduce the number of unexpected body hits
 - Proper instruction should also include the rules of the sport, defining unsportsmanlike conduct, and enforcing penalties for deliberate violations

Identifying a Concussion



Suspected head injury?

Symptoms of a concussion may appear immediately, in a few hours, or evolve and worsen over a few days

Symptoms:

- Amnesia (decreased or absent memory of events prior to or immediately after the injury, or difficulty retaining new information)
- Confusion or appearing dazed
- Headache or head pressure
- Loss of consciousness
- Balance difficulty or dizziness or clumsy movements
- Double or blurry vision
- Sensitivity to light and/or sound
- Nausea, vomiting, and/or loss of appetite
- Irritability, sadness, or other changes in personality
- Feeling sluggish, foggy, groggy, or lightheaded
- Concentration or focusing problems
- Slowed reaction time, drowsiness
- Fatigue and/or sleep issues

Identifying a Concussion



Students who develop any of the following signs, or if other symptoms worsen, must be seen and evaluated at the nearest hospital emergency room:

- Headaches that worsen
- Seizures
- Looks drowsy and/or cannot be awakened
- Repeated vomiting
- Slurred speech
- Unable to recognize people or places
- Weakness or numbing in arms or legs, facial drooping
- Unsteady gait
- Dilated or pinpoint pupils, or change in pupil size of one eye
- Significant irritability
- Any loss of consciousness
- Suspicion of skull fracture: blood draining from ear, or clear fluid from nose

Diagnosis of Concussion



Any student suspected of having a concussion - either based on disclosure of a head injury, observed or reported symptoms, or by sustaining a significant blow to the head or body - must be removed from athletic activity and/or physical activities (e.g. PE class, recess) and observed until an evaluation can be completed by a medical provider.

Injury Characteristics

- The student, and/or parent/guardian, or school staff member who observed the injury should be asked the following as part of the initial evaluation:
 - Description of injury
 - Cause of the injury
 - Student's memory before and after the injury
 - If any loss of consciousness occurred
 - Physical pains and/or soreness directly after injury
 - Other symptoms/signs

Concussion



Risk factors to recovery

Students with these are at a higher risk for prolonged recovery from a concussion:

- History of concussion, especially if currently recovering from earlier concussion
- Personal and/or family history of migraine headaches
- History of learning disabilities or developmental disorders
- History of depression, anxiety, or mood disorders

Students whose symptoms worsen or generally show no reduction after 7-14 days , or sooner depending on symptom severity, should be considered for referral to a medical specialist in traumatic brain injury

Post - Concussion Management



Physical and cognitive rest

Graduated return to activity

Student must be fully recovered before resuming activities that may result in another concussion

Cognitive rest:

- Computers and video games
- Television viewing
- Texting
- Reading or writing
- Studying or homework
- Taking a test or completing significant projects
- Loud music
- Bright lights

Post - Concussion Management



Cognitive rest

- Parents/guardians, teachers, and other staff should watch for signs of concussion symptoms reappearing with any type of mental activity:
 - Fatigue
 - Headaches
 - Irritability
 - Blurred vision
 - Dizziness
- Students may only be able to attend school for a few hours per day and/or need rest periods during the day
- Students may exhibit increased difficulties with concentrating, focusing, memory, learning new information, and/or an increase in irritability or impulsivity
- Policies should be in place for transitioning students back to school and for making accommodations for missed tests and assignments

Post - Concussion Management



Physical rest

- Adequate sleep
 - Taking frequent rest periods or naps
 - Avoiding physical activity that requires exertion (increase heart rate or increased head pressure)
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- Students may feel sad or angry about having to limit activities, or having difficulties keeping up in school
 - Students should be reassured that the situation is temporary, that the goal is to help the student get back to full activity as soon as it is safe, and to avoid activities that will delay their recovery
 - Students should be informed that the concussion will resolve more quickly when they follow their medical provider's orders as supported by various studies
 - Students will need support and encouragement at home and at school until symptoms fully resolve

Return to School Activities



- Once a student diagnosed with a concussion has been symptom free at rest for at least 24 hours, a medical provider may choose to clear the student to begin a graduated return to activities
- Students need to be monitored following each progressive challenge, physical or cognitive, for any return of signs and symptoms of concussion
- A student should only move to the next level of activity if they remain symptom free at the current level
- Return to activity should occur with the introduction of one new activity each 24 hours
- If any post-concussive symptoms return, the student should drop back to the previous level of activity, then re-attempt the new activity after another 24 hours have passed

Return to School Activities



Sample return to physical activity protocol

- Phase 1: Low impact, non-strenuous, light aerobic activity such as walking or riding a stationary bike. If tolerated without return of symptoms over a 24 hour period proceed to;
- Phase 2: Higher impact, higher exertion, and moderate aerobic activity such as running or jump roping. No resistance training;
- Phase 3: Sport specific non-contact training. Low resistance weight training with a spotter;
- Phase 4: Sport specific activity, non-contact drills. Higher resistance weight training with a spotter;
- Phase 5: Full contact training drills and intense aerobic activity;
- Phase 6: Return to full activities without restrictions

Student



Encourage to communicate any symptoms promptly

Recommended that students are:

- Educated about prevention of head injuries
- Familiar with signs and symptoms
- Aware of risk of concussion
- Educated about risk of severe injury, permanent disability, and even death that can occur with re-injury by resuming normal activities before recovering from a concussion
- Following instructions from their private medical provider
- Encouraged to ask for help and to inform teachers of difficulties they experience in class and when completing assignments
- Encouraged to report injuries of classmates and teammates
- Promoting an environment where reporting signs and symptoms of a concussion is acceptable

Parent / Guardian



- Be familiar with signs/symptoms of concussion
- Be familiar with the Concussion Management and Awareness Act
- Be familiar with concussion policies or protocols
- Be aware that concussion symptoms that are not addressed can prolong recovery
- Provide forms and written orders from medical provider to the school in a timely manner
- Monitor their child's physical and mental health after a concussion
- Follow the medical provider's orders at home for return to activities

PSAL



- Any athlete with a suspected concussion will NOT be allowed to return to play or return to any team related activity until evaluated and cleared by a licensed physician. This includes but is not limited to games, practices, film sessions, walk throughs, team meetings, and any other team related or physical activities.
- In order for an athlete to return to a practice or game or any sports activity he or she must obtain medical clearance as documented on the PSAL Concussion Assessment Form.
- Each school must identify a staff member/point person (e.g. Athletic Director) to “manage” all concussion cases. A record of all head injuries and concussions (sustained by the school’s athletes) must be maintained.
- All PSAL coaches will be educated to administer the Standardized Assessment of Concussion (SAC) to any athlete suspected of sustaining a concussion
- A SAC must be completed immediately after a head injury / suspected concussion
- At every practice and game there will be someone identified to immediately evaluate an athlete suspected of having a concussion. The evaluation will include the SAC.
- Health care providers will be given a SAC form when covering a PSAL event
- Players who have symptoms for 2 weeks or longer should be evaluated by a physician who specializes in the treatment of concussions

STANDARDIZED ASSESSMENT OF CONCUSSION (SAC)



1. ORIENTATION

Month: _____ 0 1
 Date: _____ 0 1
 Day of week: _____ 0 1
 Year: _____ 0 1
 Time (within 1 hr): _____ 0 1
 Orientation total score _____ / 5

2. IMMEDIATE MEMORY

(All 3 trials are completed regardless of score on trial 1 and 2; total score equals sum across all 3 trials.)

List	Trial 1	Trial 2	Trial 3
Word 1	0 1	0 1	0 1
Word 2	0 1	0 1	0 1
Word 3	0 1	0 1	0 1
Word 4	0 1	0 1	0 1
Word 5	0 1	0 1	0 1
Total	0 1	0 1	0 1

Immediate memory total score _____ / 15

(Note: Subject is not informed of delayed recall testing of memory.)

NEUROLOGICAL SCREENING:

Loss of consciousness: (occurrence, duration)
 Pre- and posttraumatic amnesia: (recollection of events pre- and post-injury)
 Strength:

Sensation:

Coordination:

3. CONCENTRATION

Digits backward. (If correct, go to next string length. If incorrect, read trial 2. Stop after incorrect on both trials.)

4-9-3 6-2-9 _____ 0 1
 3-8-1-4 3-2-7-9 _____ 0 1
 6-2-9-7-1 1-5-2-8-6 _____ 0 1
 7-1-8-4-6-2 5-3-9-1-4-8 _____ 0 1

Months in reverse order. (entire sequence correct for 1 point)

Dec-Nov-Oct-Sept-Aug-July
 June-May-Apr-Mar-Feb-Jan) _____ 0 1
 Concentration total score _____ / 5

EXERTIONAL MANEUVERS

(when appropriate)

5 jumping jacks 5 push-ups
 5 sit-ups 5 knee-bends

4. DELAYED RECALL

Word 1 _____ 0 1
 Word 2 _____ 0 1
 Word 3 _____ 0 1
 Word 4 _____ 0 1
 Word 5 _____ 0 1
 Delayed recall total score _____ / 5

SUMMARY OF TOTAL SCORES:

Orientation _____ / 5
 Immediate memory _____ / 15
 Concentration _____ / 5
 Delayed recall _____ / 5
 Overall total score _____ / 30

More Information:



- New York State Athletic Administrators Association (NYSAAA)
- Brain Injury Association of New York State
- Center for Disease Control and Prevention
- ESPN video: Life Changed By Concussions (Zackery Lystedt Law)
- New York State Public High School Athletic Association
- Nationwide Children's Hospital - Concussion in the Classroom

Thank you.....

